

## Prewar International and Corporate Finance

- Trade Deficits and Surpluses
  - History
  - Causes
- Introduction to Zaibatsu
  - Definition

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## The implications of Openness: Specialization and Trade

- Tremendous rise in trade in prewar Japan
  - Between 1900 and 1920 around 20% of Japanese growth came from export growth
  - between 1920 and 1940 around 40%

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## Growth of Trade

	1890	1910	1938
X/GNP %	7	15	21
M/GNP%	8	17	22
Trade Def	1	2	1

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## Composition of Japanese Trade

Exports %	1870's	1890's	1900's	1920's	1930's	1960's
Primary prods	82	55	45	37	20	2
Silk	38	29	26	28	13	0
Textiles	12	37	42	49	54	27
Heavy Man.	6	8	13	14	27	71

### Imports %

	70's	90's	1900's	1920's	30's	60's
Foodstuffs	1	10	13	16	18	13
raw materials	8	27	33	38	41	57
Light Manu	70	31	21	15	12	7
Heavy Manu	21	33	32	31	30	23

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## Japanese Trade Deficits

- In early years Japan was on silver standard
  - Japanese yen depreciated by a factor of 2 between mid 80's and 1897 when it went on gold
  - This propped up exports
  - Even so, Japan ran trade surpluses in only 4 years between 1870 and 1900
- Thereafter Japan ran big trade deficits
  - Enormous inflows of foreign capital 1904-1913, equal to ½ of private capital formation
  - Foreign debt grew from 195 million yen in 1903 to 1970 million in 1913
  - 46% of national income
- What caused this?

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## International Finance: *Déjà vu* all over again

Our old friend the Budget Constraint:

$$P_m X_m + P_r X_r = I = P_m C_m + P_r C_r$$

Is replaced with our new friend the *intertemporal* budget constraint

$$PX_1 + \frac{P}{(1+r)} X_2 = I = PC_1 + \frac{P}{(1+r)} C_2$$

$$X_2 = -(1+r)X_r + I/P \Leftrightarrow C_2 = -(1+r)C_r + I/P$$

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### But there's more!

- What happens if  $X_1 - C_1 < 0$  ?

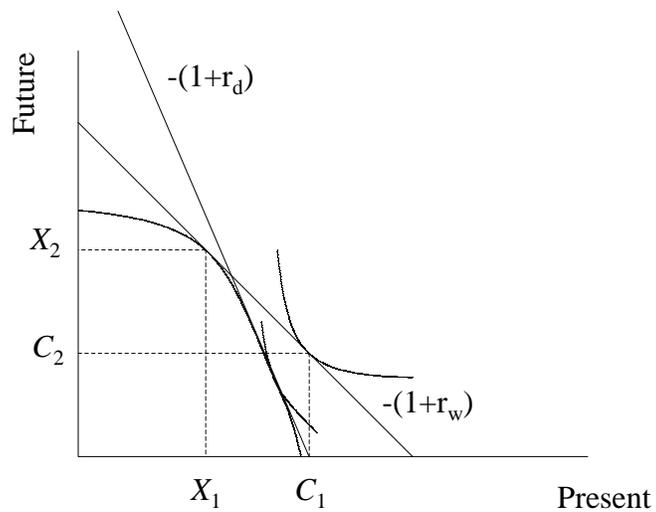
- One more budget constraint
  - The Balance of Payments Condition

$$BP = \Delta IR = 0 = TD + K$$

- Any excess in consumption over income must be offset by a sale of assets

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### The Gains from Open Capital Markets



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## International Indebtedness

	External Debt to GNP (1996)
Thailand	56
Philippines	51
Malaysia	52
Indonesia	64
Mexico	44
India	22
China	17

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## A Change of Pace: Zaibatsu

- Zaibatsu literally means “financial group”
- No other country except Korea has a similar business structure
  - Koreans have Chaebol
    - Hyundai, Samsung, Lotte
  - Korean zaibatsu were to some degree modelled on Japanese ones
  - Korean gov't regulates equity markets too

