

Equity Investments and Equity Investment Funding in Prewar Japan: Comments on “Were Banks Really at the Center of the Prewar Japanese Financial System?”

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I. The Three-Dimensional Relationship between Direct and Indirect Finance

Teranishi (2007) investigates whether the financial system prior to World War II was an indirect system led by banks, as it was during the high-growth period, or whether it was a direct system led by equity and other capital markets. On this question, Teranishi has long argued that large-enterprise capital-raising primarily took the form of equity, while the broader macro-level, private nonfinancial sector raised most of its funding in the form of bank borrowings, just as it did after the war. Teranishi (2007) reorganizes this argument, develops it, and adds further consideration of the qualitative capabilities of banks and equity markets.

In the process, he notes that in my research to date I have argued that the prewar financial system was basically an indirect system led by banks, and that is indeed what I have maintained, but Teranishi (2007) has caused me to reflect on whether the argument for indirect finance really holds up, and those reflections are the substance of the comments presented in this paper.

Before examining this issue, we must first confirm the vantage point from which we are determining whether finance is considered direct or indirect. Teranishi (2007) notes this conceptual problem in Fujino and Teranishi (2000, p. 148), commenting: “One must consider how to handle cases in which the borrowers of bank loans use the proceeds to purchase equity and bonds from nonfinancial enterprises; bank lending

1. This paper is a commentary on Juro Teranishi’s paper, “Were Banks Really at the Center of the Prewar Japanese Financial System?” (subsequently revised and included in this issue), which was first presented on September 9, 2005 to a workshop sponsored by the Institute for Monetary and Economic Studies (IMES) of the Bank of Japan (BOJ) entitled “Direct and Indirect Finance in Prewar Japan: Were Banks Really the Center of the Prewar Japanese Financial System?” The views expressed in this paper are those of the author and do not necessarily reflect the official views of the BOJ. Any mistakes are entirely the responsibility of the author.

may not all have been indirect finance. And there is the further question of what to do when equity is used to secure bank loans and the proceeds are then used to purchase more equity.” In other words, it appears that Teranishi (2007) considers it to be direct finance even if the funds flow through banks as long as the borrower uses them to purchase equity. From the perspective of the nonfinancial enterprise raising funds, it is certainly direct finance as long as the funds are raised in the form of equity. However, from the perspective of the saver investing funds, it is a form of indirect finance because the money is not invested directly in the enterprise but instead goes through the bank. What this indicates is that it may not necessarily be correct to posit a simple duality between direct and indirect finance. One needs to understand the three-dimensional relations between them.

My argument in favor of indirect finance is made from the perspective of the saver investing funds. It began by questioning the idea that the only thing the Japanese economy had to do, as a latecomer to capitalism, was establish a joint-stock company system, and a broad range of social capital would naturally concentrate in those companies. What I posit is that a large number of banks were first established to concentrate micro-savings and that these funds were used to initiate equity investments. The intent of this argument is not to ignore the historical facts concerning the gradual formation of capital markets, nor is it to “discount the role played by equity markets” (Teranishi [2007, p. 69]). If anything, it is to provide the verification necessary to clarify the conditions under which equity markets formed in modern Japan.

Equity-secured finance illustrates that it is possible for direct finance itself to be supported by the flow of funds through banks, and the high relative weight of equity-secured finance in bank lending is extremely important as an indication of the broad ties between indirect and direct finance. This relative weight has not necessarily been accurately assessed in the past, so Table 1 is included as an opportunity for review.

