

# Economic Development of Japan



## No.5 Meiji Macroeconomy

Opening of New  
Tokyo Stock Exchange  
Building, 1897

# Topics for Discussion

- ❑ Explain macroeconomic conditions during Meiji. Did they support or constrain industrialization? Consider money, banking, inflation, budget, trade pattern, tariff rates, exchange rate regime and international reserves.
- ❑ What was the hottest economic issue in the early sessions of Meiji Parliament (established in 1890)? Identify the issue, supporters and opponents, and their reasons.
- ❑ Explain fiscal activism adopted by central and local governments. What were the major expenditure items?
- ❑ How did the war with China (1894-95) and with Russia (1904-05) affect the macro balance and industrialization?
- ❑ Who supplied investment funds, and how? Were foreign borrowing and FDI important during Meiji?

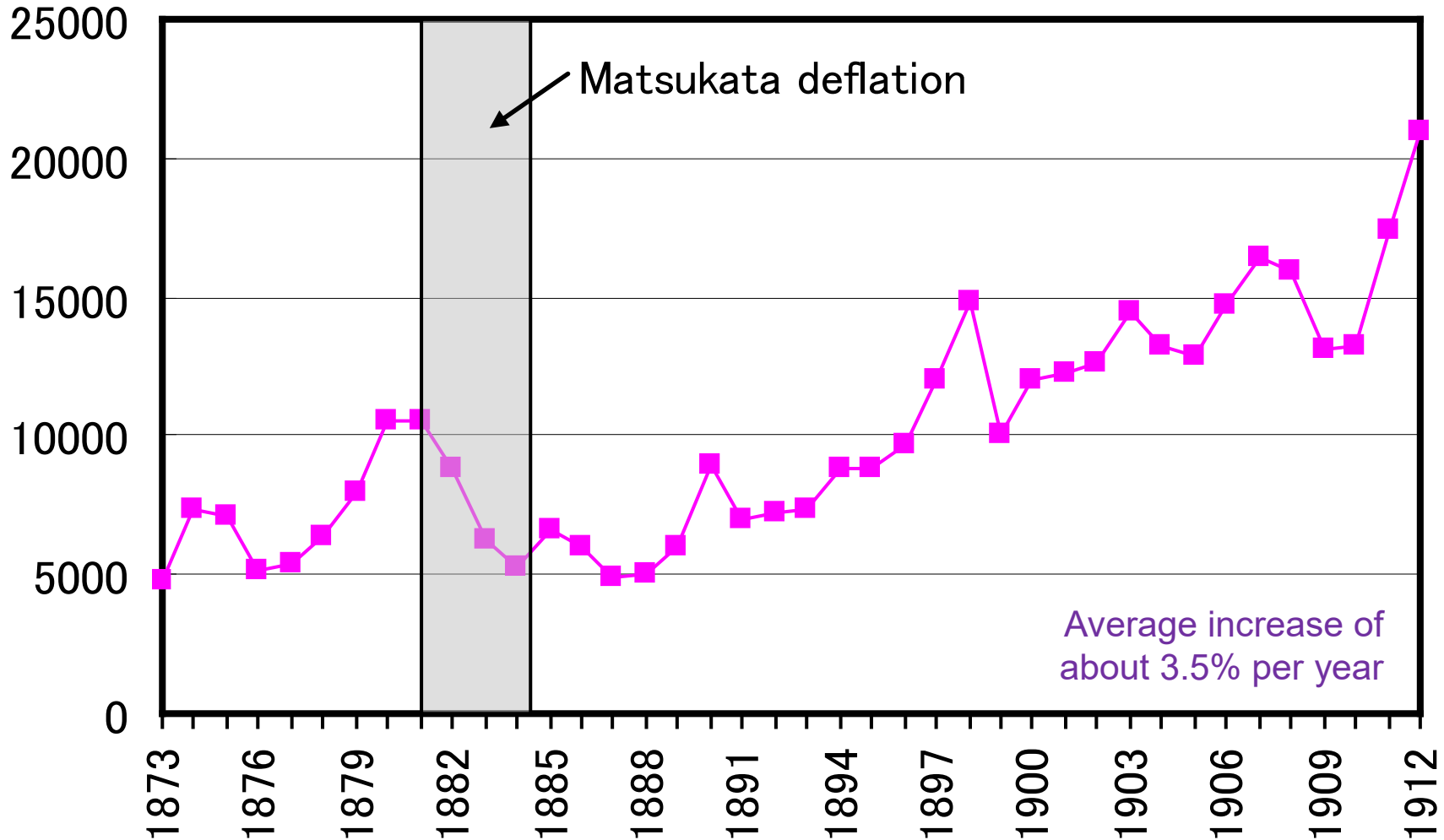
# From Monetary Confusion to Fiscal Consolidation, then Fiscal Activism

- ❑ Meiji Japan suffered monetary confusion, inflation and trial-and-error for a few decades prior to the creation of a new monetary and banking system. Matsukata deflation, adoption of the gold standard (fixed exchange rate) and creation of ordinary banks gradually stabilized the macroeconomic situation.
- ❑ From the late 1880s, private dynamism generated many waves of Company Booms (establishment of large joint stock companies). Investments were directed to textile and railroad construction, then spread to other sectors.
- ❑ Industrial revolution in light manufacturing (textile industry) was achieved in the 1890s. Machinery industries were still weak. Meanwhile, business cycles (booms and busts, bank runs) began to emerge in a young capitalist economy.
- ❑ Government insisted on tax increase and aggressive building of infrastructure and naval fleet, but rural voters (land tax payers) demanded fiscal austerity. This was the key economic debate in the early parliamentary sessions.
- ❑ After wars with China and Russia, both of which ended in Japanese victory, central and local governments turned to big fiscal spending. This accelerated industrialization but caused serious fiscal and external imbalances.

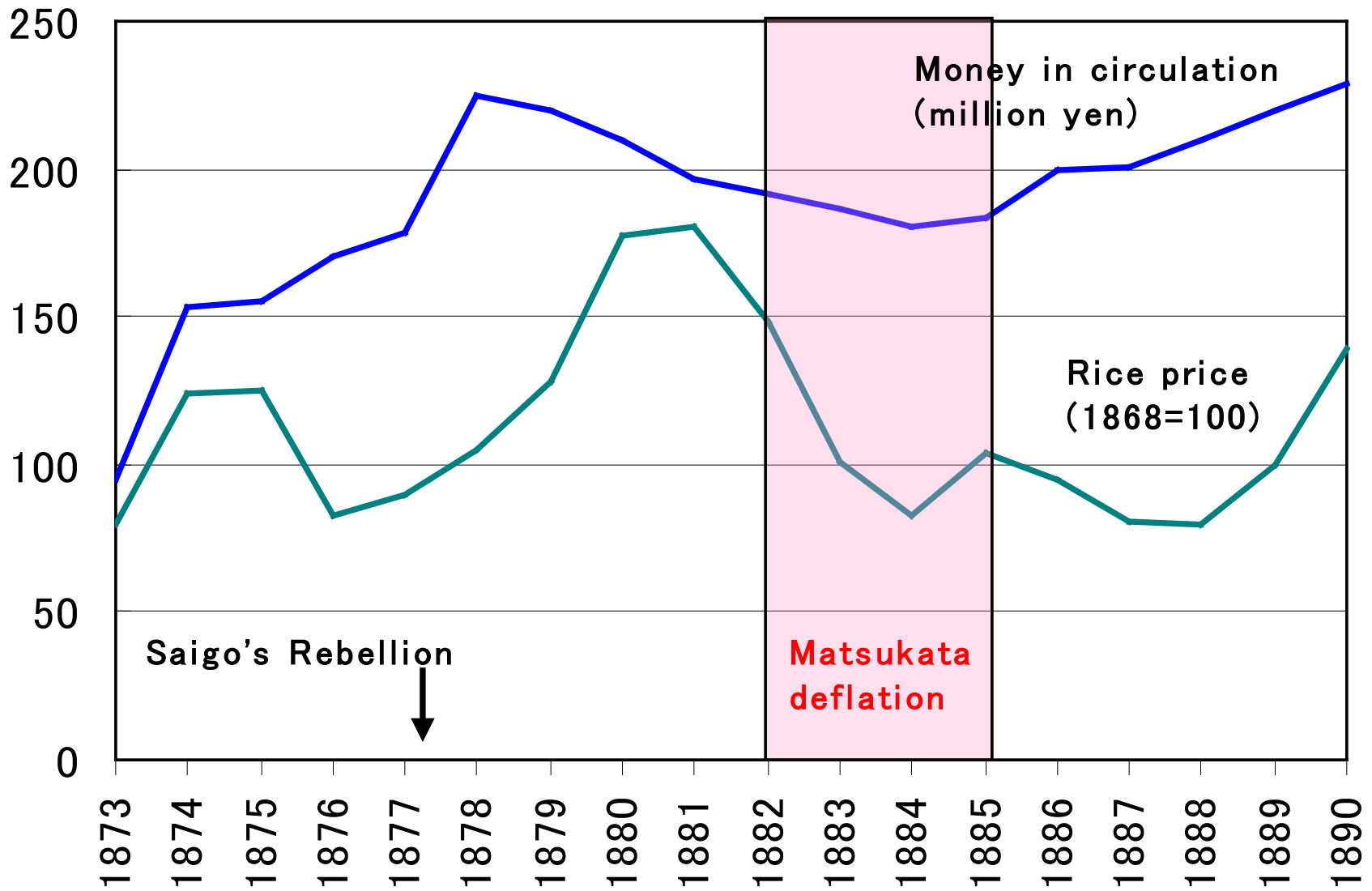


# Inflation in Meiji Period

Rice Price per Koku (Yen/150kg)