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## Prewar Corporate Groups

- Four main zaibatsu: Mitsui, Sumitomo, Mitsubishi and Yasuda
  - Twenty in total, Mitsui was largest
  - Also had First (Shibusawa, Furukawa, Kawasaki) Sanwa and Kawasaki
  - During 30's, military expenditures helped build up Nakajima and Nissan
  - Mitsui and Sumitomo started in early Tokugawa period
  - Mitsubishi and Yasuda started later
    - Yasuda began as a speculator on Daimyo currencies
    - made a lot of money and gained experience in finance
  - Mitsubishi started in Meiji Japan as a shipbuilding firm
    - Founded by Iwasaki who received many government contracts when Japan built up navy
  - By 1910's and 1920's Mitsui and Sumitomo were run by professional managers.
    - Only some were direct descendants of original founders
    - The other two were run by founders descendants

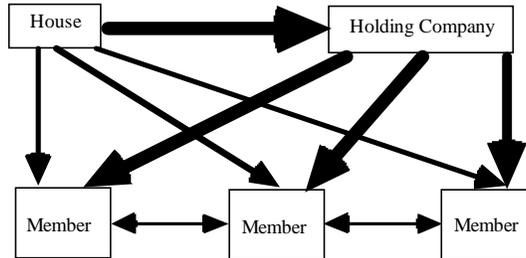
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## Key Elements of a Zaibatsu

- Financial Elements
  - Holding Company
  - Bank
- Marketing Element
  - Trading Company
- Representative Firm in Each Industry
  - Not Monopolists like US Trusts

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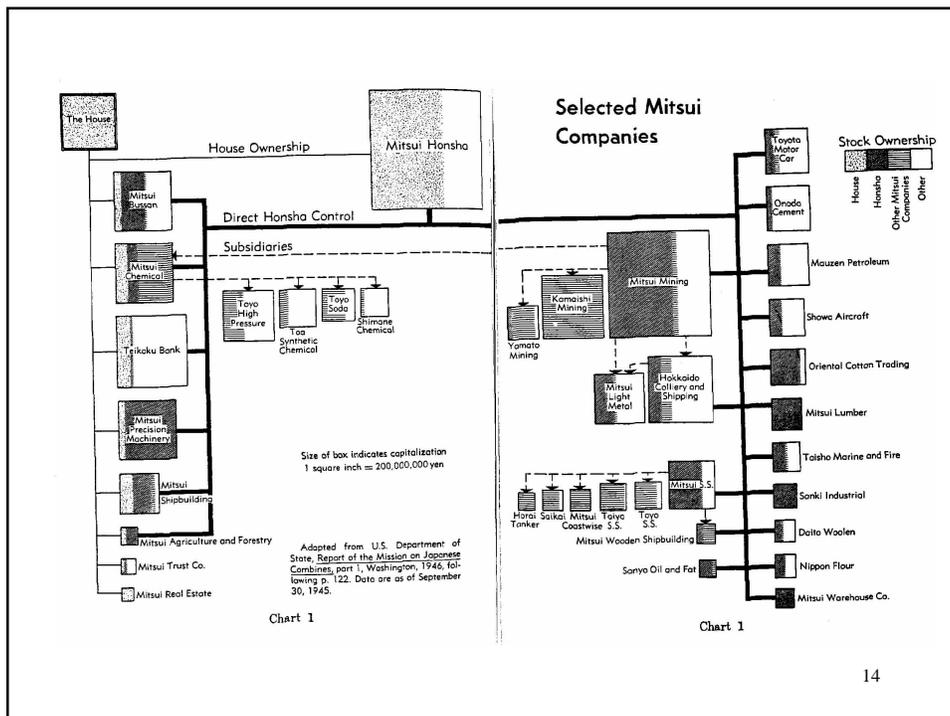
# Zaibatsu Financial Structure



Ave Ownership - 5%

Ave Ownership - 15%

Ave Ownership >50%



## Links to Modern Economy

The approximately 20 Zaibatsu are the ancestors of the modern corporate groups the *keiretsu*:

