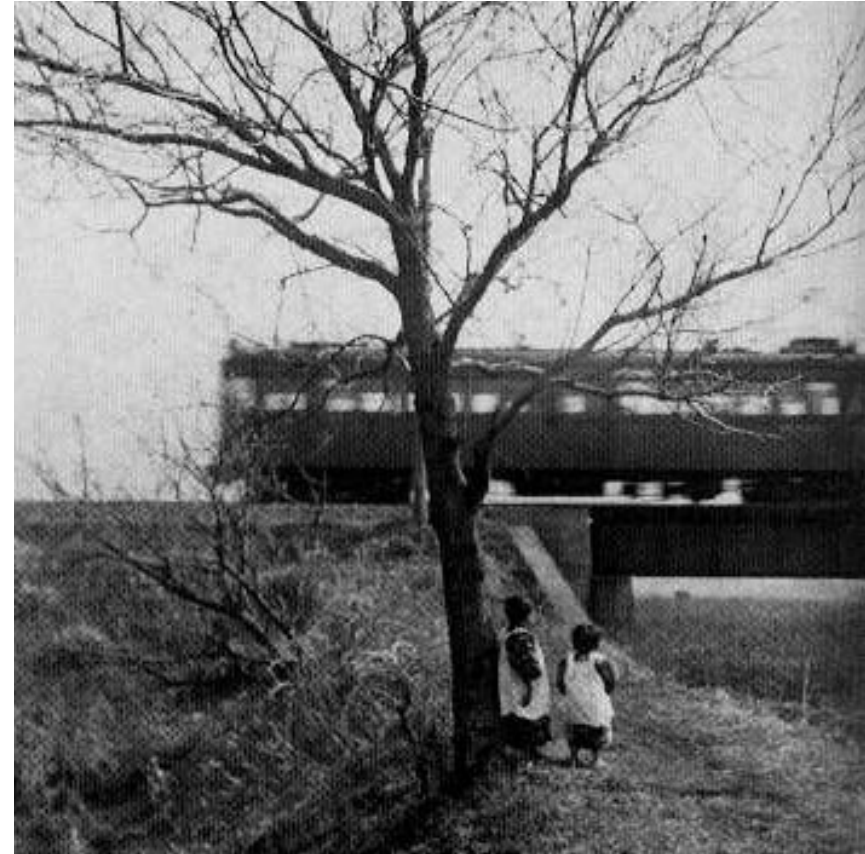


Economic Development of Japan



大正時代

No.6 WW1 and 1920s



Topics for Discussion

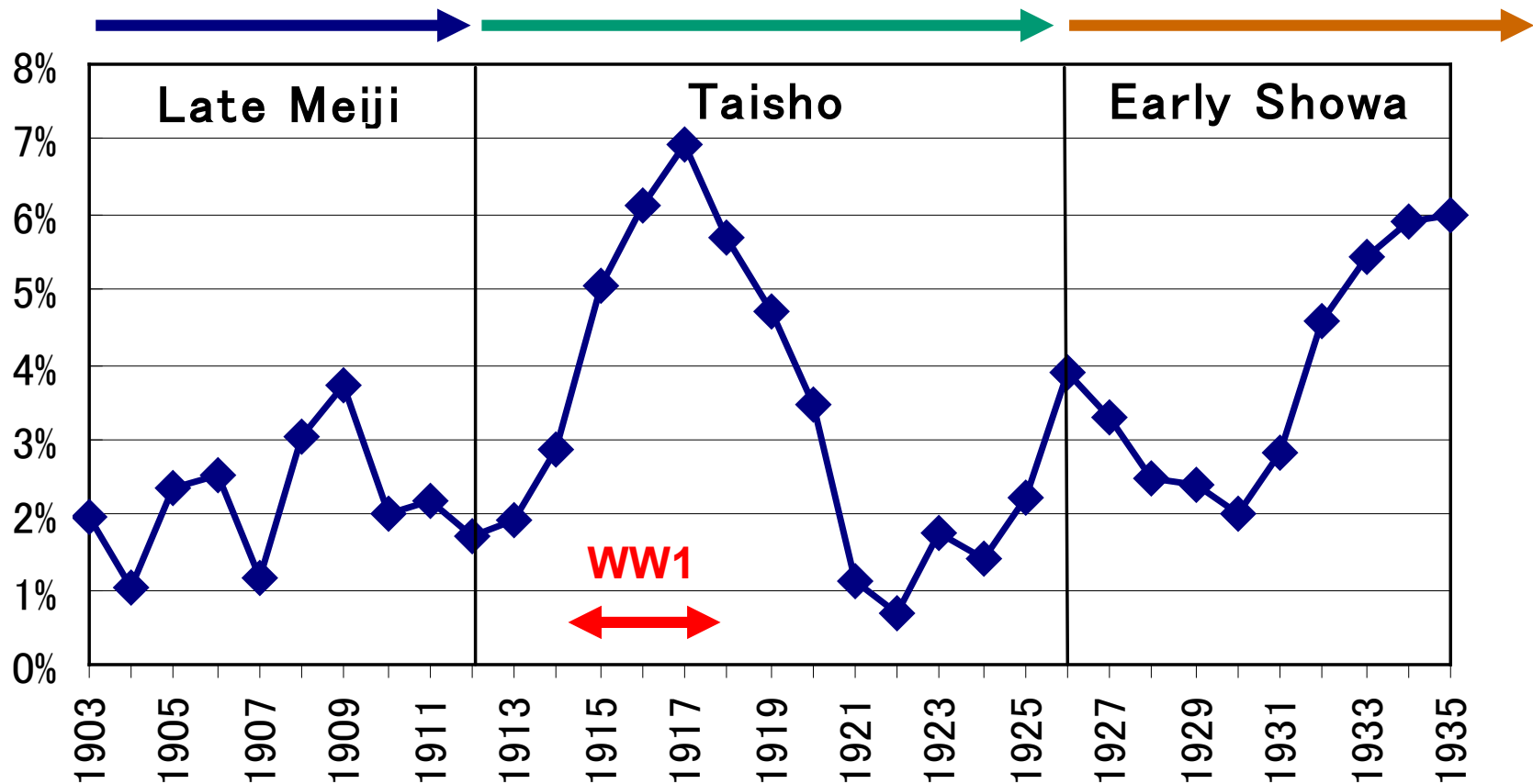
- ❑ What was the impact of WW1 on the Japanese economy? Discuss industrial growth, export, import substitution and balance-of-payments.
- ❑ Explain industrial development in the 1910s and 20s. What were the features of new zaibatsu groups?
- ❑ As Japan progressed from light manufacturing to heavy industries, what were the problems policy makers and company managers faced?
- ❑ Explain the different strategies adopted by Nissan and Toyota in automobile production (this was in the 1930s but touched in this lecture).
- ❑ Explain the achievements of Taisho Democracy in terms of people's rights, social movements and political reform.