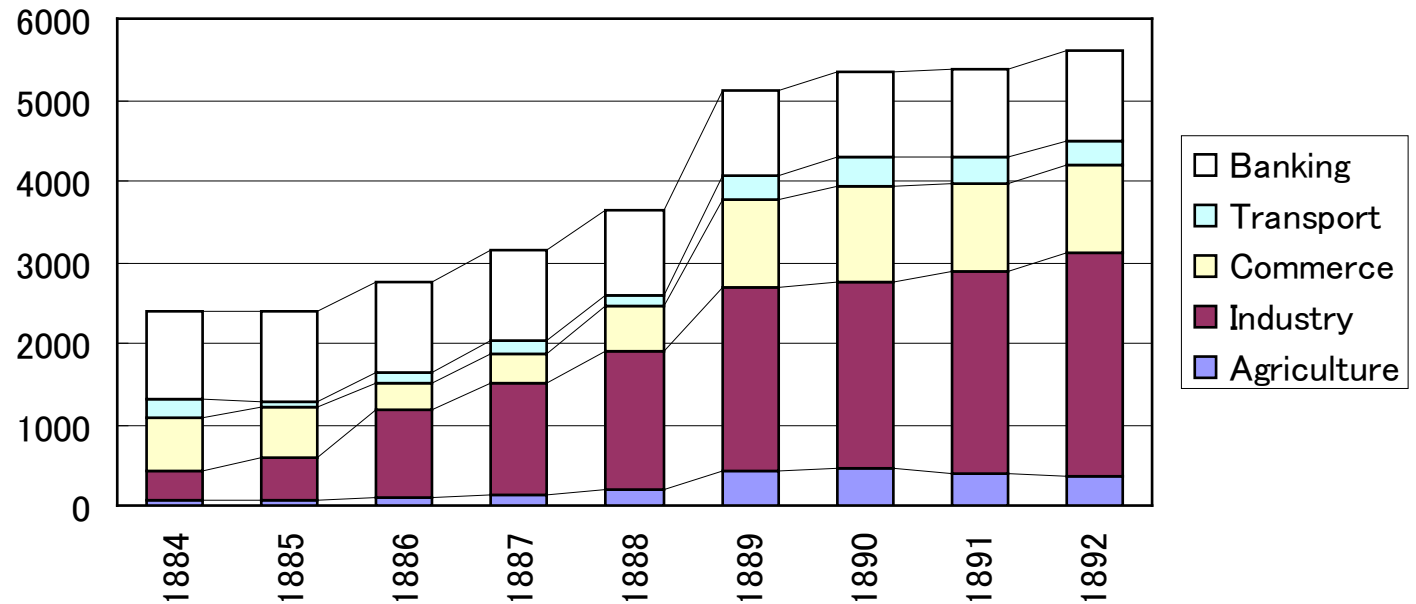


# Money and Inflation in Early Meiji

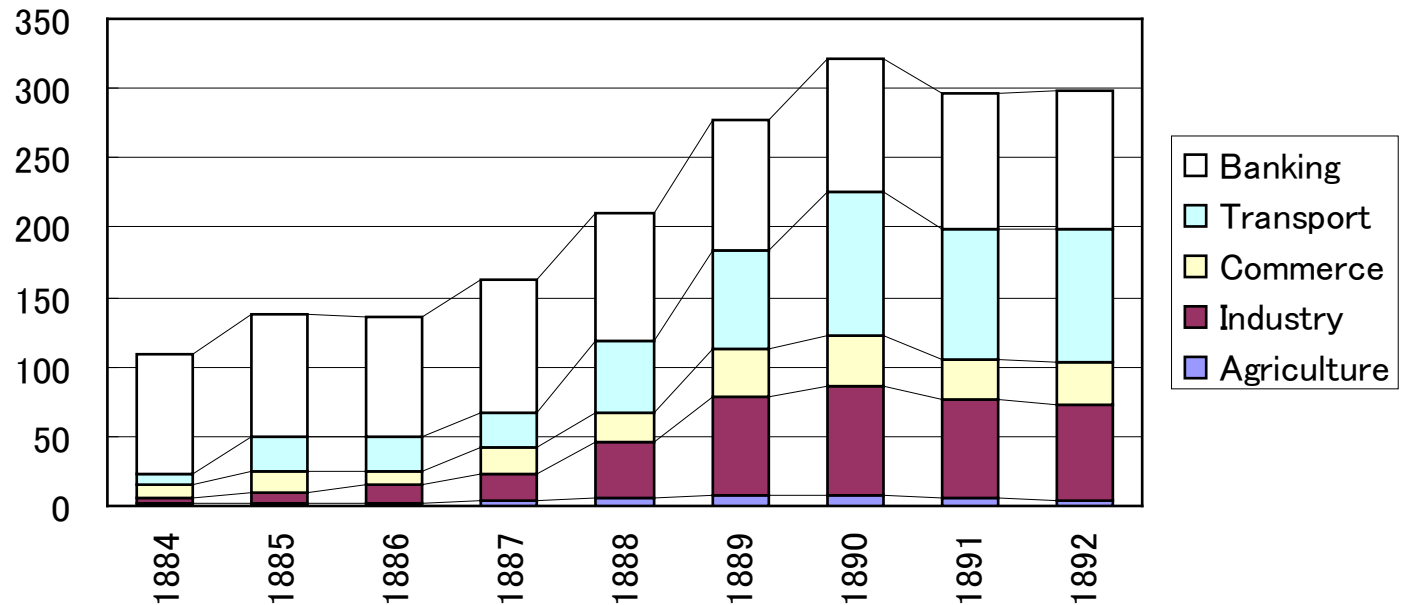


# First Company Boom (Joint stock company creation boom)

Number of companies

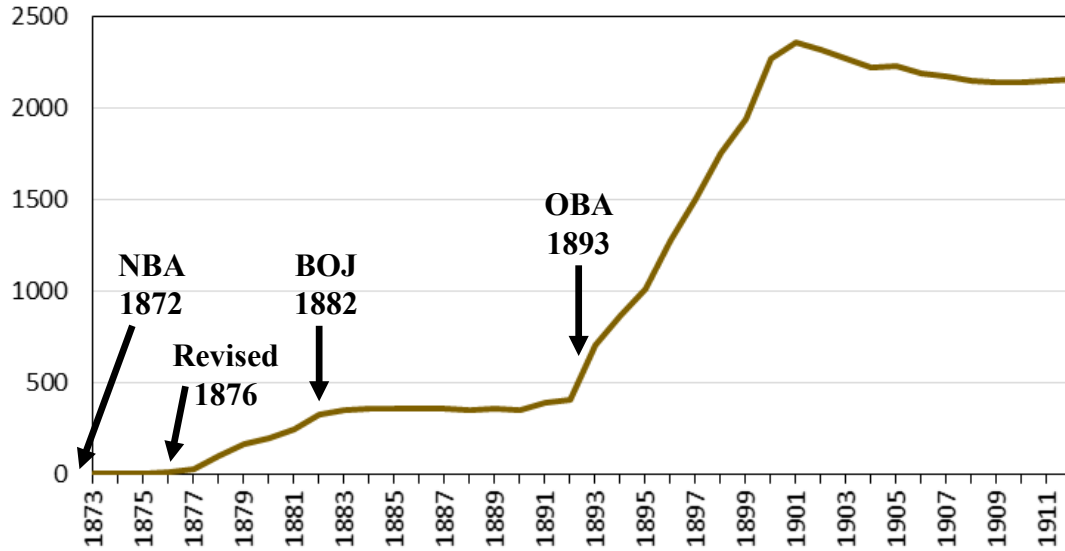


Legal capital (million yen)



Source: Yoshio Ando ed, *Databook on Modern Japanese Economic History*, 2nd ed, Tokyo Univ. Press, 1979.

Number of banks



# Meiji Banking History

## National Bank Act, 1872

Gold backing required to issue private paper money – only four banks established

## Revision of NBA, 1876

Gold reserve no longer required – up to 153 banks established

## Bank of Japan, 1882

A central bank was created

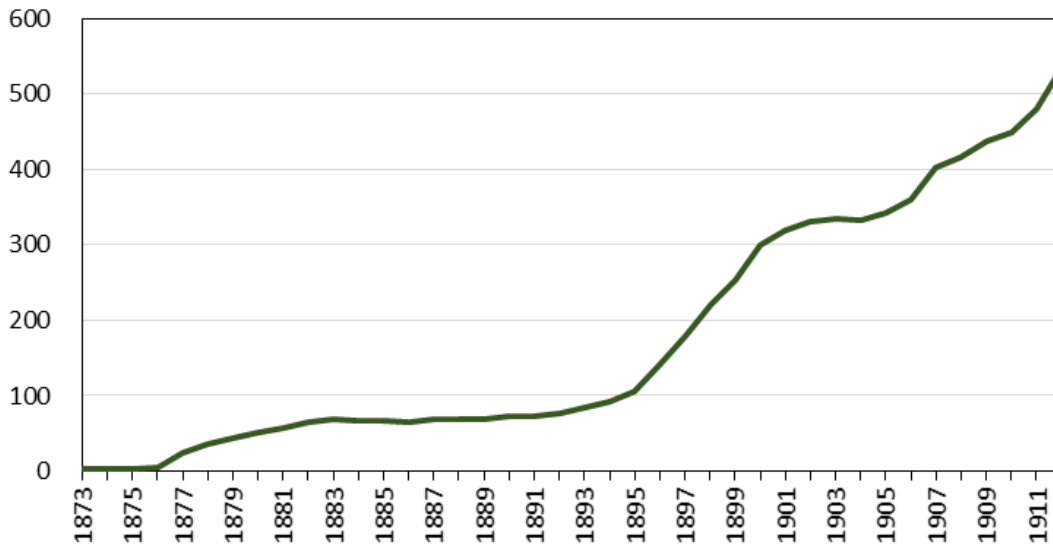
## Ordinary Bank Act, 1893

National banks were replaced by ordinary banks leading to bank establishment boom; besides these, “savings banks” accepting small deposits were hardly regulated

## Bank runs & bankruptcies

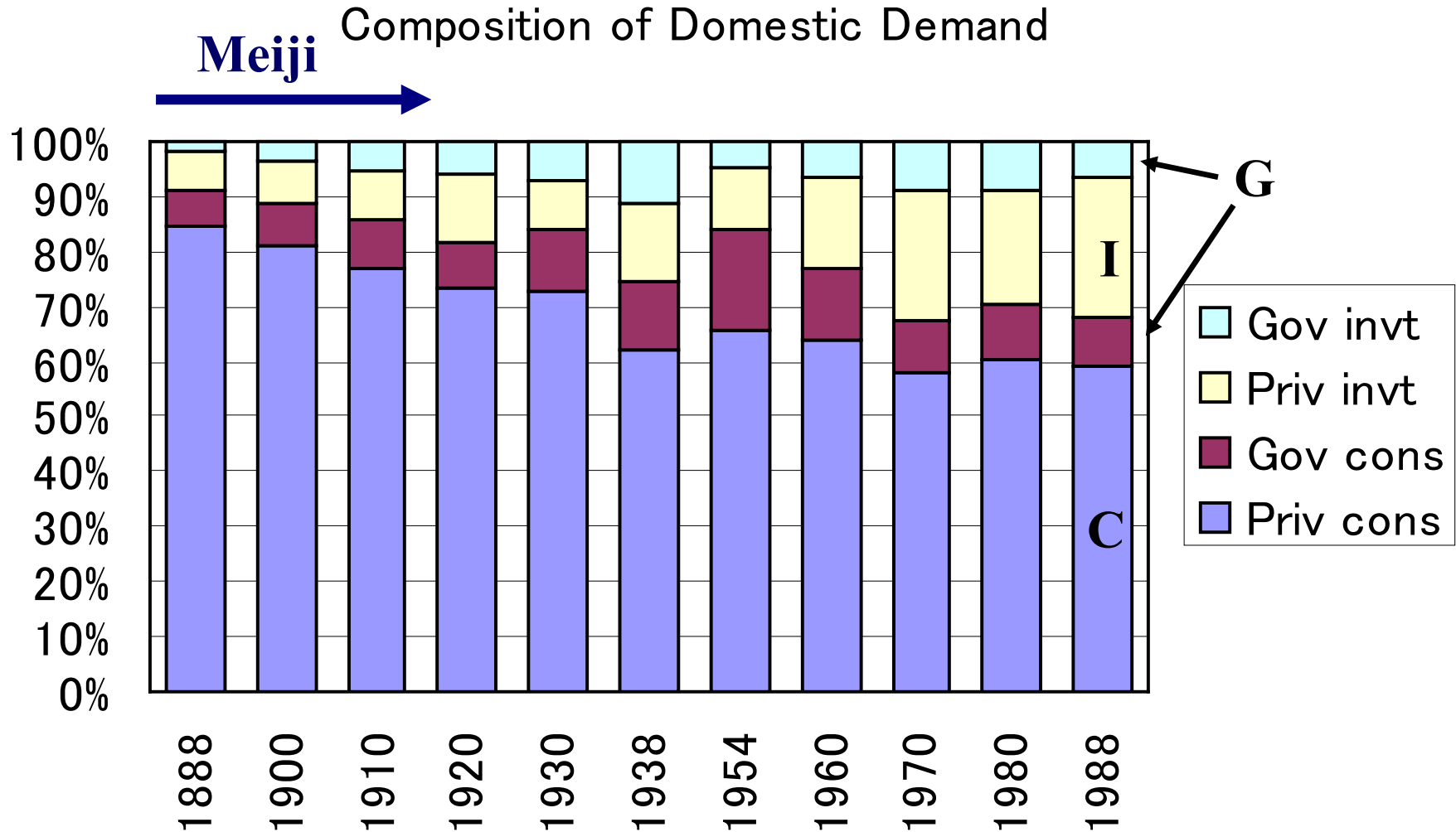
From around 1900, many banks faced difficulties and exited

Million yen Paid-up capital



Source: Japan Statistical Association, *Historical Statistics of Japan*, vol.3, p.166.