The preface to Ishii (1999) notes that in 1896 equity-secured finance accounted for 42 percent of lending by national banks and ordinary banks (even when bill discounts are included), and two-thirds of all industrial shares and two-ninths of all banking shares were pledged to banks as security. Table 1 also calculates the ratio of equity-secured loans to total lending and overdrafts at ordinary banks and savings banks in subsequent years. According to ratio (1) in the table, the peak was reached in 1896 at 42.2 percent, declining thereafter to the 20 percent range, but rising again to 40.0 percent in 1916 before entering a process of gradual decline. However, the reality was quite different. As can be seen on the right side of ratio (1), for each year, after 1896 there was an increase in discounted bills, and the outstandings eventually surpassed loans and overdrafts in 1906, but this figure includes a large number of what were in effect loans on bills. When loans on bills began to be accounted for as loans in 1916, there was a sharp rise in outstanding loans and overdrafts and also a sharp rise in the relative weight of equity securities. These points must not be overlooked. If we assume that between 1915 and 1916 loans, overdrafts, and discounts increased by a flat 1.27 times and the ratio of equity securities to total lending and overdrafts was 21.5 percent, then the ratio of equity securities in the “discounted bills” that began to be accounted for as loans in 1916 (approximately ¥1.0 billion in loans on bills, or 63.1 percent of what were formerly listed as bill discounts) is estimated at an incredible 61.6 percent.

Table 1 Development of Equity-Secured Finance

¥ thousands, percent

Year (end)	Lending and overdrafts		Ratio (1)	Discounted bills			Ratio (2)
		Equity- secured		Loans on bills	Equity- secured		
1893	130,163	46,897	36.0	39,256	24,771	15,259	40.1
94	146,005	50,372	34.5	64,768	40,869	25,175	40.4
95	183,790	68,314	37.2	85,083	53,687	33,071	42.7
96	271,008	114,421	42.2	127,813	80,650	49,680	46.7
97	287,734	104,379	36.3	158,682	100,128	61,679	42.8
98	317,769	115,847	36.5	151,904	95,851	59,044	42.3
99	341,551	97,302	28.5	287,670	181,520	111,816	40.0
1900	389,944	107,890	27.7	335,745	211,855	130,503	39.6
01	397,474	104,694	26.3	298,514	188,362	116,031	37.7
02	417,268	99,865	23.9	340,625	214,934	132,399	36.7
03	435,428	95,928	22.0	372,156	234,830	144,655	35.9
04	450,835	95,652	21.2	369,429	233,110	143,596	34.9
05	475,115	102,943	21.7	422,364	266,512	164,171	36.0
06	522,126	134,685	25.8	715,950	451,764	278,287	42.4
07	609,671	152,904	25.1	652,261	411,577	253,531	39.8
08	613,075	145,171	23.7	632,316	398,991	245,778	38.6
09	621,546	131,906	21.2	655,624	413,699	254,839	37.4
10	665,069	147,570	22.2	754,786	476,270	293,382	38.6
11	727,143	157,067	21.6	868,813	548,221	337,704	38.8
12	801,873	175,326	21.9	953,000	601,343	370,427	38.9
13	879,676	198,153	22.5	1,053,000	664,443	409,297	39.3
14	928,530	203,943	22.0	1,091,000	688,421	424,067	38.8
15	917,388	197,502	21.5	1,249,000	788,119	485,481	40.0
16	2,162,128	865,886	40.0	585,000			40.0
17	2,803,326	1,053,265	37.6	845,000			37.6
18	3,759,793	1,257,106	33.4	1,340,000			33.4
19	5,172,745	1,887,978	36.5	1,960,000			36.5
20	5,954,802	1,891,076	31.8	1,546,000			31.8
21	6,311,510	2,033,821	32.2	1,549,000			32.2
22	6,491,651	1,944,345	30.0	1,543,000			30.0
23	6,680,626	1,942,910	29.1	1,581,000			29.1
24	6,803,940	1,933,007	28.4	1,673,000			28.4
25	7,424,601	2,015,490	27.1	1,610,000			27.1

Notes: 1. The year-end amount outstanding is the sum of national banks, ordinary banks, and saving banks.

Documentary bills are included in discounted bills.