Export-led Bubble and Consequences

- ❑ Japanese calendar changes when a new emperor is inaugurated. Under the reign of Emperor Taisho (1912-26), Japan moved into a new phase of industrialization.
- ❑ WW1 brought a great export-led boom to Japan. While Europe was at war, Japan expanded export and promoted import substitution of textile products, chemicals and even some machinery. Output, profits, prices, trade surplus and gold reserves all surged. Industrialization was greatly accelerated, but some of the achievements were artificial and short-lived.
- ❑ The bubble economy collapsed in 1920. This led to overcapacity, bad debt and weak business conditions. The Bank of Japan and government protected weak firms and banks instead of prompting their exit or cleaning up their balance sheets. This eventually led to a banking crisis of 1927 (next lecture).
- ❑ Even under a slow economy, heavy and chemical industries (HCI) started to grow during and after WW1. Power generation rose and new zaibatsu with HCI focus emerged. In the 1930s, Toyota and Nissan began car production.
- ❑ HCI required skill accumulation. Free economy and footloose workers had to be replaced by firms' internal incentive and promotion mechanisms to retain experienced engineers and technicians (this occurred in large firms only).

Real GNE Growth

(Estimated 5-year moving average)



Source: estimates by Ohkawa, Takamatsu & Yamamoto in K. Ohkawa & M. Shinohara, *Patterns of Japanese Economic Development: A Quantitative Appraisal*, Yale Univ. Press, 1979. Gross National Expenditure (GNE) is identical with GNP, which is almost the same as GDP.

Transition from Light Manufacturing to Technology-based Industries

Light manufacturing

- In the early stage of industrialization, labor-intensive low-technology sectors such as textile & 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.

 **In Japan, this transition occurred around the 1920s.**

Today, many developing countries are unable to cross this threshold (middle income trap).

Technology-based industries

- Establishment of high-tech, value-creating sectors such as metal, machinery, chemicals, IT and high-tech services requires technology learning and retention of highly skilled engineers (no job hopping).
- Policy must assist technology acquisition, investment, finance, etc. of firms. Due to scale merit, large monopoly tends to emerge.

Unbalanced Growth of Interwar Years

Source: Kyoji Fukao, *Japanese Growth and Stagnation from the Perspective of World Economic History* (2020).

From 1913 to 1940, the rapid expansion of heavy industries generated large gaps across sectors and prefectures (regions).

- ❑ Labor productivity rose 1.3 times in agriculture, 3.12 times in industry (manufacturing & construction), and 1.55 times in services.
- ❑ Heavy industries (machinery, metals, chemicals) expanded rapidly driven by strong domestic demand and successful import substitution. Their import dependence fell from 34% (1902-11) to 12% (1930-39).
- ❑ This was further accelerated by military spending in the 1930s.
- ❑ Manufacturing growth and high income were concentrated in urban areas where power, ports, and engineers were available. Labor mobility from poor to rich prefectures became active.
- ❑ Heavy industrialization generated new practices that continued to the postwar period: (i) lifetime employment, (ii) long-term business relationship, (iii) weak shareholders, and (iv) strong industrial associations.

World War I and Export-led Boom

- Export demand pushed up prices, profits and production and artificially accelerated import substitution, especially in machinery and chemicals.
- The balance-of-payments crisis of late Meiji (gold reserve loss) was resolved by the export boom.
- Narikin*, or new rich, emerged (Suzuki Shoten, ship narikins, etc.) They spent money on conspicuous consumption but their days did not last long.



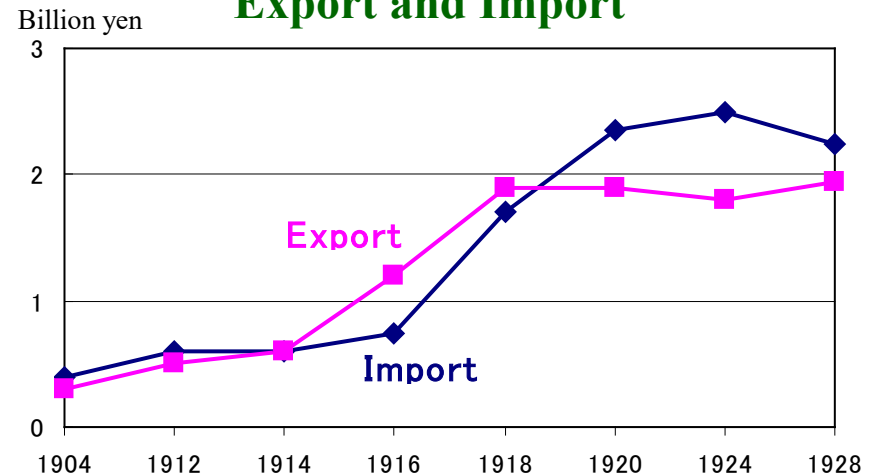
Shipping Business: Prices & Profit Jump

| | 1914 | 1917 |
|-------------------------------|------|-------|
| Ship rental (yen/ton) | 3 | 45 |
| New ship (yen/ton) | 50 | 1000 |
| Nippon Yusen profit (mil yen) | 4.84 | 86.31 |

| | 1914 → 18 |
|--------------|-----------|
| Silk | +60% |
| Cotton | +8% |
| Iron | +193% |
| Shipbuilding | +700% |
| Dye | +1600% |