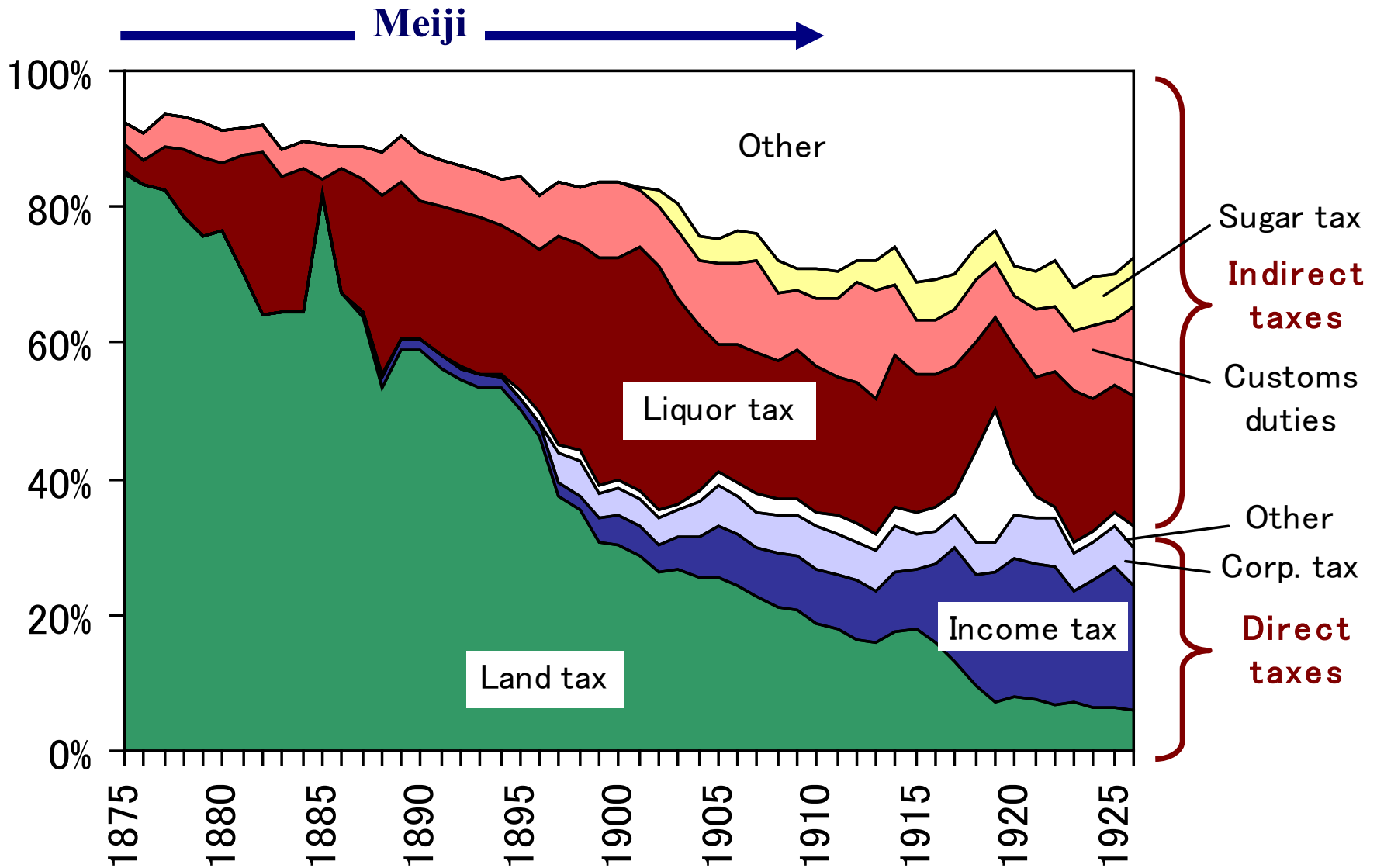
# Government was relatively small



Source: Ryoshin Minami, *The Economic Development of Japan*, 1986.



# Tax Revenue Structure



Source: Management and Coordination Agency, *Historical Statistics of Japan*, vol.3, Japan Statistical Association, 1988, pp.268-269.

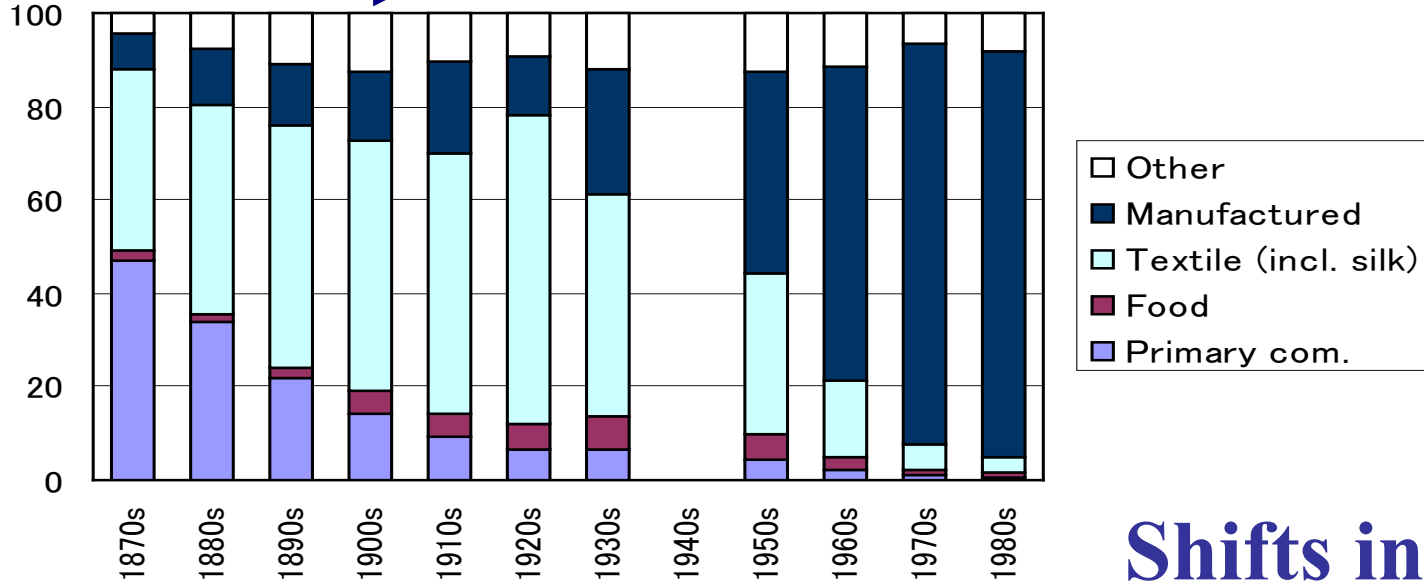
# Macroeconomy of Late Meiji (1890s-1900s)

## Trade, Budget & Finance, Saving Mobilization

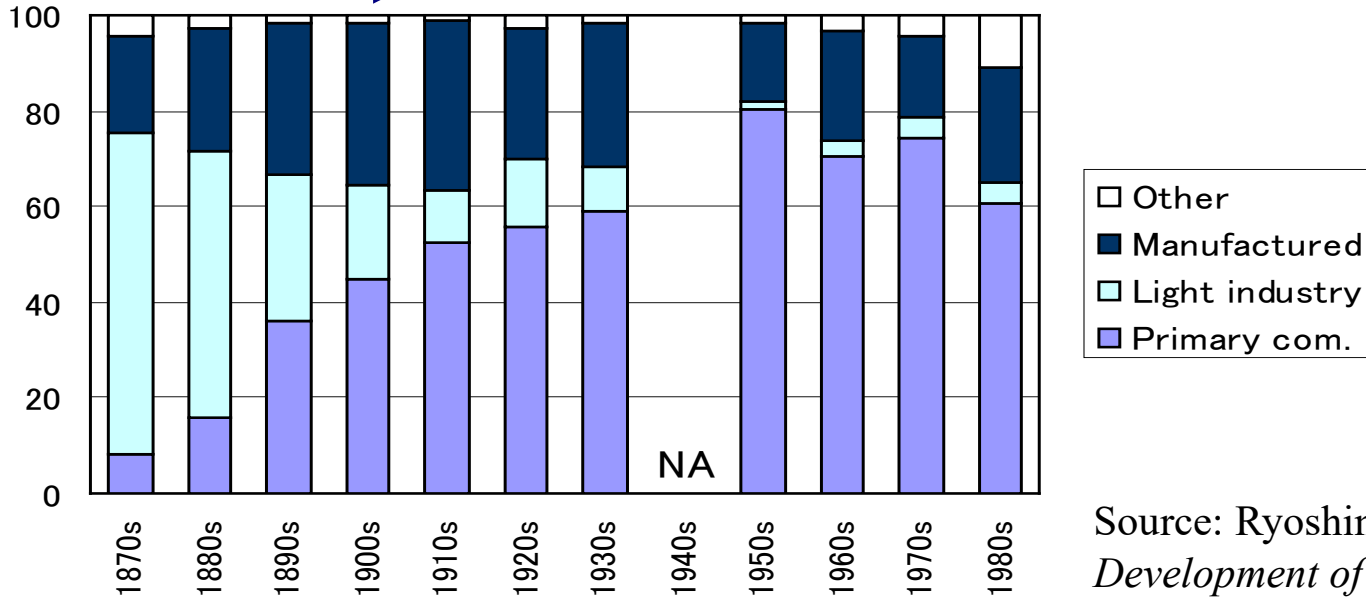
- ❑ Aggressive public spending continued for militarization and industrialization, causing budget deficit and gold reserve loss.
- ❑ Cotton textile industry succeeded in import substitution. Trade exhibited dual structure—exporting light industry products to Asia and importing machinery from the West.
- ❑ Yen initially floated down, but was fixed at \$1=2 yen after joining the international gold standard in 1897.
- ❑ Banks and stock exchanges were set up, but the main source of saving remained self-finance and joint stock companies within the private business sector.
- ❑ Japan relied relatively little on FDI. But foreign bonds were issued by central and local governments to execute the Japan-Russia War, local public investments and budget refinancing.