Mitsui	-->	Mitsui (Sakura) Bank Toyota
Mitsubishi	-->	Mitsubishi Bank (Bank of Tokyo-Mitsubishi) Mitsubishi Motors/Honda
Yasuda	-->	Fuji (Fuyo, Yasuda) Bank Nissan
Sumitomo	-->	Sumitomo Bank Mazda
Dai-Ichi*	-->	DKB (Ichikan) Isuzu
IBJ*	-->	IBJ Fuji Motors (Subaru)

\*Existed in prewar period but were not zaibatsu

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## Trading Companies

- Usually large firms send their own purchasing agents abroad to get raw materials and other inputs
- In Japan, the purchasing of inputs was handled by a trading company
  - Represented many firms at the same time
  - Bought and sold for member firms both domestically and overseas
- Why?
  - At this time they were primarily concerned with overseas operations
  - Very few people could deal with foreigners
  - People spoke Dutch but few spoke English, French and German

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## The Rise of Concentration

Percentage of Workers  
In firms employing 500+

1909	21
1919	32
1930	26
1940	36

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## Shares of the Five Largest Banks Relative to All Ordinary and Savings Banks

End of Year	Paid in Capital (%)	Deposits (%)	Lending (%)
1900	5.4	15.1	10.6
1910	10.2	17.4	15.1
1920	13.9	20.5	16.5
1930	24.1	31.0	27.6
1940	31.6	35.4	44.7
1945	40.4	45.7	58.6

Note: The five largest banks include Mitsui, Mitsubishi, Sumitomo, Daiichi, and Yasuda until 1942, and Mitsubishi, Sumitomo, Yasuda, and Teikoku since 1943. Teikoku Bank was created as the merger between Mitsui Bank and Daiichi Bank in 1943. It absorbed Juu-Go Bank in 1944, and broke up again into Mitsui and Daiichi in 1948.  
Source: Teranishi (1982), p.295.

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## Concentration in Japanese Banking

	Number of Banks		C <sub>5</sub> of bank Lending
		1900	11.6
1911	1447	1910	17.2
1920	1326	1920	20.9
1930	782	1930	29.5
1940	286	1940	46.8

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## Why did this structure develop: The Party Line

- Often argued that Zaibatsu were monopolies or were on the path to monopoly
  - Marxist approach and SCAP idea
  - Totaling Zaibatsu assets can yield impressive statistics
    - Just before WWII seven largest banks controlled 60% of assets and deposits of all private, commercial banks
    - If include the 6 government banks 50% of all capital and deposits
    - However, important to remember that these were competing firms
- Government policy
  - Policies geared to the concentration of banking through increasing minimum asset requirements
  - Favoritism and corruption in the granting of government contracts

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## Why Did This Structure Develop? Other Ideas

- Financial factors
  - Allowed greater control
    - Yasuda had ¥30 mln in assets in 1944 but controlled ¥40bln
  - Diversification without portfolio management
  - Improved information and fewer informational leaks leading to lower cost of capital
  - 1895 Eliminated restrictions on share of lending to any one firm.
    - Allowed banks to lend heavily to particular firms

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## Why Did This Structure Develop? (Cont.)

- Economic reasons
  - Setting up large scale factories, mines, shipbuilding plant required a lot of capital
- Policy
  - Japanese government made it difficult to get this financing unless had governmental support
  - Gov't felt that it had to control access to capital
  - Established Postal Savings System to collect funds from all over Japan and loan them out
    - Led to more trust in financial system
      - Contrast with India where wealth was held in gold
    - But government may have favored lending to larger concerns

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## Why Did This Structure Develop?