← Industrial production

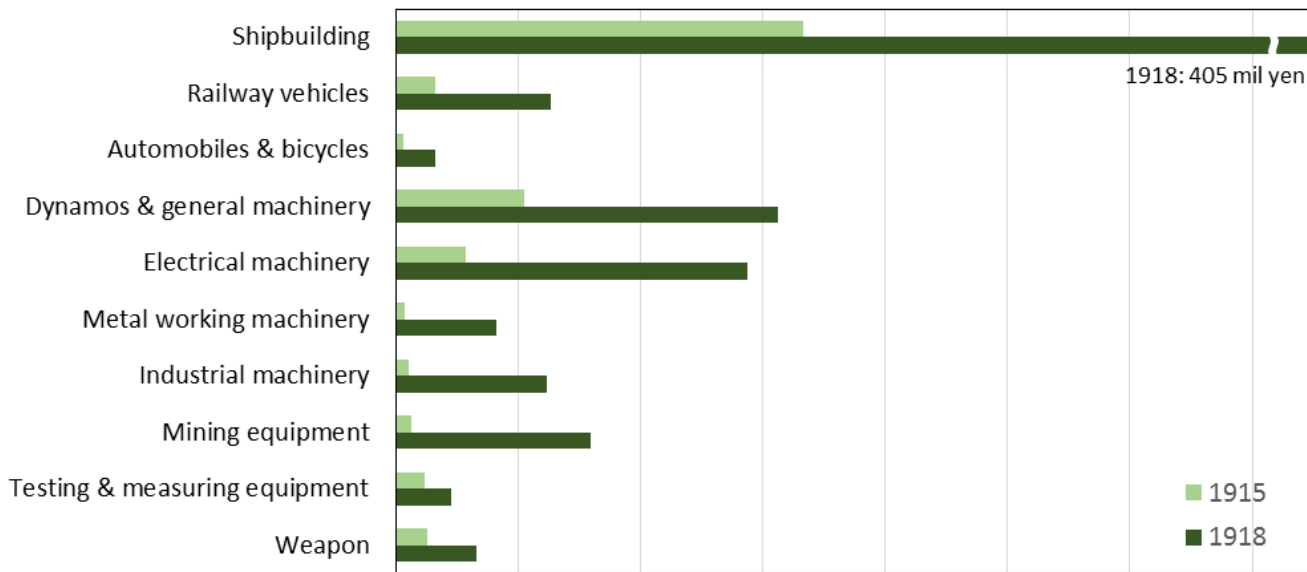
Export and Import



Domestic Supply Ratio →

| | 1913 | 1919 |
|-------|------|------|
| Iron | 47% | 65% |
| Steel | 34% | 47% |

(Mil. yen)



Production of Private Machinery Industry

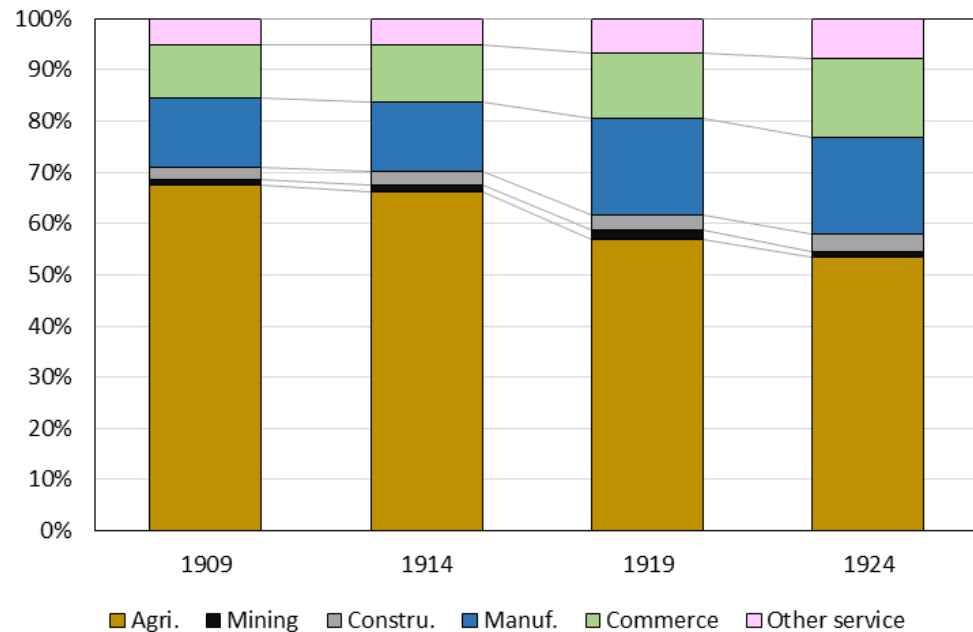
Output jumps during WW1

Source: S. Yamazaki, *Economic History of Japan, New Edition*, University of Air Press, 2003, p.94.

Employment Structure

Agriculture shrinks and manufacturing rises between 1914 and 1919

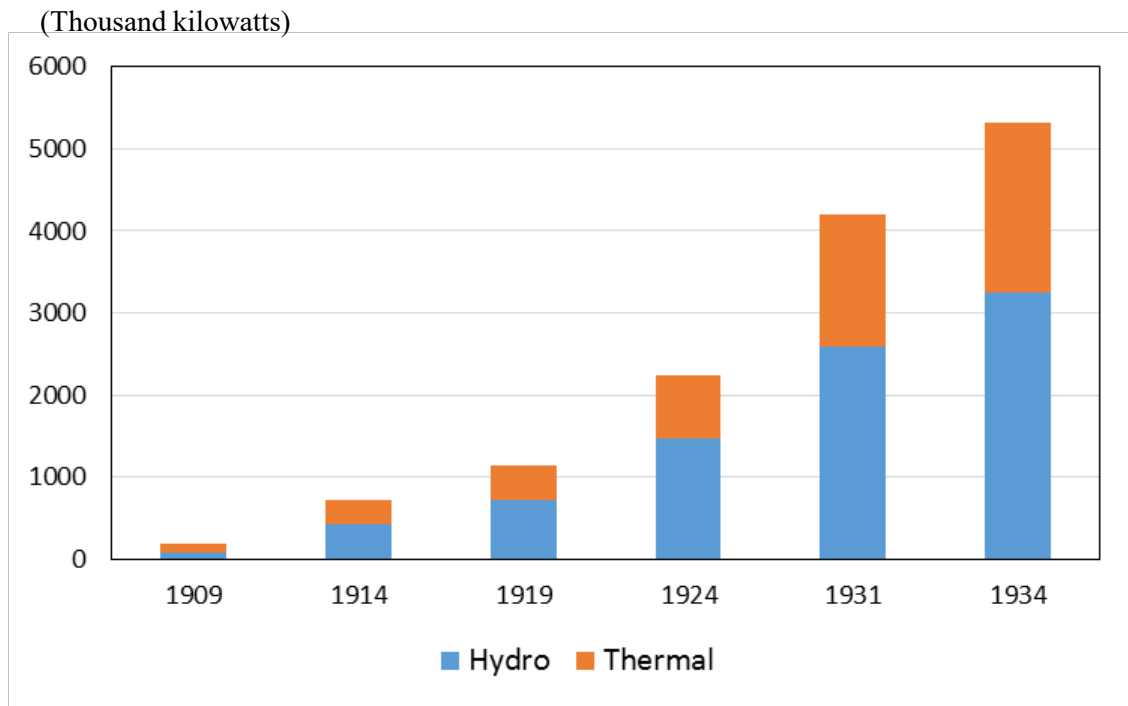
Source: S. Yamazaki, *Economic History of Japan, New Edition*, University of Air Press, 2003, p.98.