# Meiji

## Exports by Commodity (%)



## Imports by Commodity (%)



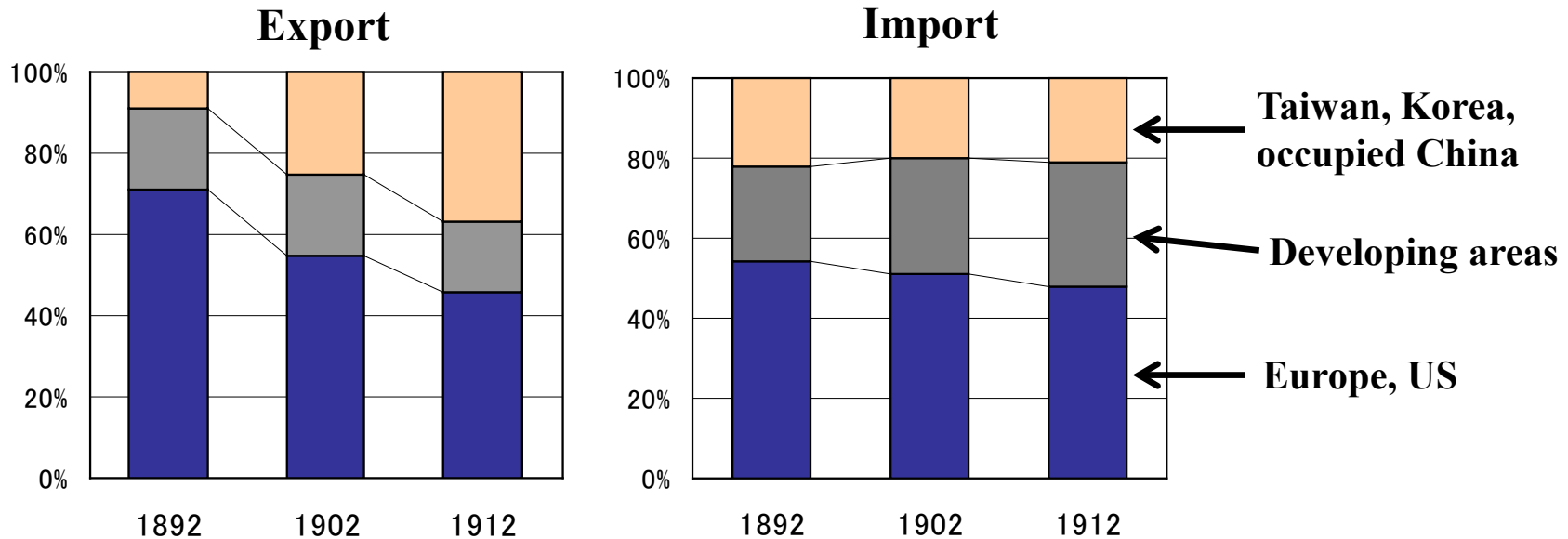
# Shifts in Trade Structure

Source: Ryoshin Minami, *The Economic Development of Japan*, 1986.

# Trade Structure in Meiji (incl. colonies)

- ❑ Exports to West—silk to US (60-70%) dominated
- ❑ Imports from West—machinery, steel, US raw cotton
- ❑ Exports to other areas—cotton products, light industry goods (matches, umbrellas, clocks, glass products, lamps, knitted goods)
- ❑ Imports from other areas—foodstuff, Indian raw cotton

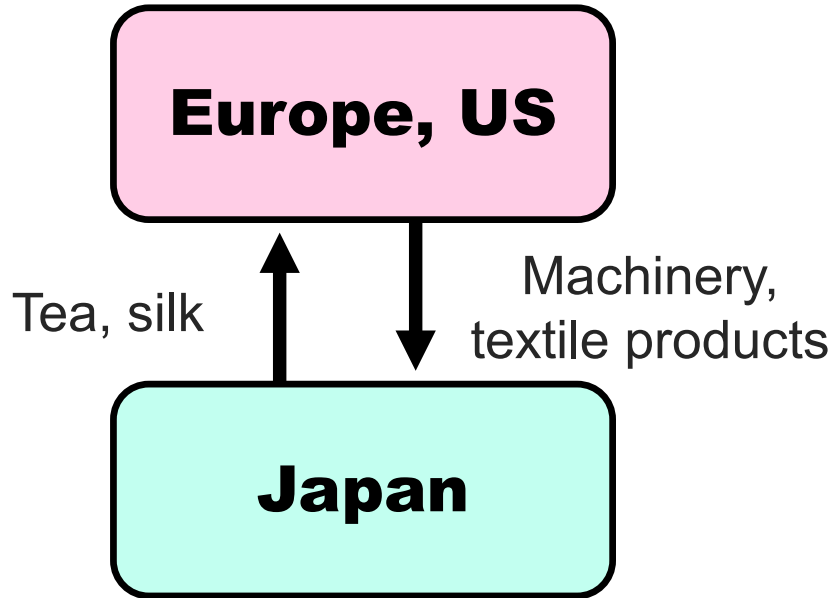
Trade content with developing areas & with colonies were similar



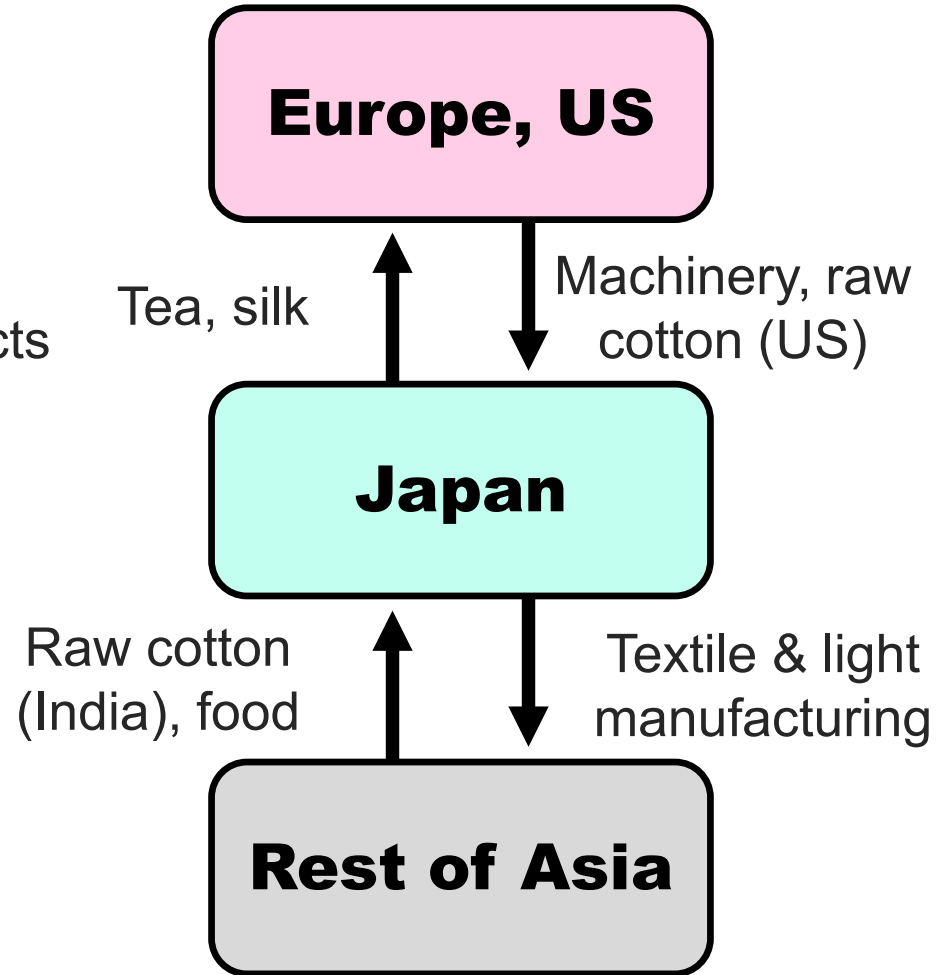
Source: Y.Yamamoto & K.Oku, "Trade," Japanese Economic History vol.5, 1990.

# Japan's Trade Pattern

## Early Meiji

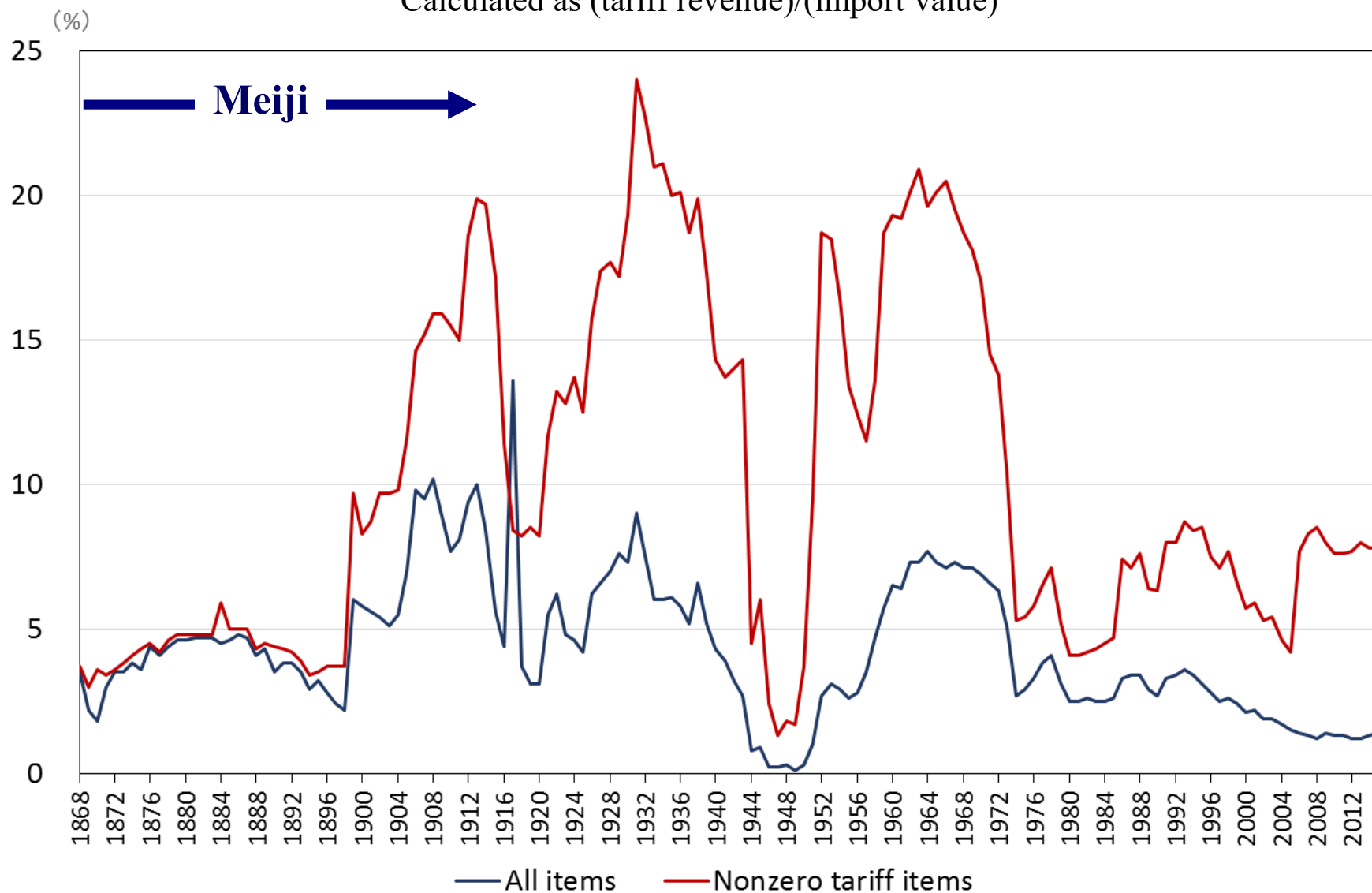


## Late Meiji



# Average Tariff Rate

Calculated as (tariff revenue)/(import value)