- Marketing factors
  - Multimarket oligopoly
  - Economies of scale in marketing
    - Limited knowledge of foreign law/markets
  - Improved informational flows
    - Allowed simultaneous launching of industries

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## Zaibatsu Were Multimarket Operations

- Zaibatsu competed in many sectors so it was really multimarket oligopoly
  - Until very recently people tended to argue that Zaibatsu were like monopolies
    - Very different from US Trusts
    - US steel, Standard Oil, American Tobacco, American Sugar refining, United Shoe Machinery controlled 65-95% of output
  - Japanese zaibatsu tended to always have several competitors in each product market
    - 5-6 competitors in each sector
    - E.G. Cotton spinning 72 firms but 6 firms controlled half output

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## Zaibatsu Shares of Capital by Sector (1937)

	Mitsui	Mitsubishi	Sumitomo	Yasuda
Mining	14.2	9.1	2.7	0.0
Metals	2.6	0.9	15.3	0.0
Machinery	11.0	5.1	2.4	0.5
Ships	0.0	35.6	0.0	0.0
Chemicals	8.8	6.6	4.1	0.3
Rubber	63.4	2.6	0.0	2.9
Paper	15.5	4.1	0.0	1.5
Textiles	16.1	7.5	0.0	0.0
Ceramics	7.6	15.4	0.0	0.0
Proc Foods	2.9	2.4	0.8	2.3
Elec. and Gas	2.6	0.7	0.0	0.2
Railroads	0.9	22.9	14.7	0.0
Water Trans	4.3	4.7	3.8	8.9
Banking	7.5	7.5	5.0	7.5
Insurance	2.2	50.6	2.4	6.4
Comm & Tra	8.0	1.7	0.7	0.5
Real Estate	1.4	1.0	2.5	0.9
Total	7.7	5.5	2.5	1.7

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## Multimarket Oligopoly

### Prisoner's Dilemma

		Player 1	
		Collude	Compete
Player 2	Collude	(10, 10)	(20, -10)
	Compete	(-10, 20)	(0, 0)

### Cooperative Game

		Player 1	
		Collude	Compete
Player 2	Collude	(20, 20)	(-30, 10)
	Compete	(10, -30)	(0, 0)

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## Multimarket Oligopoly

### The Linked Game

		Player 1	
		Collude	Compete
Player 2	Collude	(30, 30)	(-10, 0)
	Compete	(0, -10)	(0, 0)

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### Overall Assessment

- Were they collusive? Probably not, why?
- Political reasons
  - Government didn't want to have just one supplier in any industry
  - Favored bigness but moved contracts around to prevent monopolies
  - Zaibatsu cliques in gov't weren't strong enough
  - No zaibatsu could dominate the gov't
- Economic Reasons
  - Optimal factory sizes were well below size of market, difficult to prevent entry
    - Economic incentives not to collude
    - incentives to cheat
    - Large numbers of small firms made collusion difficult

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## Other Economic Reasons

- Japan's reliance on imports and exports made cartelization difficult
  - 25-35% of production was exported
- Eventual cartelization of industry was achieved through the destruction of trade
- Major problem in collusion was lack of control
  - Incentive of member managers was to be profitable
  - Control over individual enterprises was not that centralized

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## Some Evidence

- Lots of rivalry between different zaibatsu until 1930's
  - After 1931, the government tried hard to cartelize industries
  - Not effective until state began enforcing agreements
  - Only 24 cartel agreements in force, most not effective
  - In general, zaibatsu fought government cartels
  - By 1935, around 100 agreements and associations, but these were often crippled by cheating
  - In 1937, Japanese gov't basically took control of major industries
  - Difficulty that Japanese government had in enforcing cartels suggests that industry probably also had difficulty forming them
- Were there hidden cartels?
  - if so, why was it so hard to organize government cartels

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## Impact

- One theory: Two tiered financing system
  - Gov't loans dominated large scale ventures
    - Needed an entity to finance small scale operations
    - Zaibatsu filled this niche
  - However, zaibatsu were closely tied to government
- Banks had to perform the role of equity markets
  - Had very close ties between investors and managers
  - may have lowered the cost of capital
  - May also have enabled firms to overcome other market imperfections in raising capital (release of information)
  - May have allowed the simultaneous formation of new sectors
  - May also have restricted investment

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## JAPANESE LABOR MARKETS

- What is the relationship between the modern labor system and the prewar one?
  - Commitment mad at end of High school
  - training carried out by firm
  - pay based on age
  - Were these practices traditional?
- Characteristics of prewar markets
  - Employment was short term
  - tenure rates were very low
  - Role of women
- Comparing Japan and India