Power Generation

(maximum capacity)

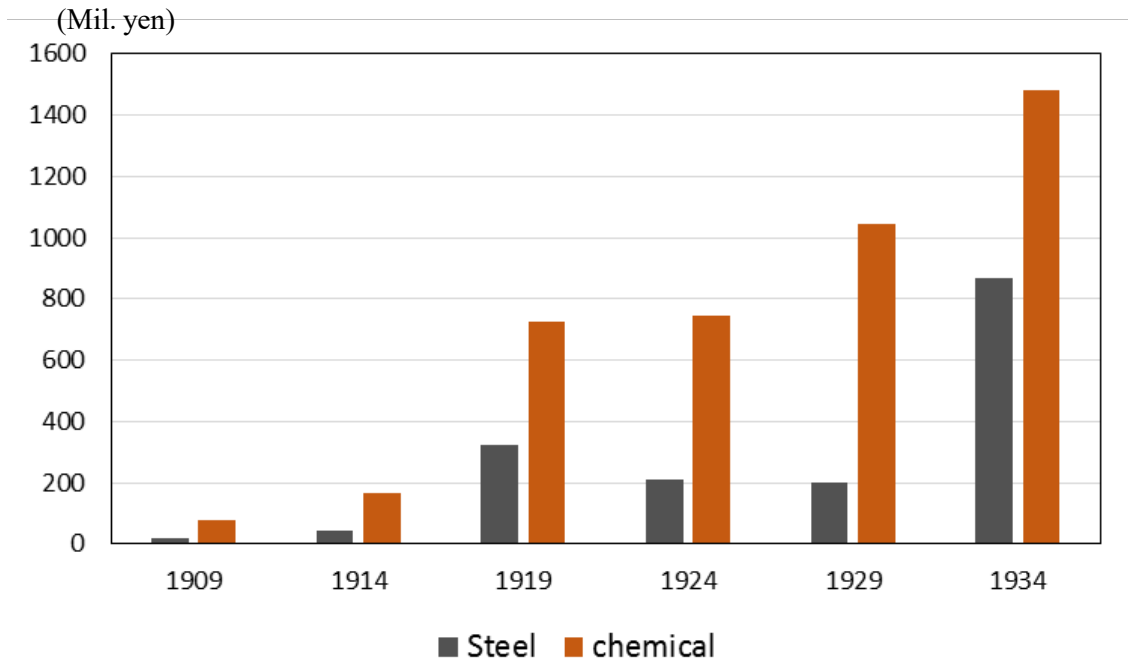
Source: *Historical Statistics of Japan*, vol.2, p.449.



Production of HCIs

(establishments with five or more workers)

Source: *Historical Statistics of Japan*, vol.2, pp.315-316.



New Zaibatsu (Konzern)

- ❑ Concentrating in Heavy & Chemical Industries rather than banking, textile or trading like traditional zaibatsu.
- ❑ Backed by political connection and support.
- ❑ Active investment in production capacities in Korea and Manchuria (Northeast China)

| Konzern | Features | Affiliated firms at present |
|---------------------|--|---|
| Nissan 日産 | Cars, chemicals, machinery, fishery, mining; Raising fund in stock market; Invest in Manchuria | Hitachi, Nissui, Nissan Motors, Sompo Japan, Japan Energy |
| Riken 理研 | Chemical, medical research | Riken (Research Inst.) |
| Nicchitsu 日窒 | Fertilizer, medicine, metals | Chisso |
| Nisso 日曹 | Sodium hydroxide | Nihon Soda |
| Mori 森 | Aluminum, ammonia, iodine | Showa Denko |

Nissan Konzern (Zaibatsu)



- ❑ Nissan Konzern was created by Ayukawa Yoshisuke (1880-1967) by restructuring failed Kuhara Zaibatsu.
- ❑ Initially the company was named Nihon Sangyo (Japan Industry), a holding company that actively raised funds by public offering of shares.
- ❑ Nissan's core firms were Japan Mine (now JX) and Hitachi. Later, Kokusan Kogyo (now Hitachi Metal), Nissan Motor and Manchuria Heavy Industry (dissolved after WW2) were added.
- ❑ Strong in manufacturing but weak in trade and finance. After WW2, few group firms inherited the name except Nissan Motor Corp.

Main Member Companies of Nissan-Hitachi Group Today

Hitachi Manufacturing

Hitachi Shipbuilding

Hitachi Metal

Hitachi Kasei (chemical)

Hitachi Capital

Hitachi High Technologies

JX Group (mining & engineering)

Nissan Motor Corporation

Nissan Metal Industry

Sompo Japan Nipponkoa (insurance)

Nissui (fishery)

Nichirei (food)

Riken Konzern (理化学研究所+理研産業団)

- ❑ The idea of Riken was proposed in 1913 by Takamine Jokichi 高峰讓吉, the inventor of Taka-Diastase (Amylase) & Adrenaline, to secure research funds for Japanese scientists.
- ❑ Riken was established in 1917 with support from the Royal Family, businesses and government, but faced management and financial crisis.
- ❑ In 1921, Okochi Masatoshi 大河内正敏, the third Director of Riken, introduced decentralization (研究室制度), research freedom, ample budget and commercialization of invention.
- ❑ By 1939, Riken's businesses grew to 63 firms and 121 factories, with large income flow (3 mil. yen/year) through patents & dividends.
- ❑ Yukawa Hideki & Tomonaga Shinichiro are Riken-associated Nobel prize winners (physics).