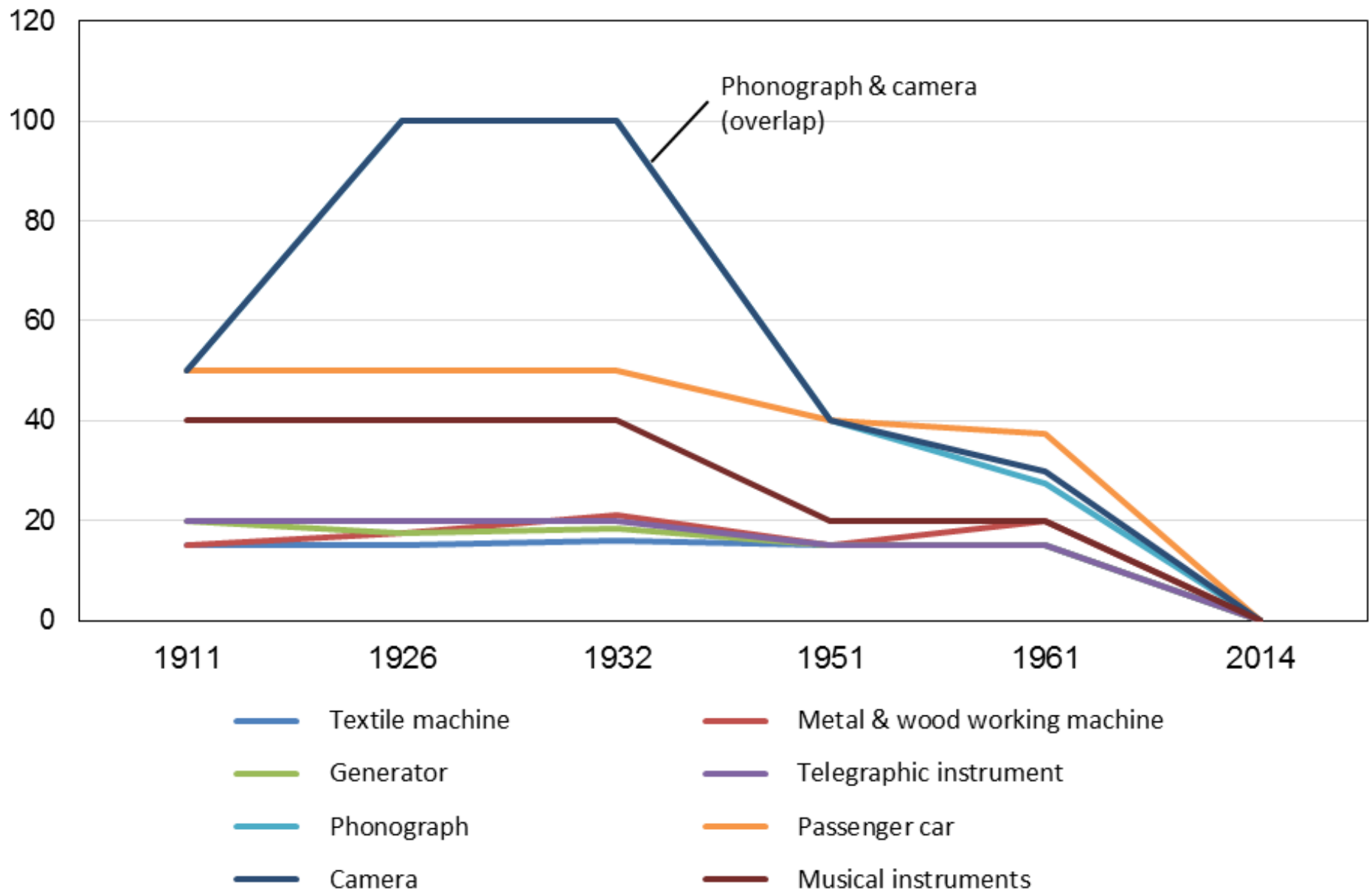
Source: Ministry of Finance Policy Research Institute, *Ministry of Finance Statistics Monthly*, vols. 178 (Aug.1966), 293 (Apr.1976), 413 (Sep.1986), 437 (Sep.1988), 630 (Oct.2004) and 772 (Aug.2016). If data do not exactly match between volumes, data in later volume are used.

# Transition of Tariff Rates of Selected Products

Product	Tariff rate (%)					
	1911	1926	1932	1951	1961	2014
<b>Raw materials</b>						
Coal	0	0	0	0	0	0
Wool	0	0-5	0-21	0	0	0
Cotton	0	0	0	0	0	0
<b>Light manufactures</b>						
Woolen products	25	15-20	8-16	20	20	5.3-7.9
Cotton products	20	5	7-27	10	10-15	2.9-5.6
Artificial fiber products	40	100	100	15,25	15,25	4-10
Leather footwear	40	100	100	30	27-30	17.3-30
Soap	50	100	100	30	27-30	0
<b>Industrial inputs</b>						
Artificial fiber	30	27	75	15,25	15,25	4-6.6
Pig iron	5	4	20	10	10	0
Steel	7.5	15	15	12.5	12.5	0-3.9
<b>Machinery</b>						
Textile machine	15	15	16	15	15	0
Metal & wood working machine	15	15-20	21	15	15-25	0
Generator	20	15-20	8-29	15	15	0
Telegraphic instrument	20	20	20	15	15	0
Phonograph	50	100	100	40	25-30	0
Passenger car	50	50	50	40	35-40	0
Camera	50	100	100	40	30	0
Musical instruments	40	40	40	20	20	0

Source: Same as the previous page.

## Tariff Rates of Selected Industrial Products

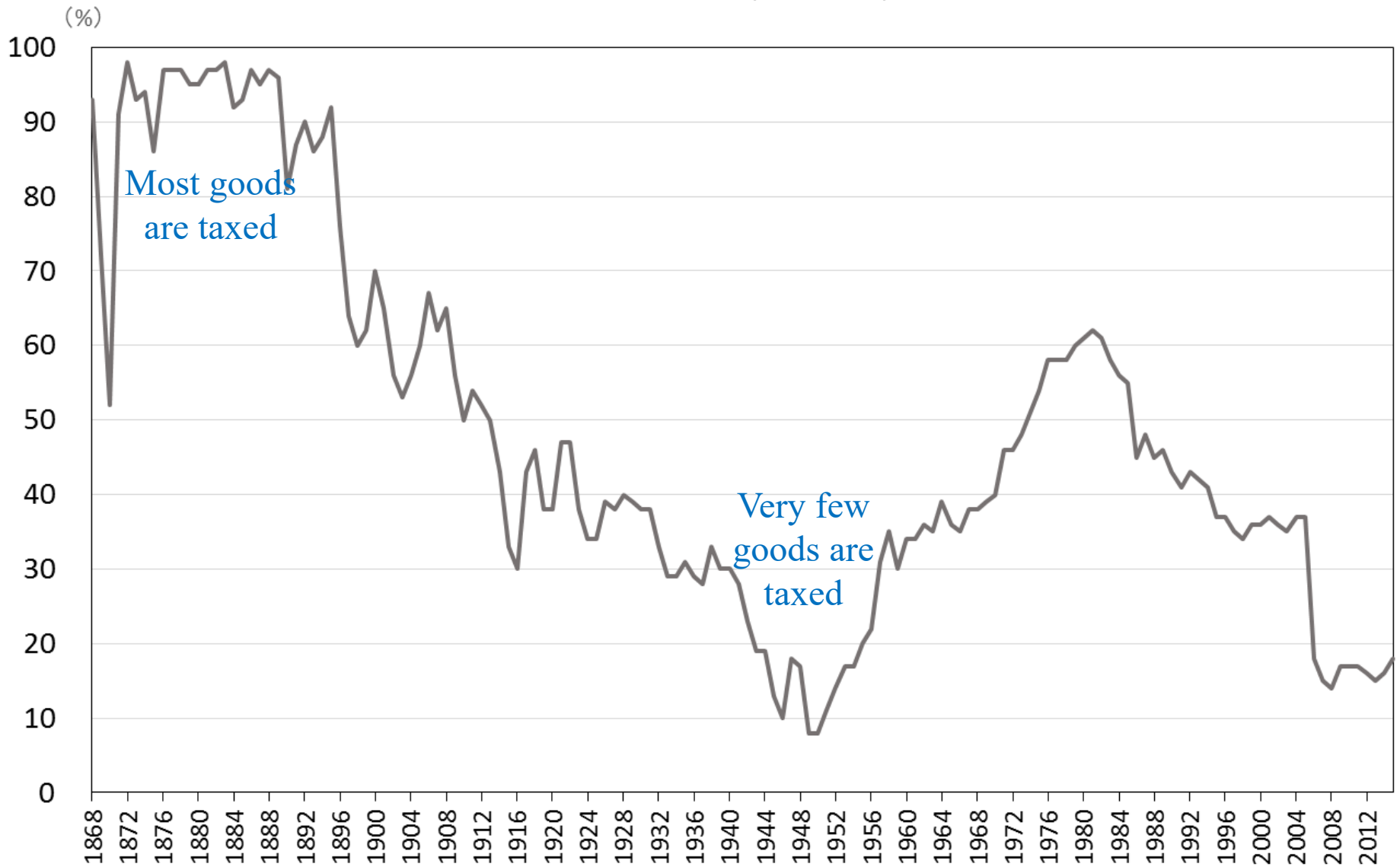


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# The Ratio of Nonzero Tariff Imports to Total Imports

(有税品比率 = 有税品輸入額 / 輸入総額)



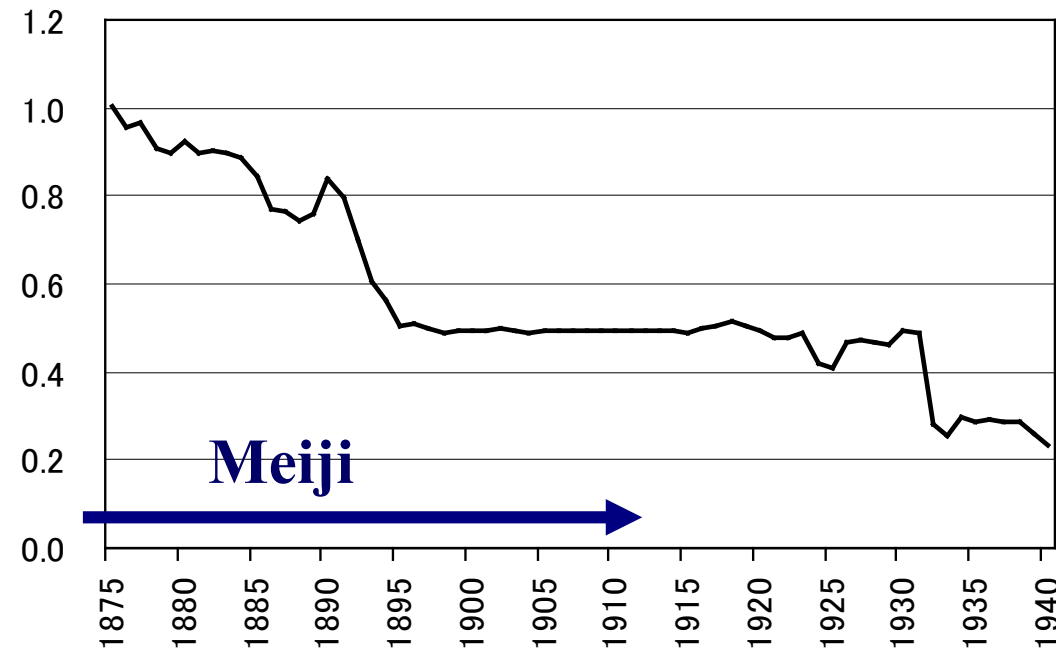
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# Exchange Rate Regime

**Silver standard (float):** until 1897 -- Depreciation against Western currencies; East Asia (Shanghai forex market) used silver

**Gold standard (fix):** 1897-1917 and 1930-31 -- Adopting global standard with reparation gold from China (by the initiative of Finance Minister Matsukata)

Exchange Rate (Dollar/Yen)