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## Labor Economics

- How was training traditionally done?
  - During the Tokugawa period there was an apprentice system
  - This system eventually became the Oyakata system
    - Employers would hire foreman who would hire and pay workers
    - Made hiring decisions and conducted training
    - Companies would employ oyakata through competitive bidding
    - Coase
    - Began to die out in 1900's

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## Wage Payments

- Agriculture
  - Labor was mostly employed by day or season
  - Long-run agricultural relations that had existed died out during this period
- Industrial wage labor was rare
  - Used “putting out system” where work was done at piece rates
  - Also used day rates after a one week testing period
  - Similar system in construction (and this continues today)
- Factories employed workers on a very short term basis
  - In heavy industries over 80% left within five years
  - Sake: workers were employed by season and paid by the day
  - During prewar period Japanese labor market was characterized by a highly elastic supply of unskilled workers
  - Little dedication to company

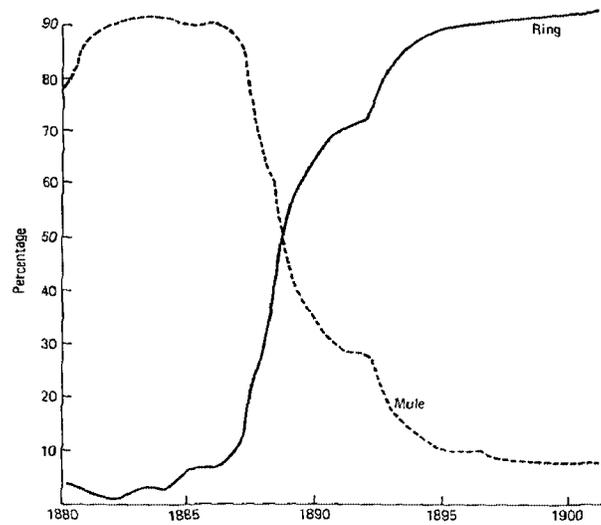
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## Percentage of Japanese with More than one Job (Yamanashi Prefecture)

	1879	1920
Male (ag)	36	74
F (ag)	30	51
Total	33	67
M (Man.)	5	22
F (Man.)	47	18
Tot.	37	20

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## Adoption of New Technology in Japan



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## Percentage of Female Factory Workers

	Japan	US	Textiles in Japan
1880		29	
1900		33	
1909	62		83
1920	53	24	80
1930	53		81

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## Weekly-Wage Movements in Japan

Year	Farm Owner's Income	Male Farm Wages	Male Mfg wages	Female Farm Wages	Female textile wages
*23	44	24	33	15	19
30	34	25	38	18	22
39	41	30	38	15	15
50	8313	3010	9417	1836	3420

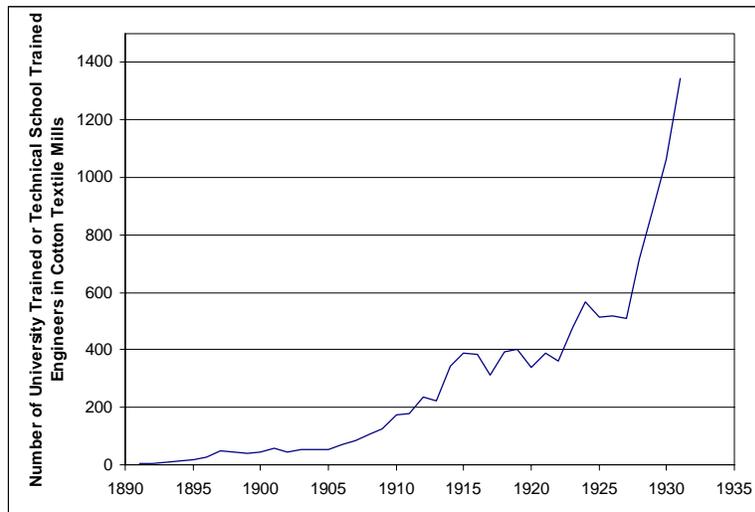
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**Table 5: Cotton-Spinning Firms with  
Largest Number of University Graduates, 1914**