- Ratio (1) is the share of equity-secured finance within total lending and overdrafts. Ratio (2) is the share of equity-secured finance within the sum of lending, overdrafts, and loans on bills.
- The discounted bills outstanding between 1893 and 1897 are estimated by multiplying the year-end bills outstanding by 0.1417325, which is the year-end outstanding discounted bills of ordinary banks between 1898 and 1902 divided by the year-end total outstanding bills. The year-end total discounted bills outstanding of private banks in 1893 are estimated by doubling the total outstanding bills for the second half of the year.
- The equity-secured finance in lending and overdrafts between 1893 and 1898 includes "foreign corporate bonds and other securities." However, the share of foreign securities is minor (e.g., 0.6 percent in 1899).
- From 1916, loans on bills, which had been included under discounted bills, were moved into the category of lending. Assuming that the amounts for lending, overdrafts, and discounted bills in 1915 all increased by 1.2680683 times and that the share of equity-secured finance within the sum of lending and overdrafts was unchanged at 21.52873 percent, the amount of loans on bills shifted toward lending accounts can be estimated as ¥1,001,230 thousand (63.1 percent of the share of previous discounted bills) and the share of equity-secured finance within discounted bills can be estimated as 61.6 percent. Between 1893 and 1915, the amount of bills on loans is assumed as 63.1 percent of the total amount of discounted bills, and the share of equity-secured finance within discounted bills is assumed as 61.6 percent.

Sources: Goto (1970); Ministry of Finance Secretariat and Administrative Division, *Annual Review of Ministry of Finance*, all issues (1893–1925); Ministry of Finance Inspection Department, Finance Bureau and Banking Department, *Business Report of Banks*, all issues (1893–1925).

Ratio (2) uses this weighting to find that, for example, equity securities accounted for an estimated 42.4 percent of the ¥973.89 million in loans, overdrafts, and loans on bills at the end of 1906, with similar calculations putting the equity securities weighting at 46.7 percent of the ¥351.66 million in year-end loans, overdrafts, and loans on bills obtained from the ¥127.81 million in estimated outstanding discounted bills at the end of 1896. These are roughly the same level as was seen in the base year of 1916, which had 40.0 percent relative weight on ¥2,162.13 million in total lending. At the very least, during the two decades leading up to 1916 equity-secured finance accounted for around 40 percent of total lending, overdrafts, and loans on bills (made in the form of discounts). While corporate paid-in capital also increased from ¥397.51 million in 1896 to ¥1,089.96 million in 1906 and ¥2,468.00 million in 1916 (Bank of Japan [1966]), there was certainly no decline in the role played by equity-secured finance. If anything, it is worth noting that as corporate paid-in capital soared during the World War I boom from 1916, banks decreased the relative weight of equity-secured finance, and its position relative to corporate paid-in capital declined. Shimura (1969) argues that equity-secured finance increased as the stock market surged during the war boom, but this appears to ignore the discontinuity of the 1915–16 statistics.

II. Cotton Spinning and Railway Capital-Raising during the Industrial Revolution

The next question to be considered is the argument made by Teranishi (2007) regarding the high relative weight of equity in capital-raising for the modern enterprise sector. This point has been made in the past as well, but what sets Teranishi (2007) apart is his contention that the high relative weight of equity was more prominent in facilitating industries than in modern manufacturing itself and that in both of these sectors businesses depended on banks only for their operating capital. Meanwhile, according to Teranishi (2007), indigenous industries met their capital funding needs with cash on hand and their operating capital needs with either direct or indirect bank borrowings.

In this commentary, we look in more detail at the spinning and railway industries to investigate whether during the industrial revolution modern manufacturing or facilitating industries were really able to raise their capital funding without depending on banks.

Table 2 contains the ratio of owned capital (paid-in capital plus reserves) to fixed assets for the five major spinning companies of the time: Osaka, Mie, Kanegafuchi, Amagasaki, and Settsu. Overall, in 1890 they were fully able to cover their fixed assets with owned capital, but by 1899, when spinning capital was truly established, most of the companies were unable to cover fixed assets with owned capital and the sector overall was also unable to raise sufficient funding with long-term liabilities (bonds and borrowings), requiring it to turn to short-term liabilities (current account overdrafts and promissory notes) to just barely cover fixed assets. By 1910, some companies were still unable to cover fixed assets with owned capital, but it was sufficient for them merely to issue a small amount of long-term debt.