## Merits of gold standard

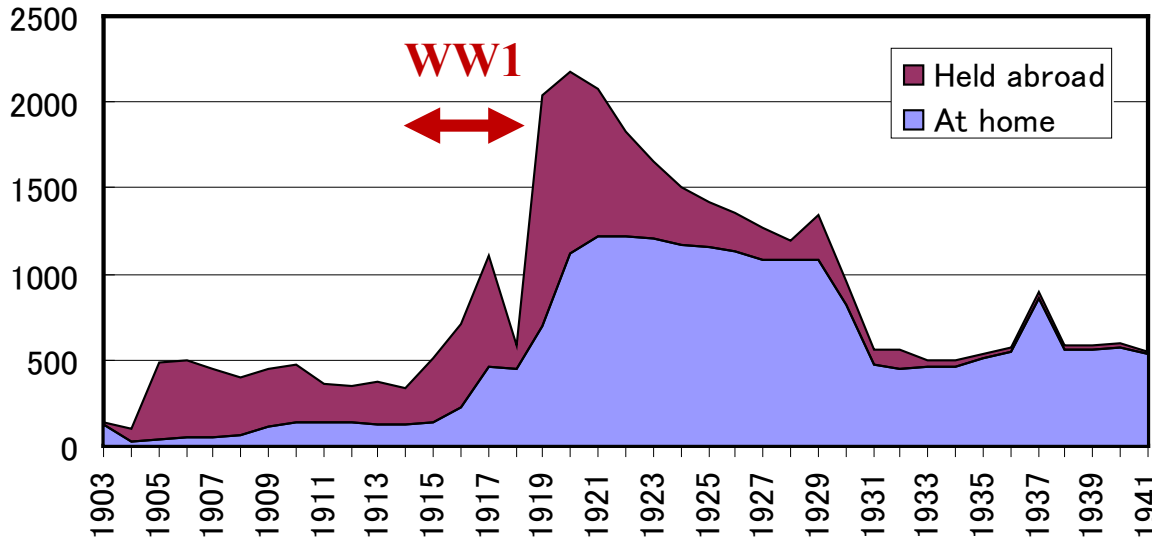
- Pride of joining the first-class country club
- No exchange risk
- Ease in issuing foreign bonds

## Demerit?

- No more depreciation

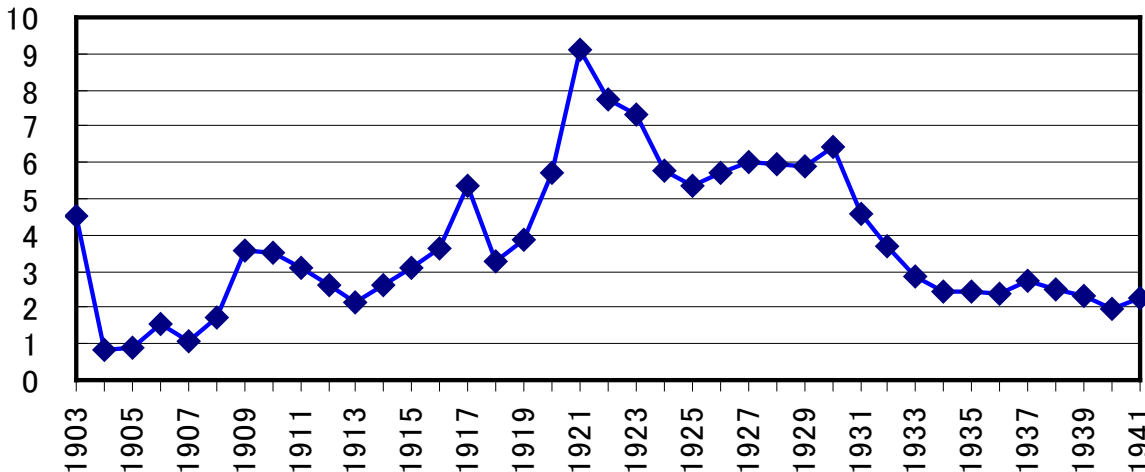
# Gold Reserves in Yen and Months-of-Import

Gold Reserves  
(In millions of yen)



→ **Meiji**   
 → **Taisho**   
 → **Showa**

Reserves in Import Months



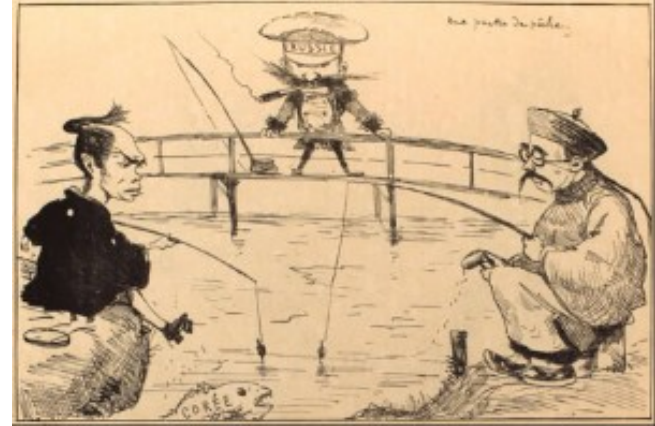
- Gold reserves began to be held abroad in the early 20th century. It gradually fell toward the end of Meiji (1912).

- Active foreign bond issues by central and local governments can be regarded as a way to avoid fiscal belt-tightening.

- Gold reserves shot up during and after WW1, but declined subsequently.

- Japan eventually solved the balance-of-payments crisis not by tight budget but through WW1 export boom.

# Japan-China War (1894-95) & Reparation



- ❑ Japan fought and won a war against Qing Dynasty of China over the control of Korea (1894-95).
- ❑ After the war, Japan received from China:
  - Taiwan and the Penghu Islands
  - Liaodong Peninsula (immediately forced to return to China under the pressure of Russia, Germany, France)
  - Reparation of 365 million yen (4 times the annual budget)
- ❑ China borrowed from other countries and paid reparation in sterling-denominated checks in London
- ❑ Japan held this amount in London as gold reserves
- ❑ This balance was used to issue convertible paper money in Japan (establishment of the gold exchange standard, 1897).

# Special Account for Japan–China War Reparation

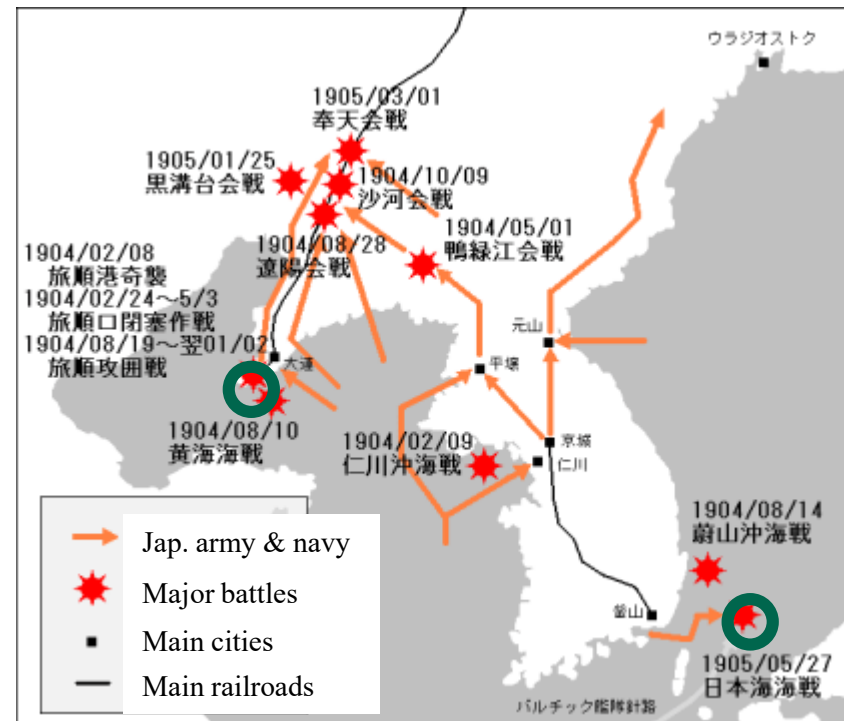
(Balance at end 1902)

	Million yen	Percent	
<b>Revenue</b>			
Reparation from China	311.07	85.3%	
Compensation for return of LP	44.91	12.3%	
Interest etc.	8.53	2.3%	
TOTAL	364.51	100.0%	
<b>Expenditure</b>			
Japan–China War expenditure (past)	78.96	21.7%	} For military <b>83.7%</b>
Army buildup	56.80	15.6%	
Navy buildup	139.26	38.2%	
Yahata Steel Mill (see note)	0.58	0.2%	
Budget finance for 1897 (infra.)	3.21	0.9%	
Additional money for navy	30.00	8.2%	
Budget finance for 1898 (Taiwan)	12.00	3.3%	
Imperial family expense	20.00	5.5%	
Education	10.00	2.7%	
Natural disaster fund	10.00	2.7%	
Remaining balance	3.70	1.0%	
TOTAL	364.51	100.0%	

Note: total budget for Yahata Steel Mill was 6.5 million yen, of which reparation covered 9%.

# Japan-Russia War (1904-1905)

- Cause: influence over Korea and Manchuria (Northeast China). Russia gained territorial and economic concessions and kept large troops in Manchuria. Japan signed Japan-UK Alliance to deter Russia.
- When the war started, few thought Japan would win.
- To cover the war cost, Japan issued government bonds in London and New York. At first there were no takers, but finally the deal was done.
- Battles were fought on land and at sea. The fall of Russia's **Lushun Fortress** and the defeat of Russia's **Baltic Fleet** were decisive.
- Many were surprised that a non-Western latecomer beat Whites.
- Russia paid no war reparation. The Japanese government accepted this because it needed to end the war quickly to avoid fiscal crisis. But Japanese people were angry.