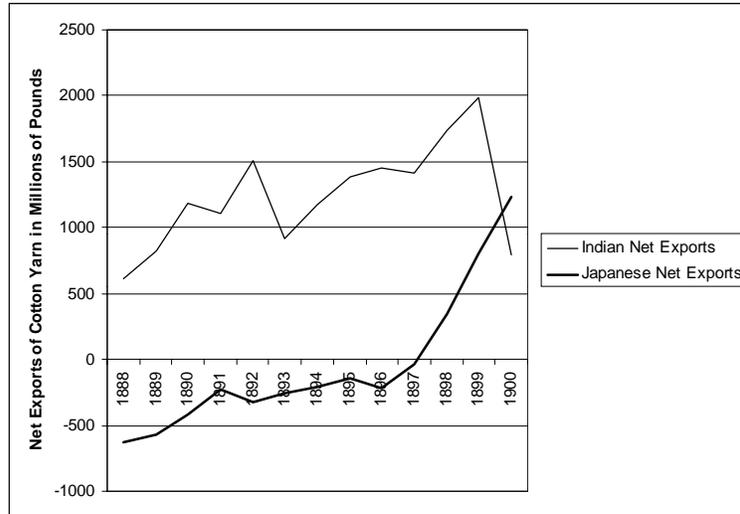
	A. University Graduates	B. Factory Workers	A/B
Kanebo	269	24,323	.0111
Toyo	136	32,441	.0042
Fuji gas	87	10,172	.0042
Osaka godo	61	9,400	.0065
Amagasaki	48	9,525	.0050
Kurashiki	45	3,135	.0143
Settsu	33	10,176	.0032
Naigai	32	2,220	.0144

Source: Shin'ichi Yonekawa, University Graduates in Japanese Enterprises Before the Second World War, 26 **Bus. Hist.** 193, 195-99 (1984);

## Engineers in Textiles

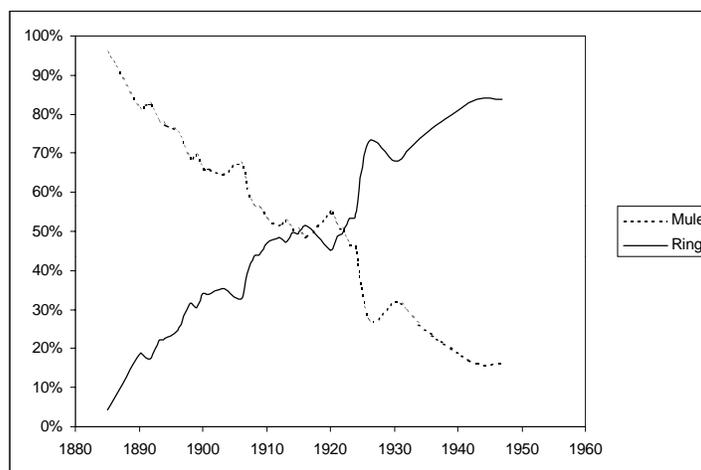


## Japan v. India



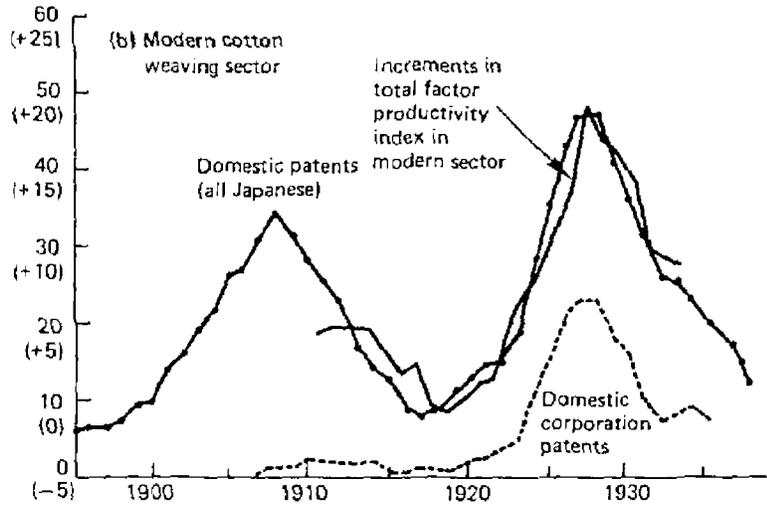
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## Adoption of New Technology in India