Riken's Main Products in the Pre-WW2 Period

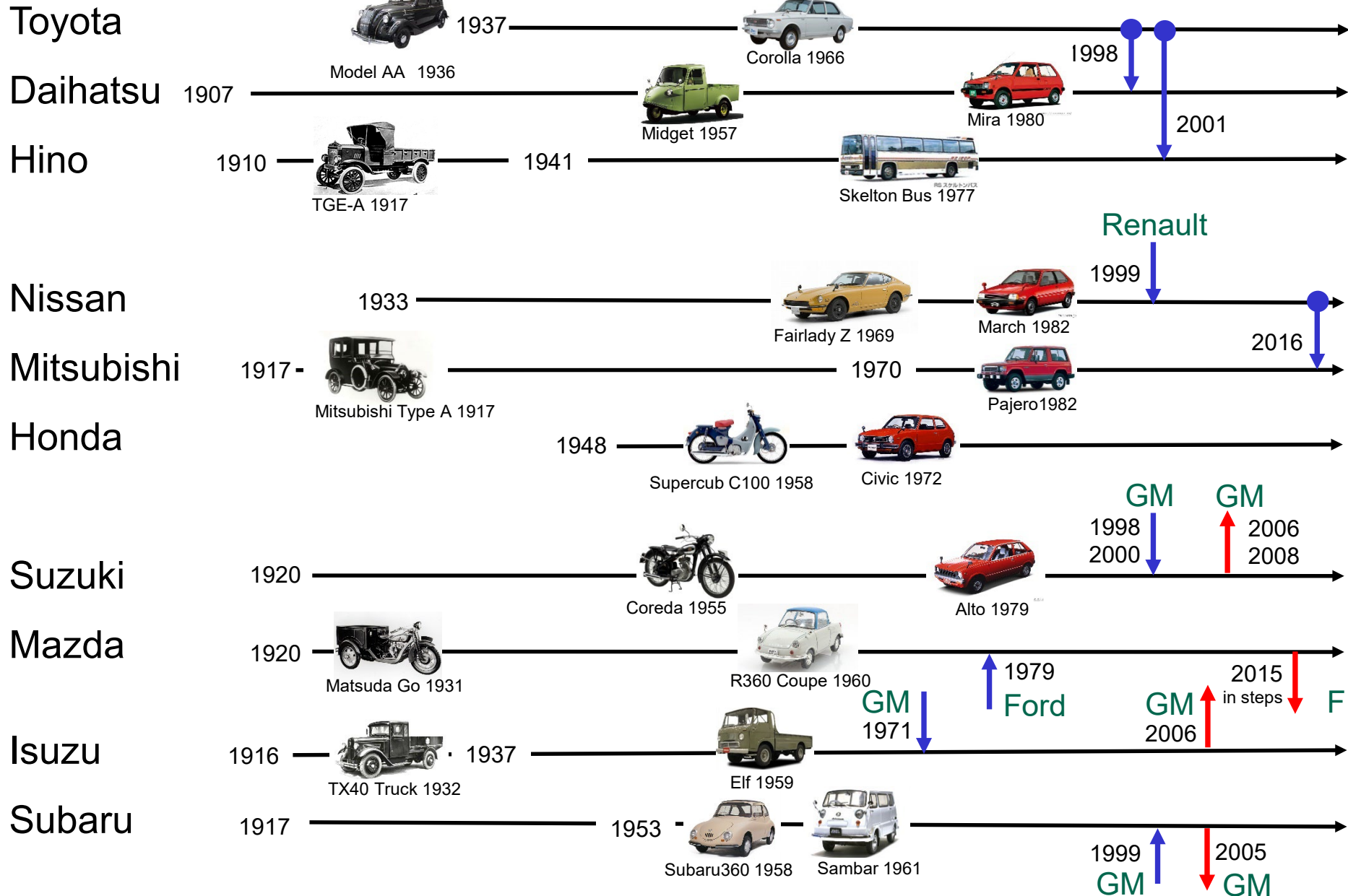
| | |
|-------------|-------------------------------------|
| Vitamin A | Machine tools |
| Almite | Aircraft components |
| Piston ring | Synthetic sake |
| Magnesium | Positive image photosensitive paper |
| Rubber | Cyclotron (particle accelerator) |

Riken's Offshoot Firms

Ricoh
Riken
Kyowa Hakko
Riken Vitamin
Riken Keiki

Japanese Automotive Manufacturers

→ Control relation
← Dissolution



Nissan: Purchasing Car Technology from America



- ❑ Ayukawa, the founder of new zaibatsu Nissan, was an aggressive business manager who expanded his business empire through purchases, M&A, direct transfer of foreign technology, and extensive business and official connections. Car making was just one of his wide business portfolio.
- ❑ His metal casting firm manufactured motors for boats and agricultural machines as well as components for Ford and GM cars. In 1933, Ayukawa acquired the Datsun factory of DAT Motors and combined it with his casting firm to create Nissan Motor Company.
- ❑ As Nissan had no trading section, Mitsubishi Trading supported Nissan to import a whole set of latest automotive equipment from the US to replicate mass-production assembly lines. American engineers were hired to teach advanced design, construction and operation methods for the plant.
- ❑ In 1935, Ayukawa decided to move into the production of military trucks. Through its connection with GM, Nissan found an American firm willing to sell a complete truck plant together with blueprints. Mitsubishi Trading again helped Nissan to transfer the entire plant to Japan and also to purchase additional equipment.

Toyota: Learning Car Production from Scratch



- ❑ Toyoda Kiichiro was the eldest son of Toyoda Sakichi, the founder of Toyoda Weaving Machine. He visited the massive production lines of Ford Motors in Detroit and was greatly impressed. He wanted to create a Japanese car maker.
- ❑ At home, without his company's support, Kiichiro began visiting Japanese factories, universities and government offices, purchased German and American equipment, and reverse engineered the latest GM Chevrolet. Recognizing Kiichiro's initial results, the Toyoda Board finally approved establishment of the Automotive Department in 1933.
- ❑ Kiichiro declared that the first Toyota car would roll out within one year. His engineer friends helped, US models were further analyzed, a large factory was built in what was to become Toyota City, and additional equipment was imported.
- ❑ The engine was modeled after GM, the chassis was Ford-based, and the design was copied from Chrysler. After many failures, the team succeeded in casting cylinder block and cylinder head of the engine. The first Toyota car was ready in May 1935—only five months behind the schedule.

(Note: the company name was changed from Toyoda to Toyota in 1936)

Major FDI Firms in 1910s-30s

| | Year | Japanese name | Foreign partner | Foreign ownshp | Remark |
|----|------|-----------------------------|--|----------------|----------------------------------|
| 17 | 1917 | Yokohama Rubber Manuf. | F.B. Goodrich (US) | 50% | Goodrich sale from 1912 |
| 18 | 1918 | Japan-US Sheet Glass | Libby Owens Sheet Glass (US) | 35% | 1922, under Sumitomo |
| 19 | 1920 | Sumitomo Electric Cable | Western Electric (US) | 25% | |
| 20 | 1922 | Asahi Silk Weaving | Vereinigte Glanzstoff Fabriken (Germany) | 20% | 1929, under Nicchitsu |
| 21 | 1923 | Fuji Electric Manufacturing | Siemens (Germany) | 30% | J side: Furukawa |
| 22 | 1923 | Mitsubishi Electric | Westinghouse Electric (US) | 10% | |
| 23 | 1925 | Japan Ford | Ford Motor (US) | 100% | Previously, sales through agents |
| 24 | 1927 | Japan General Motors | General Motors (US) | 100% | |
| 25 | 1927 | Japan Victor | Victor Talking Machine (US) | 100% | 1937, under Nissan |
| 26 | 1927 | Daido Match | Sweden Match (Swe) | 50% | 1932, under Nissan |
| 27 | 1928 | Japan Columbia Phonograph | Columbia (UK) | 59% | 1935, under Nissan |
| 28 | 1928 | Toyo Babcock | Babcock & Wilcox (UK) | 71% | Boilers, steam turbines |
| 29 | 1929 | Japan Benberg Silk Fiber | J.P. Benberg (Germany) | 20% | 1933, merged with no.20 |
| 30 | 1931 | Mitsubishi Oil | Associated Tidewater Oil (US) | 50% | J: Mitsubishi Corporation |
| 31 | 1931 | Sumitomo Alminum Smelting | Aluminum Co. of Canada (Can) | 50% | |
| 32 | 1932 | Toyo Otis Elevators | Otis Elevators (US) | 60% | J: Mitsui Corporation |
| 33 | 1932 | Japan Submarine Cable | Int'l Standard Electric (US) | 12% | Under Sumitomo |