Table 2 Fixed Assets and Equity Capital of Top Five Cotton Spinning Companies

¥ thousands, percent

	1890	1899	1910
Fixed assets (1)	3,267	10,410	39,261
Paid-in capital (2)	3,154	7,600	22,530
Reserve and carryover (3)	518	1,532	16,576
(2) + (3) – (1)	405	–1,278	–155
Bonds and borrowing	214	832	1,885
Overdrafts and promissory bills	932	2,163	7,336
(1)/[(2) + (3)]			
Osaka Spinning	92	120	106
Mie Spinning	88	90	94
Kanegafuchi Spinning	81	135	109
Amagasaki Spinning	—	113	66
Settsu Spinning	97	87	98
Total	89	114	100

Source: Ishii (1991).

Let us use the individual corporate analysis provided by Yamaguchi (1970) to consider how the five spinning companies raised capital investment funding. Osaka Spinning used bonds and borrowings from Nihon Kangyo Bank to cover funding shortfalls for its fixed assets. It also turned to borrowings from the Mitsubishi Partnership, and between 1900 and 1906 had Dai-Ichi Bank discount accommodation bills issued to Naigai Wata Company. Although subsequently able to cover fixed assets with capital increases and bond issues, the company was unable to recover from poor results produced by obsolete facilities and in 1914 was, for all purposes, merged with Mie Spinning. Mie Spinning itself was in excellent financial health, able to consistently cover its fixed asset funding needs with owned capital, except for a period between 1901 and 1902 when it relied on borrowings from Dai-Ichi Bank to fund new capacity. However, we should note that in 1897, approximately one-fifth of its shares, along with approximately one-third of those held by shareholders residing in Mie Prefecture, were pledged as security on loans from the Yokkaichi branch of Dai-Ichi Bank, and the bank's head office in Tokyo ordered reductions in the amount of shareholders' equity. The largest of the spinning companies, Kanegafuchi, relied on borrowings from Mitsui Bank to fund its mergers, although it later switched to bond issues. Amagasaki Spinning experienced funding difficulties because of the weakness of the banks with which it dealt, surviving thanks to an 1897 loan from Ogaki Kyoritsu Bank and Nihon Kangyo Bank. Thereafter, it was the first in the sector to achieve self-financing, in which it enhanced its reserves to the point where owned capital could provide sufficient operating capital. Settsu Spinning, which later merged with Amagasaki, also had sufficient owned capital to cover its fixed asset funding needs.

Even granting that equity was the foundation for the spinning companies' capital-raising, they were not always able to rely on owned capital for their capital investment. In the process of establishing industrial capital, they were often unable to raise the funding required for fixed assets from equity and instead had to turn to banks for loans. The image of the spinning companies provided by Teranishi (2007) is the companies

as they were after they had made it through the period in which they had funding difficulties and does not appear to pay sufficient attention to the history of their funding problems during the period of the industrial revolution.