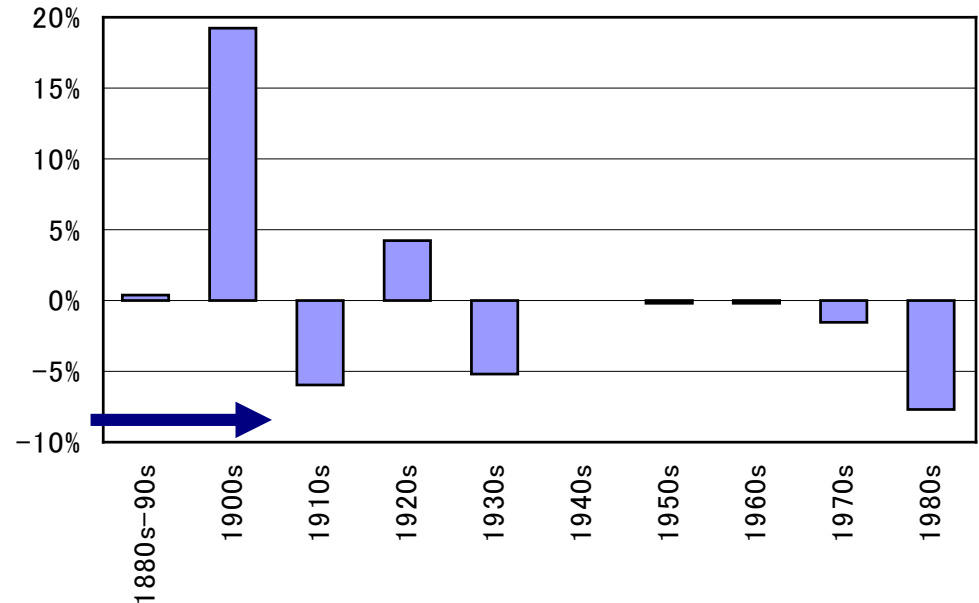


## Estimated Saving Ratios



## How Was Meiji Investment Financed?

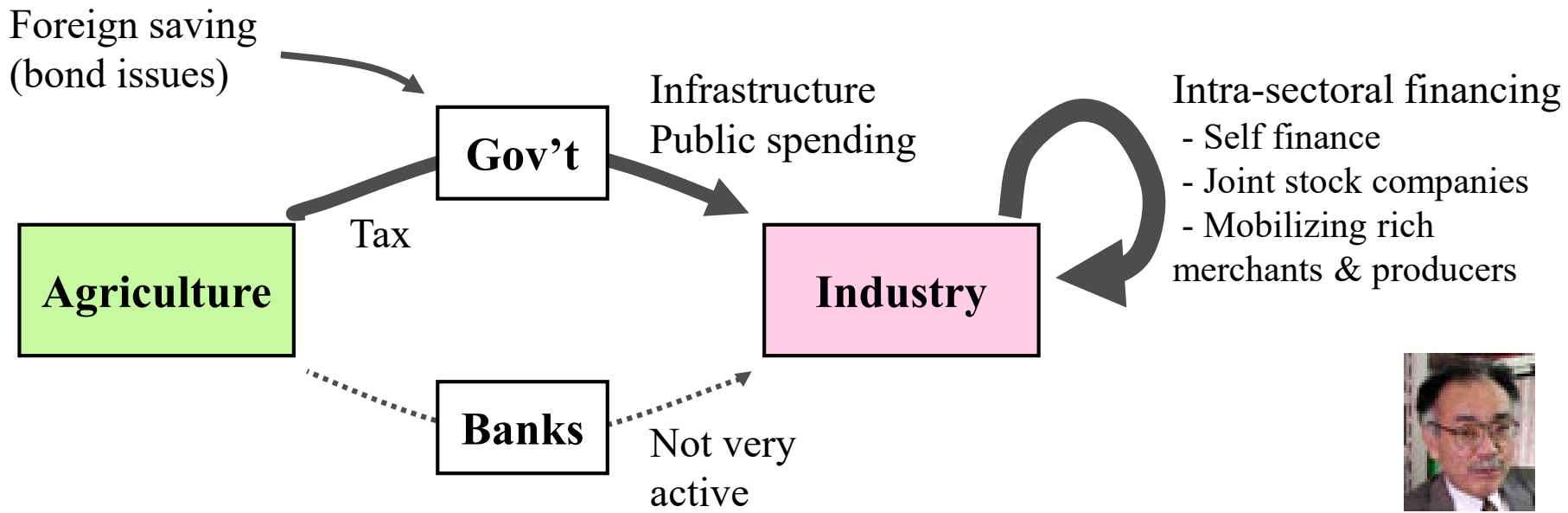
### Dependence on Foreign Saving $= (\text{Imports} - \text{Exports}) / \text{Gross Investment}$



Meiji



Source: Ryoshin Minami, *The Economic Development of Japan*, 1986.



Prof. Teranishi

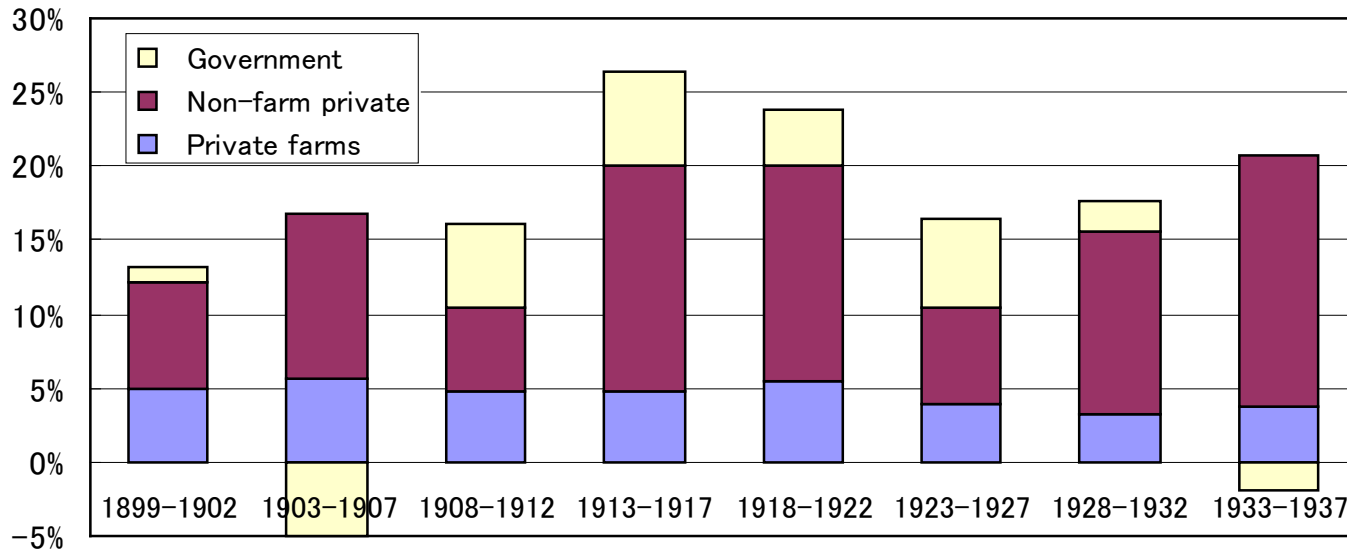
Savings and Investment Balance by Sector (In millions of yen)

	1899-1902	1903-1907	1908-1912	1913-1917	1918-1922	1923-1927	1928-1932	1933-1937
<b>Private farms</b>	<b>1</b>	<b>13</b>	<b>4</b>	<b>43</b>	<b>207</b>	<b>23</b>	<b>-12</b>	<b>222</b>
Savings	121	159	175	240	657	523	402	580
Investment	120	146	171	197	450	500	414	358
<b>Non-farm private sector</b>	<b>62</b>	<b>123</b>	<b>-87</b>	<b>175</b>	<b>81</b>	<b>-290</b>	<b>631</b>	<b>931</b>
Savings	180	310	212	752	1724	858	1498	2637
Investment	118	187	299	577	1643	1148	867	1706
<b>Government</b>	<b>-59</b>	<b>-233</b>	<b>15</b>	<b>120</b>	<b>-146</b>	<b>-112</b>	<b>-626</b>	<b>-1162</b>
Savings	24	-142	205	317	441	801	251	-298
Investment	83	91	190	197	587	913	877	864
<b>External sector</b>	<b>5</b>	<b>-97</b>	<b>-68</b>	<b>338</b>	<b>143</b>	<b>-380</b>	<b>-6</b>	<b>-10</b>
Memorandum item: <b>Agricultural taxes</b> (% of non-farm gross invt)	<b>104</b> 42.0%	<b>115</b> 38.4%	<b>154</b> 28.0%	<b>166</b> 24.2%	<b>290</b> 19.4%	<b>291</b> 13.8%	<b>188</b> 9.0%	<b>145</b> 11.3%

Note: Prof. Juro Teranishi's estimates. Farms' S-I balance shows transfer of surpluses to the non-farm sector through the financial system while agricultural taxes are transfer of surpluses through government budget.

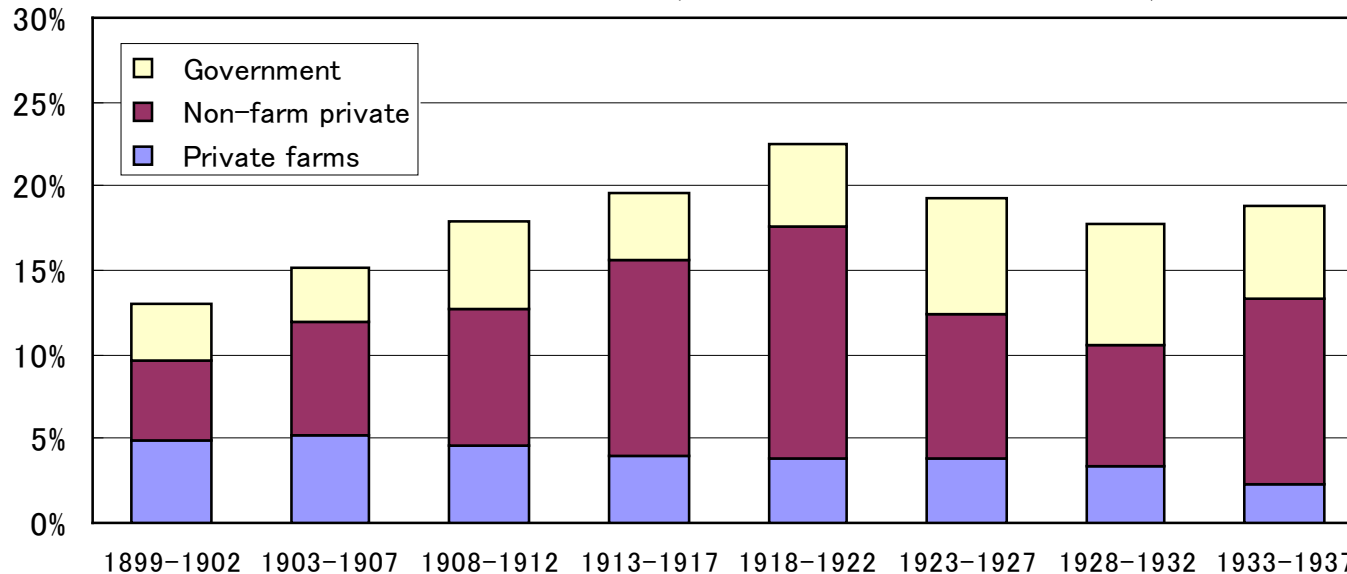


## Gross Savings (% of estimated GDP)



Prof. Teranishi's savings & investment estimates expressed in percent of GDP

## Gross Investment (% of estimated GDP)



Note: GDP estimate by Prof. Yamada, from Management and Coordination Agency, *Historical Statistics of Japan*, vol.3, Japan Statistical Association, 1988, pp.344-345.

# FDI into Meiji Japan

Simon Bytheway, *Japanese Economy and Foreign Capital, 1858-1939*

(2005, in Japanese, originally a PhD dissertation at Tohoku Gakuin University)

- ❑ After 1858, foreign trading firms came to Japan, but their activities were confined to foreign settlement areas.
- ❑ Japan prohibited FDI until 1899 (revision of commercial law). Even after that, policy and popular opinion remained hostile to FDI.
- ❑ During Meiji period, foreign debt issue (borrowing) was much larger than FDI  
Share in foreign saving mobilization—central government bonds 82.5%, municipal bonds 7.8%, corporate bonds 9.0%, FDI 0.7%
- ❑ However, FDI played an important role in some industries (see below), esp. technology transfer through patents (according to Bytheway).  
Example: the filament of light bulbs was changed from bamboo to tungsten.