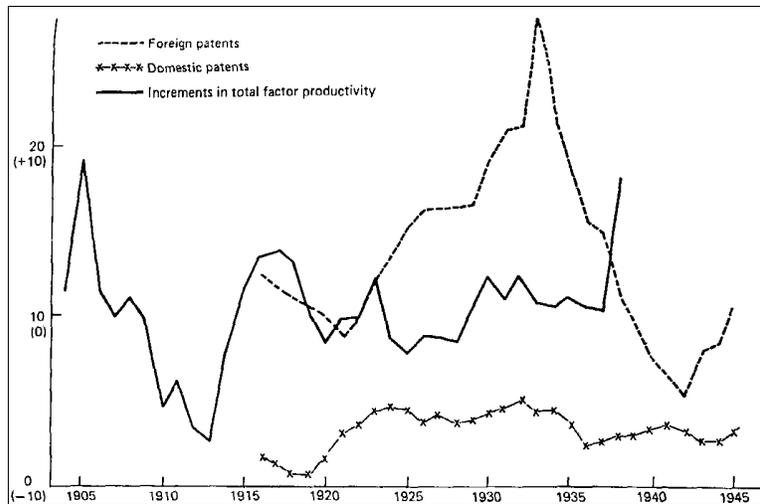
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### Patenting and Productivity in Japan



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### Patenting and Productivity in India



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## The Wartime Japanese Economy

- Japan in the Depression
  - Macroeconomics Review
  - Fiscal and Monetary Policy in the 1930's
  
- The Wartime Japanese Economy
  - Labor Markets
  - Financial Markets
  - Price Controls

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## Economic Performance in the 1930's Millions of 1934-6 Yen

	Gov't Exp	Non-Mil Gov't Exp.	Real GNP	Exports	Inflation	Int Rate	Real Int
1929	1532	646	13735	2100	20.0	8.84	-11.1
1930	1476	575	13882	2126	-18.1	9.24	27.3
1931	1843	776	13941	2240	-11.5	9.27	20.8
1932	1982	903	14557	2675	2.7	8.96	6.2
1933	2175	965	16025	2831	8.8	8.42	-0.3
1934	2062	781	17422	3642	10.6	7.83	-2.8
1935	2103	798	18366	4273	-1.8	7.65	9.5
1936	2135	578	18763	4387	2.4	6.94	4.5

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## Prewar Inflation

	Inflation
1929	20.0
1930	-18.1
1931	-11.5
1932	2.7
1933	8.8
1934	10.6
1935	-1.8
1936	2.4
1937	5.8
1938	10.9
1939	23.0
1940	26.7
1941	13.2
1942	21.4
1943	16.1
1944	22.1

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## Unionization in Japan

	<u>1930<sup>a</sup></u>	<u>1947</u>	<u>1964</u>	<u>1975</u>	<u>1988</u>
Total Union Members (%)	354,312 (100)	6,268,432 (100)	9,652,350 (100)	12,472,974 (100)	12,157,134 (100)
Enterprise Union Members	127,463 (36)	5,119,690 (82)	8,819,041 (91)	11,361,378 (91)	11,155,771 (91)
Industrial Union Members	164,547 (46)	403,120 (6)	476,008 (5)	682,728 (5)	468,490 (4)
Craft Union Members	24,974 (7)	610,882 (10)	65,607 (1)	169,569 (1)	370,297 (3)
Other Union Members	37,328 (10)	134,740 (2)	291,694 (3)	259,299 (2)	162,576 (1)

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## Japanese Economic Performance During WWII