Table 3 contains data on funding demand and capital-raising at the railway companies in 1900. One can observe vast differences among the six companies capitalized at ¥5 million or more (Nihon, Kyushu, Sanyo, Kansai, Hokutan, and Hoshu) and the 35 railways capitalized at less than ¥5 million. For the former group, the large railways, owned capital was generally almost, but not quite enough, to cover construction spending, although bonds were fully able to make up the difference. For the latter, smaller group of railways, owned capital and bonds together were insufficient to cover construction costs and long- and short-term borrowings from banks had to be relied on instead. The capitalization of the giant railways differed from that of the major spinning companies by an order of magnitude, and sufficient explanation has never been given as to how they were able to raise these funds with equity. It has been pointed out that local governments used their authority (compulsion) to place shares in Nihon Railway and Kyushu Railway (Noda [1980] and Nakamura [1998]), but still the question remains as to how the investors raised the money. For our purposes here, it is sufficient to note the well-known fact that the Bank of Japan's (BOJ's) provisions for rediscounting bills secured with equity in designated railways played a major role. According to research using BOJ materials (Tsurumi [1991]), 31 percent of the shares in Hokutan and Sanyo were on deposit with the BOJ as security in 1893 (26 percent in 1895 and 26 percent in 1897). Similar statistics can be pointed to for Nihon and Kyushu shares as well. Shigeaki Ikeda of Mitsui Bank commented on private-sector banking practices of the time, pointing out that they had few deposits, "so at that point in time, the business of banking consisted of borrowing money from the Bank of Japan and taking a spread on it. Therefore, when dealing in bills, the very first question to be asked was whether the bill would or would not go through the Bank of Japan. If it did not look like it would be accepted, banks would return the bill to borrowers for unclear reasons. It was just working on commission" (Ikeda [1949]). In this context, whether the BOJ would accept it refers to whether it was included in the BOJ's list of guaranteed instruments, most of which were shares in designated railway and marine transportation companies.

Table 3 Construction Costs and Equity Capital of Railway Companies (1900)

¥ thousands

	¥5 million or more	Less than ¥5 million	Total
Construction costs (1)	134,326	63,188	197,514
Paid-in capital (2)	130,283	50,984	181,267
Reserves (3)	3,092	544	3,636
(2) + (3) - (1)	-951	-11,660	-12,611
Bonds	4,759	6,259	11,018
Long-term borrowing	338	2,160	2,498
Short-term borrowing	1,365	6,068	7,433

Notes: 1. Paid-in capital of ¥5 million or more includes six companies: Nihon, Kyushu, Sanyo, Kansai, Hokutan, and Hoshu.

2. Paid-in capital of less than ¥5 million includes 35 companies.

Source: Ishii (1991).

Oumi Railway provides an example from the smaller-railway group. At the end of 1900, its paid-in capital of ¥901,000 was nowhere near enough to cover its construction costs of ¥1,614,000, so the president wrote and the board of directors all endorsed accommodation bills for ¥832,000 that were discounted by banks in Shiga Prefecture, Kyoto, and Osaka. Over a period of four years, Kitahama Bank in Osaka is said to have rolled over short-term unsecured bills 20 times (Choginshi Kenkyukai [1984]).

In other words, behind the placement of shares in the largest railway companies was powerful support from the banking system, led by the BOJ. For smaller railways that lacked such support, it was necessary to rely on lending from banks facilitated by the connections of managers and major shareholders.

III. Funding for Equity Investments

Another question to be considered is how investors buying shares accumulated the funds for these investments. Even if they borrowed funds from banks, this still assumes that investors had a certain amount of their own money. This question is not one of the key topics in Teranishi (2007), but it is an important and unavoidable issue when considering the question of indirect or direct finance, which is why I want to address it here.

Unfortunately, there is very little empirical research focusing on this area. There are studies of accumulation by the general *zaibatsu*, but not much has been done regarding other investors. Let us consider the case of Eiichi Shibusawa. Shibusawa ranked 25th in an 1898 nationwide survey of major shareholders, with holdings worth ¥1.14 million at market prices. When the Imperial Family and nobility were excluded, he ranked 14th among the private bourgeois, making him one of Japan's most powerful investors. According to a study investigating the funding for these investments (Shimada [1998]), Shibusawa, who sat on the boards of 28 companies in 1902, earned money from stock trading as well as dividends, and this is what provided funding for investments. Unfortunately, there is no balance sheet for the Shibusawa family, so it is unknown to what extent funds were borrowed from banks. Nonetheless, the profit/loss account for the Shibusawa family in 1891, produced in Shimada (1998), finds that ¥42,240 in credit interest was paid against dividend income of ¥90,234. Assuming an average payout ratio of 12 percent for dividends and an average interest rate of 8 percent for bank loans, Shibusawa's equity holdings would have averaged ¥751,950 and bank borrowings ¥528,000. In other words, an enormous sum equivalent to 70 percent of the par value of the shares was raised through banks. While there was a foundation of funds on hand, bank loans were used to leverage this and Shibusawa invested several times more than the amount of money he had on his own. It is reasonable to assume that other people making large investments made use of bank loans in the same way as Shibusawa.