Source: S.J.Bytheway (2005), pp.166-169

Major FDI Firms in 1910s-30s (contd.)

| | Year | Japanese name | Foreign partner | Foreign ownshp | Remark |
|----|------|---------------------------|--|----------------|-------------|
| 34 | 1933 | National Cash Register | National Cash Register (US) | 100% | |
| 35 | 1937 | Japan Watson | Watson Computing Tabulating Recording Machine (US) | 100% | |
| 36 | 1939 | Shibaura Kyodo Industries | United Engineering (US) | -- | J: Shibaura |

Source: S.J.Bytheway (2005), pp.166-169

Compared with Meiji Period,

- The number of US FDI increases.
- FDI in automobile, electrical, machinery.
- Zaibatsu plays key role in FDI partnership or subsequent take-over.

At the same time, Japan's outward FDI begins:

- FDI to China: textiles (Shanghai, Qingdao), steel (Anshan)
- FDI to Korea: heavy chemical industries

Technology Transfer: FDI, External Borrowing and Self Effort

Some countries learn foreign technology by self effort (research, copying, technical contract, patent purchase, etc.) while others prefer FDI to lead. Some countries finance industrialization internally while others depend on foreign loans.

| | FDI | External commercial borrowing | World Bank/ODA loans and technical assistance |
|-------------------------------------|-------------------------------|--|---|
| Meiji Japan | Initially banned; very little | For military buildup & infrastructure only | -- |
| Post WW2 Japan | Very little | No | Yes (1950s-60s) |
| Korea since 1960s | No | Yes | Yes |
| Taiwan since 1960s | Some | No | No |
| China since 1990s | Yes | No | Yes |
| Thailand, Indonesia and many others | Yes | Yes | Yes |

Social Change and Taisho Democracy

- ❑ In the Taisho period (1912-26), Japanese people began to adopt modern urban life style and absorbed Western ideas including democracy and Marxism. Office workers began to commute by train and receive monthly salary.
- ❑ Politically active citizens debated national policies and demanded people's rights, such as rights for workers, farmers, women and the discriminated people (progenies of *eta* and *hinin* in the Edo period).
- ❑ In politics, waves of popular demonstrations in 1913-14 condemned undemocratic power transitions between Seiyukai (government party) and unelected conservative statesmen. In 1924, a three-party coalition won an election and formed a government that adopted universal male suffrage.
- ❑ From 1924 to 1932, Seiyukai and Minsei Party held power in turn as either government was dissolved. This was called *Kensei no Jodo* (normal way of constitutional politics) as distinct from the previous practice where the prime minister was simply appointed without regards to parliamentary seats.
- ❑ Minobe and Yoshino, two Tokyo University professors, each in his own way developed theories to defend the parliamentary cabinet system and the rights of the working class by interpreting the Meiji Constitution without rejecting it.

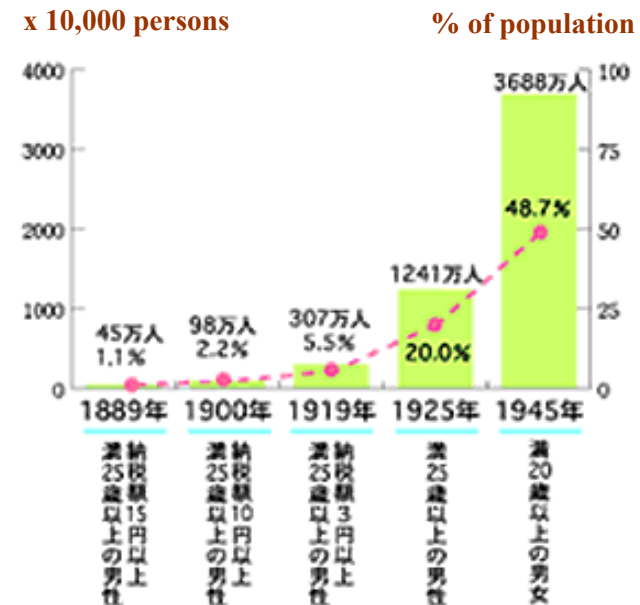
Social Movements in Taisho Period

- ❑ Emergence of new middle mass—professionals, office workers, students
- ❑ Universal male election (1925)
- ❑ Initiation of labor movement and May Day (1920)
- ❑ Riots by landless farmers and formation of the Farmers Union (1922)
- ❑ Women's rights movement—establishment of *Seitoshu* (Blue Stockings Society, 1912) and New Women's Society (1920)
- ❑ *Zenkoku Suiheisha* (National Level Society, 1922) to fight discrimination against the descendants of *eta* and *hinin*, officially discriminated people in the Edo period
- ❑ The rising popularity of socialism and Marxism which competed with democracy