¥mln	Real GNE	Growth	Private Cons.	Growth	Gov't Cons	Growth	Imports
1936	17157		11003		2618		4296
1937	21220	0.24	11540	0.05	4247	0.62	4518
1938	21935	0.03	11382	-0.01	5491	0.29	4658
1939	22117	0.01	10839	-0.05	4688	-0.15	4752
1940	20796	-0.06	9723	-0.10	7896	0.68	5280
1941	21130	0.02	9410	-0.03	6134	-0.22	4985
1942	21405	0.01	8956	-0.05	6460	0.05	3823
1943	21351	0.00	8469	-0.05	7445	0.15	3380
1944	20634	-0.03	7006	-0.17	7301	-0.02	2470

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## The Transformation of Japanese Finance

Year	Law
1937	Temporary Funds Adjustment Law
1938	Total National Mobilization Law
1939	Corporate Profits Distribution and Fund Raising Order
1940	Bank Funds Application Order
1941	Emergency Cooperative Lending Consortium
1942	National Financial Control Association/Reform of BOJ Law
1943	Designated Financial Institution System Introduced

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## Financial Institutions Assignment for Munitions Companies and the Post-war Main Bank Relation (Hoshi-Kashyap)

	1962	1974
Number of companies that we can check main bank relation	111	112
(A) Designated institution (DI) is the largest lender and one of the top 10 shareholders	70	61
(B) A financial institution in the same keiretsu as DI is the largest lender and one of the top 10 shareholders	11	21
(C) DI is the largest lender though it is not one of the top 10 shareholders	13	5
(D) A financial institution in the same keiretsu as DI is the largest lender though it is not one of the top 10 shareholders	4	1
(A)+(B)+(C)+(D)	98	88
Number of companies that belonged to 4 largest <i>zaibatsu</i>	27	27
(E) DI is the largest lender and one of the top 10 shareholders	17	14
(F) A financial institution in the same keiretsu as DI is the largest lender and one of the top 10 shareholders	5	7
(G) DI is the largest lender though it is not one of the top 10 shareholders	4	1
(H) A financial institution in the same keiretsu as DI is the largest lender though it is not one of the top 10 shareholders	0	1
(E)+(F)+(G)+(H)	26	23

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## Prewar Finance (Hoshi-Kashyap)

### Flow Estimates

Author	Time Period	Attribution of New Net External Funds (Percent)			
		Stocks	Bonds	Banks	Other
Goldsmith	1914-1931	42.4	9.8	41.3	6.5
	1922-1931	36.6	17.3	35.1	11.0
Masumoto	1920-1925	60.3	43.6		-3.9
	1926-1930	34.6	42.9		22.1
	1931-1935	99.2	-4.2	-25.3	30.4

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## Prewar Finance (Hoshi-Kashyap)

Author	Time Period	Distribution of Liabilities (Percent)			
		Stock- holders	Bond- holders	Banks	Other
Hoshi	1914-1930	48.3	14.2	18.6	19.0
Teranishi	1914	59.4	6.7	8.6	16.5
	1925	49.9	16.3	6.6	14.8
	1936	50.4	16.8	5.8	12.9

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## Funding Sources of Japanese Firms

	Ret. Earnings	Stocks	Bonds	Loans
1931-35	67	40	1	-9
1941-45	29	20	9	42
1951-55	43	8	2	41

## Corporate Governance

	Share holder Directors as a % of all Directors		
	1935	1942	1960
	14.5	10.6	0.3

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## Sources of Industrial Funds (Hoshi-Kashyap)

Year	Internal Funds	New Shares	New Bonds	Bank Loans
1934	54.8	55.4	2.8	-11.4
1935	51.6	32.9	1.0	14.9
1936	47.4	33.5	-2.3	18.3
1937	33.3	35.5	-0.1	31.9
1938	30.5	34.6	5.4	29.9
1939	27.1	24.5	7.9	38.4
1940	30.4	26.7	5.5	38.3
1941	33.6	29.1	10.1	28.1
1942	31.2	25.7	8.9	32.8
1943	30.3	22.6	7.8	35.8
1944	24.2	9.1	8.3	57.8

Source: Ministry of Finance (1978; pp.462-463).