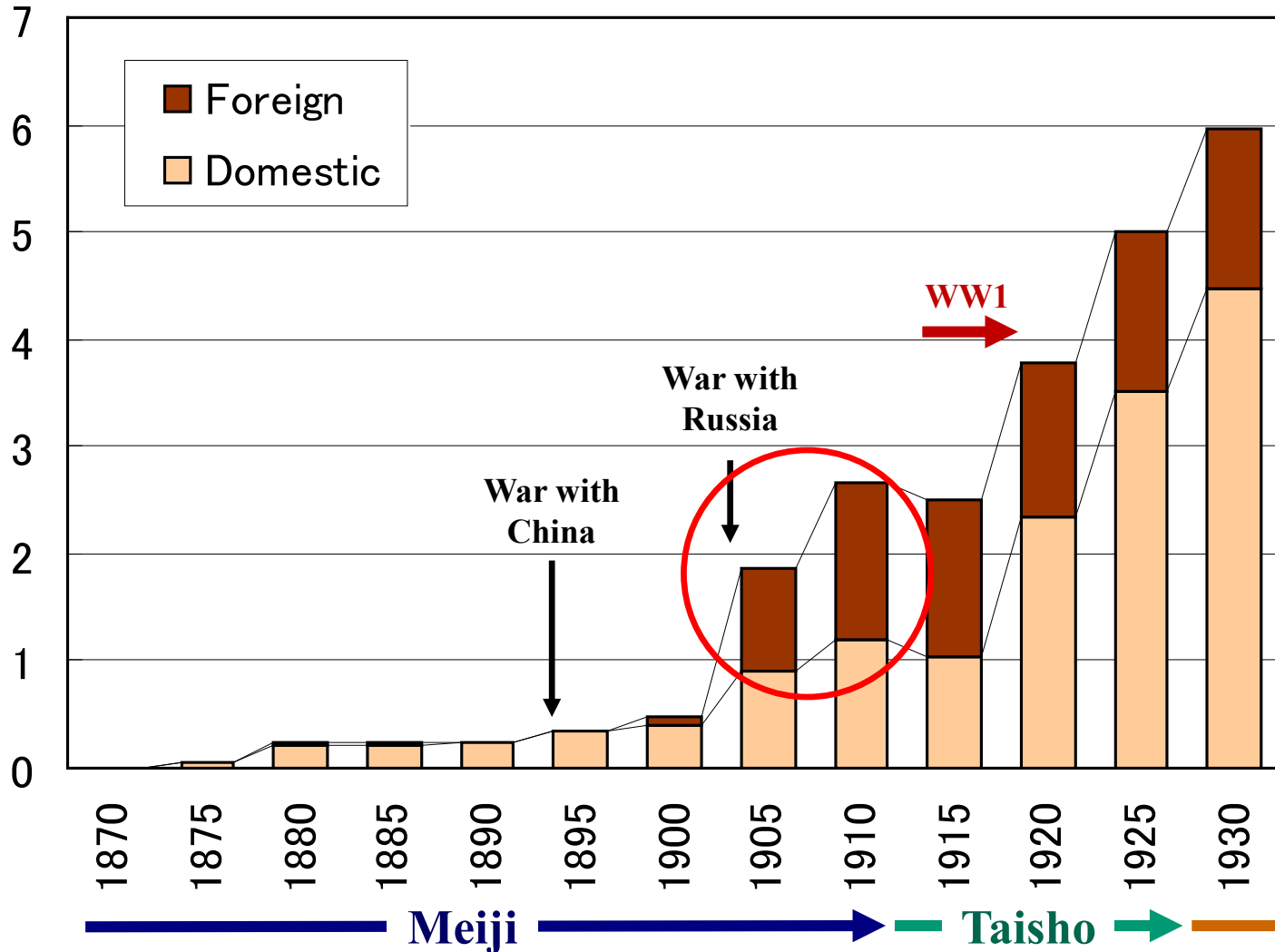
# Foreign Bond Issue of Meiji Government

	Year	Location	Interest rate	Maturity (years)	Amount (mil yen)	Purpose
1	1870	London	9.0%	13	4.88	Railroad construction
2	1873	London	7.0%	25	11.71	Redemption of samurai salaries
3	1897	London	5.0%	55	43.00	War
4	1899	London	4.0%	55	97.63	RR, steel mill, telecom, war
5	1902	London	5.0%	55	50.00	RR, steel mill, telecom, war
6	1904	LN & NY	6.0%	7	97.63	War
7	1904	LN & NY	6.0%	7	117.16	War
8	1905	LN & NY	4.5%	20	292.89	War
9	1905	LN, NY, Berlin	4.5%	20	292.89	War, refinancing of domestic bonds
10	1905	LN, NY, Berlin, Paris	4.0%	25	244.08	Redemption of fiscal bonds
11	1907	LN, Paris	5.0%	40	224.55	Redemption of 6 & 7
12	1910	Paris	4.0%	60	174.15	Redemption of domestic bonds
13	1910	London	4.0%	60	107.39	Redemption of domestic bonds

- Foreign bond issue was made easier by adoption of the gold standard. Other reasons were economic and legal maturity of Japan, and victories over China and Russia.
- Borrowing in later period was mainly for war and deficit refinancing.

# Central Government Bonds Outstanding

Billion yen

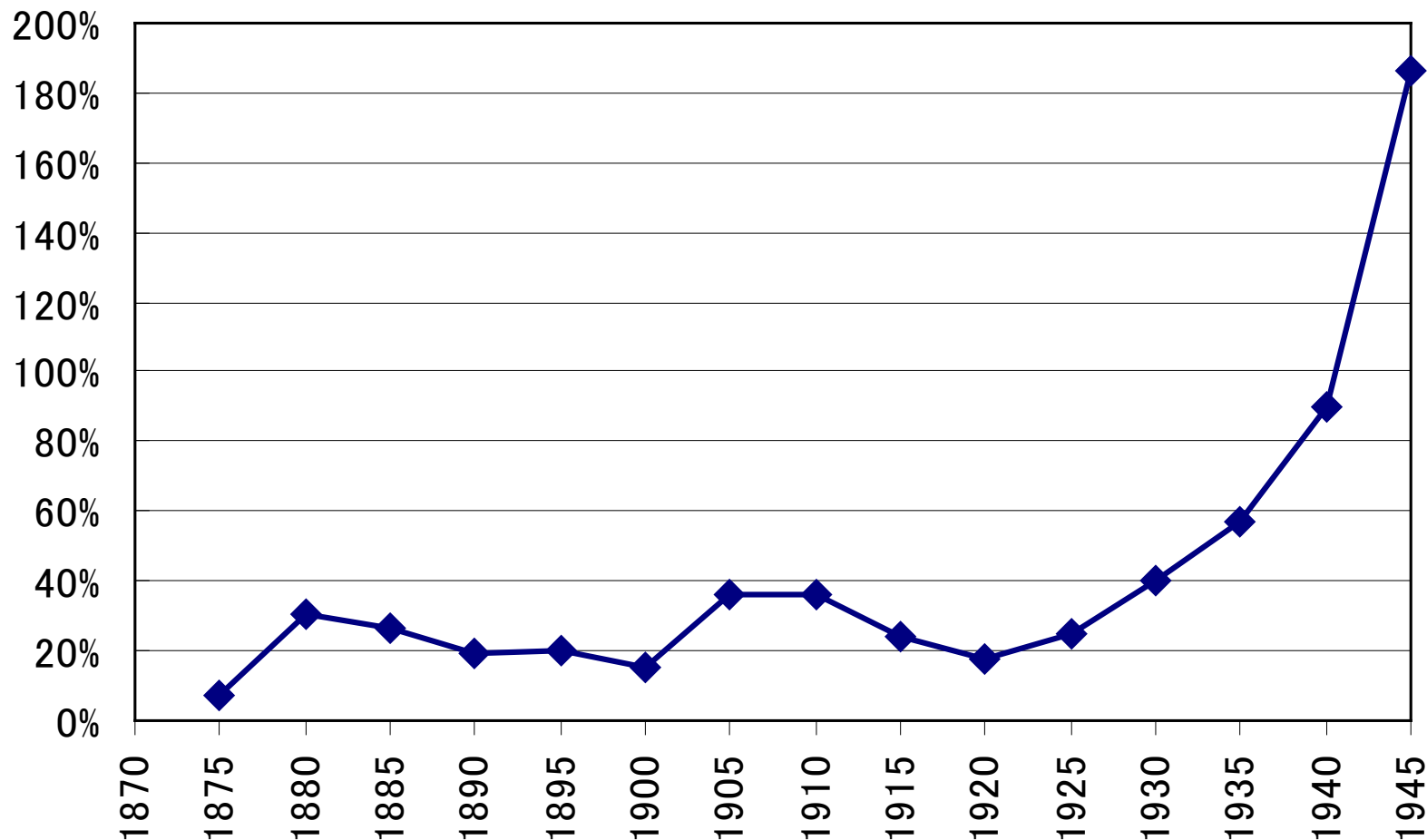


Source: Management and Coordination Agency, *Historical Statistics of Japan*, vol.3, Japan Statistical Association, 1988, pp.278-279.

# Central Government Bonds Outstanding

(Including Domestic & Foreign Bonds)

(% of Estimated GDP)



Note: GDP estimate by Prof. Yamada, from Management and Coordination Agency, *Historical Statistics of Japan*, vol.3, Japan Statistical Association, 1988, pp.344-345.

# Foreign Bond Issues of Municipalities

Six cities borrowed abroad for building local infrastructure

	Year	Issuing city	Interest rate	Maturity (years)	Amount (mil yen)	Purpose
1	1899	Kobe	6.0%	36	0.25	Water works
2	1902	Yokohama	6.0%	23	0.90	Water works
3	1903	Osaka	6.0%	78	3.09	Port facility
4	1906	Tokyo	5.0%	30	14.58	Port facility and roads
5	1907	Yokohama	6.0%	28	3.11	Port facility
6	1909	Yokohama	6.0%	8	0.65	Gas factory
7	1909	Osaka	5.0%	29	30.22	Street trams, water works
8	1909	Nagoya	5.0%	33	7.82	Water works
9	1909	Kyoto	5.0%	29	17.55	Power supply, water works
10	1909	Yokohama	5.0%	44	7.00	Water works
11	1912	Kyoto	5.0%	20	1.95	Power supply, water works
12	1912	Tokyo	5.0%	40	89.56	Street trams

In addition, many public/utility companies issued corporate bonds such as railroad companies, banks, textile companies, power companies, etc.

# Major FDI Firms in Meiji Period

	Year	Japanese name	Foreign partner	Foreign ownshp	Remark
1	1893	Standard Oil	Standard Oil (US)	100%	Later sold to Nippon Oil
2	1899	Nippon Electric (NEC)	Western Electric (US)	54%	Later under Sumitomo
3	1900	Murai Brothers	American Tobacco (US)	50%	State-owned in 1904
4	1900	Rising Sun	S. Samuel & Co. (UK)	100%	Oil business
5	1901	Singer Mishin	Singer Sewing Machine (US)	100%	
6	1902	Osaka Gas	Mr A.N. Brady (US)	50%	Brady capital exits 1925
7	1903	Tokyo Electrical Train	Mr Malcolm (UK)	--	
8	1905	Tokyo Electric	General Electric (US)	38%	Later Toshiba, 1939
9	1906	Osaka Glass Manufacturing	Private syndicate (UK, Bel, Fr)	56%	
10	1907	Nippon Steel	Armstrong & Vickers (UK)	50%	Weapon manufacturing
11	1907	Imperial Spinning	J&P Coats (UK)	60%	
12	1909	Dunlop Rubber	Far East Dunlop (UK)	100%	Later, 100% Japanese
13	1910	Shibaura Manufacturing	General Electric (US)	24%	Later Toshiba, 1939
14	1910	Nippon Okijenu & Asechiresu	L'air Liquide (FR)	100%	
15	1910	Lever Brothers Amagasaki	Lever & Brothers (UK)	100%	
16	1910	Nippon Chikuonki Trading	Mr. F.W. Hohn (US)	--	Phonograph

FDI was relatively small (cf. China, India). However, it played a leading role in tobacco, oil refining, electrical and general machinery, weapons, automobiles, glass, (aluminum). Later, zaibatsu mostly took over FDI technology and production.

# Key Ideas for This Lecture

- ❑ Meiji Japan eventually stabilized macroeconomy and established a new monetary and financial order. When inflation ended, strong private investments began to mechanize factories and introduce new technology.
- ❑ Japanese industrial revolution (in textile, the leading global industry at that time) progressed rapidly, and manufactured export rose. Japan began to export light industry goods to Asia while continuing to import machinery from the West.
- ❑ Debate between fiscal activism and the call for small budget was finally won by the former, but this naturally led to fiscal and balance-of-payments problems.
- ❑ Central government issued foreign bonds for wars while municipalities for infrastructure building. FDI was modest but it was one way to facilitate technology transfer.