The first May Day in Japan, 1920

Number of Voters

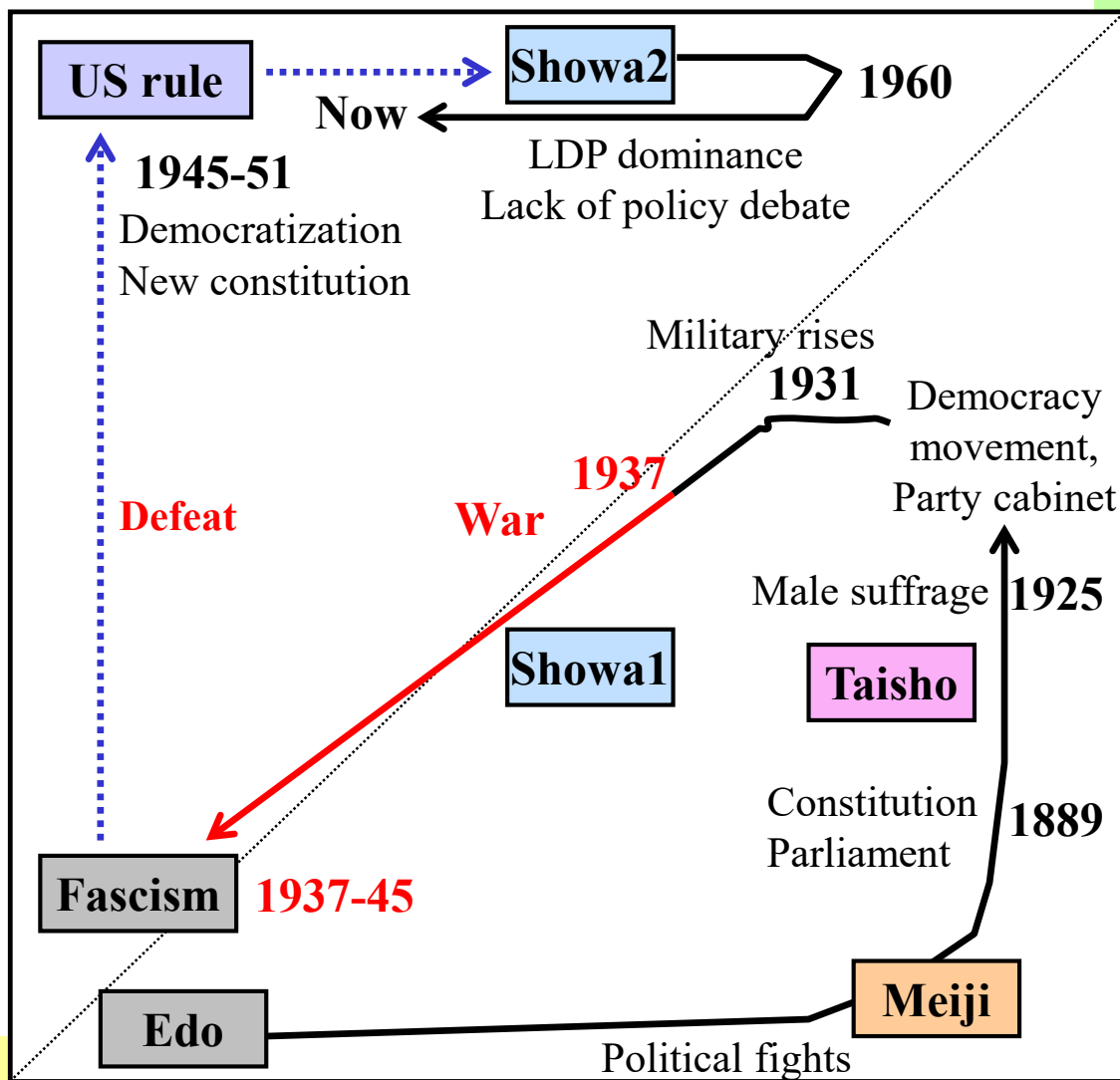


Japanese Politics from Edo to Present

Democratic institution (Form) ↑

Constitution
Laws
Parliament
Election
Court

Full democracy



Pure dictatorship

Reform vs conservatism, big vs small government, pro- vs anti-USA, etc.

Political competition (Content)

Early Meiji

1881

1889/90

WW1/Taisho

Before Constitution

Constitutional Monarchy

External military campaign

Saigo 1877
Former samurais



Japan-China War
1894-95

Japan-Russia War
1904-05

Colonize Korea
1910

Top-down industrialization

Okubo
Kuroda
Okuma

Fiscal activism & war

Fiscal crisis

Export-led boom solves fiscal crisis

Top-down democratization

Kido
Inoue
Itagaki

Ito

Constitution
Parliament

Government

Spending!

Yamagata
Conservatives
Military

Ito

Seiyukai Party

Big spenders

Bottom-up democratization

Itagaki
Ueki
Nakae

Okuma
Fukuzawa

(Liberty Party)

Opposition

Tax cuts!

Taisho
Democracy

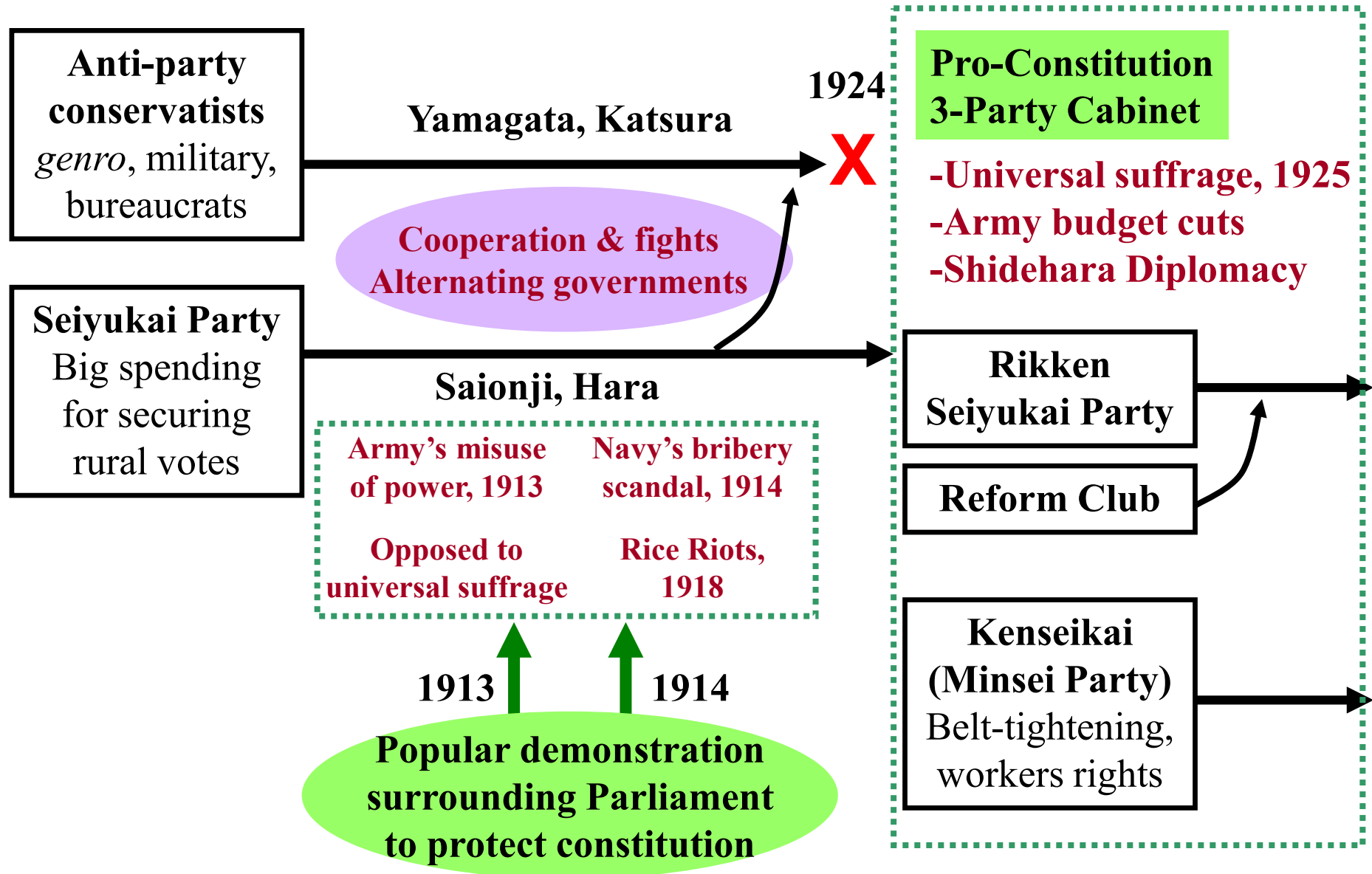
Expelled

Okuma

Hoshi



Taisho Democracy – Political Development



Meiji Constitution *(italics added)*

Article 4 —The Emperor is the head of the Empire, combining in Himself the rights of sovereignty, and exercises them, *according to the provisions of the present Constitution.*

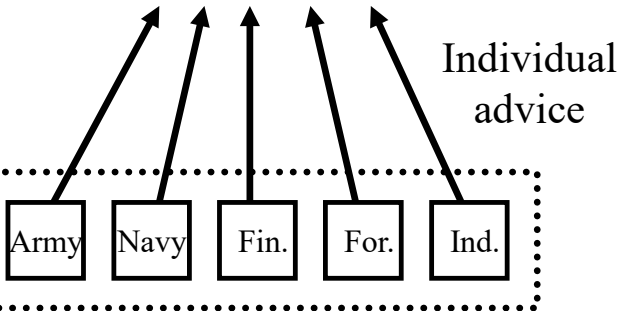
Article 55 —(1) The *respective* Ministers of State shall give their advice to the Emperor, and be responsible for it. (2) All Laws, Imperial Ordinances, and Imperial Rescripts of whatever kind, that relate to the affairs of the state, require the countersignature of a Minister of State.

(1) Can Emperor really make decisions or just follow advice?

(2) Is the parliamentary cabinet system possible?

Emperor decides

Emperor

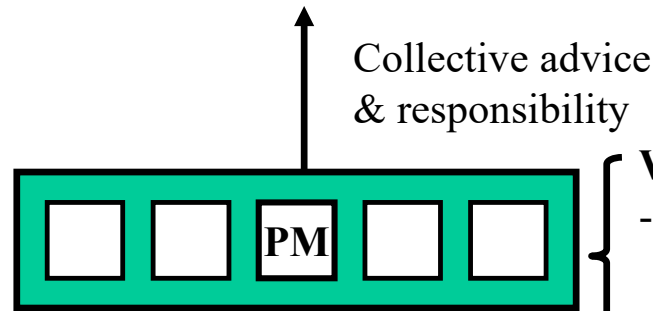


Individual ministers

OR

Cabinet decides

Emperor



Cabinet

Who forms government:

- Appointed by *Genro*?

OR

- Party with largest seats?

Prof. Minobe Tatsukichi (1873-1948), Tokyo Univ.



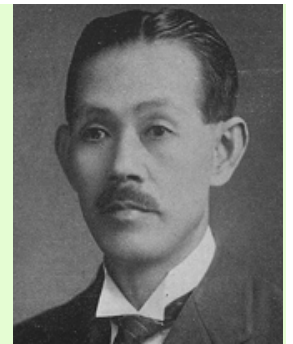
<Organ Theory of the Emperor>

- The state, as a legal entity, has the sovereignty.
- The emperor is the highest organ of the state, and operates under the Constitution (not unlimited power)

<Justification of party cabinets> (Article 55)

- Cabinet must take collective responsibility → Same political party
- Imperial orders must have Minister's signature → Cabinet's power

Prof. Yoshino Sakuzo (1878-1933), Tokyo Univ.



Democracy develops in 3 steps to achieve results:

- (1) **Parliamentary cabinet where largest party forms government**
- (2) **Universal suffrage, to expand the voter base**
- (3) **Social policies, to directly improve people's lives**

Yoshino proposed *minpon shugi* (民本主義), a type of democracy which accepted the emperor's rule, to promote the rights and well-being of workers and farmers within the Meiji Constitution.

Yoshino Sakuzo, “Essence of Constitutional Politics and the Way to Fully Develop its Potential” (1916)

「憲政の本義を説いてその有終の美を済すの途を論ず」

- ❑ Essence of constitutional politics is (i) pursuit of the welfare of all people, and (ii) respect of popular opinion in policy making.
- ❑ This is possible even under emperor’s rule (Meiji constitution). Sovereignty and policy purposes are separable.
- ❑ People must control parliament, not vice versa. For this, education of citizens, strict enforcement of election law, and expansion of voting rights to all (male) adults are needed.
- ❑ Government must be held responsible to parliament. For this, parliamentary cabinet (party cabinet) is desirable in which the party with largest parliamentary seats forms government. This system works well with two large parties, but not with many small parties.
- ❑ Democracy does not function if people are uneducated. Elite has the role of guiding people (in substance) but must humbly serve people (in form). This pattern promotes democracy to its full potential.



Shidehara Diplomacy

Kijuro Shidehara, 1872-1951

Foreign Minister, 1924-27, 1929-31

Prime Minister 1945-46

His policy was more peaceful than before or after him

- Maintain good relations with US and UK
- Respect Washington Naval Disarmament Treaty (1921-22)
- Hamaguchi Cabinet signs London Naval Disarmament Treaty despite objection from navy (1930)
- No military intervention in China; secure Japan's economic interest through diplomacy and negotiation
- When China protests and resists, his diplomacy breaks down
- Domestically, his policy was criticized as Coward Diplomacy 軟弱外交
- Failed to stop Manchurian Incident (1931) started by *Kantogun* (關東軍 Japanese army stationed in China)

Deterioration of Japan-US Relationship

- The US was the largest trading partner for Japan: 44% in export and 26% in import (1925).
- **The China problem**—Japan asserts its “special interests” in China, the US wants open door policy (esp. for bank loans and railroads)
- **Japanese Immigration Problem**
 - 1890s Japanese economic immigrants to US West Coast; anti-Japanese movement begins
 - 1907 Gentlemen’s Agreement to curb Japanese immigration
 - 1913 Anti-Japanese legislations in California
 - 1924 Ban on Japanese immigration
 - 1942 Japanese Americans are sent to concentration camps during the Pacific War (photo)

Manzanar Camp, California