The next question to be considered is where the funds came from equity investments by merchants, who made up the majority of shareholders. What immediately springs to mind are the commercial profits generated by commercial activities with

micro-producers and consumers who had no direct relationship to the joint-stock companies in which they invested. From the perspective of the capital sector, funds are accumulated externally and enter the capital sector through the purchase of equities, which is what enables joint-stock companies to be formed. However, once the joint-stock companies begin to develop and pay dividends to their shareholders, the dividends may be reinvested, in which case a part of the funding for merchants' equity investments may have come from earnings in the capital sector. A new study elucidates these issues by analyzing the business practices of a specific merchant family, that of grain and fertilizer wholesaler Sotaro Hiromi, located in the city of Kaizuka, Osaka Prefecture (Ishii and Nakanishi [2006]). For our purposes here, I would like to note some of the findings from this study to raise some questions.

The Hiromi family began to invest in equities at the end of the 1870s, purchasing shares primarily in banks, railways, and spinning companies. Their holdings increased from the ¥10,000 level in 1891 to more than ¥40,000 in 1896, more than ¥60,000 in 1905 and more than ¥100,000 in 1911. During this period, the family continued to trade fish-manure fertilizer produced in Hokkaido, just as it had done since early modern times, but the earnings generated were not necessarily large. Table 4 illustrates the Hiromi family's base of income. Up to the early 1890s commerce was the largest income sector, but when commerce fell into a slump in the latter half of the decade, securities emerged as the largest earner and stock dividends became the leading component in the income structure. Even after commercial profits recovered in the 1900s thanks to direct purchasing from Hokkaido, the income structure did not change. Table 5 contains the major borrowing/lending account for the family; it is notable that liabilities to banks increased and decreased in parallel with changes in securities holdings. Assuming that it had become possible for the family to borrow from banks, the commercial profits that it had accumulated to that point in time were first used to invest in equities, and then, when making further equity investments during the World War I period, as was done in 1916, the family depended on loans from banks and continued to borrow from banks thereafter. Equity earnings after World War I have been omitted from this paper, but they were fairly large for the family and it was certainly possible for them to repay their loans. Nonetheless, they

Table 4 Development of Profit Sources of the Hiromi Family

¥, annual average

Period	Commercial activities	Real estate	Securities	Total, including other sources
1884–86	2,858	433	331	3,519
1887–89	980	475	584	2,289
1890–92	3,670	831	745	5,444
1893–95	3,787	890	938	5,726
1896–98	–195	1,297	4,129	5,362
1899–1901	–2,149	0	4,237	2,213
1902–04	3,231	48	3,546	6,945
1905–07	2,991	–42	7,377	10,923
1909–11	2,323	1,968	6,757	11,501

Source: Nakamura (2003).

Table 5 Asset/Liability Account of the Hiromi Family

¥, percent

Year (end)	1882	1899	1912	1916	1926	1935
Cash	1,070	477	457	902	7,844	871
Merchandise inventory	11,605	54,260	30,520	27,805	25,126	27,164
Borrowing from fertilizer companies	—	—	—	—	-7,161	-2,093
Lending to farmers	5,332	9,805	40,062	32,619	63,358	44,924
Securities	2,482	46,469	119,579	269,822	721,888	586,130
Bank loans	-3,481	-50,298	-121,435	-221,053	-325,000	-301,760
Net assets	17,008	60,713	69,183	110,095	486,055	355,236
Equity capital ratio	83.01	54.69	36.29	33.25	59.26	53.90

Note: Equity capital ratio is the share of net assets within the sum of cash, merchandise inventory, lending to farmers, and securities.

Source: Ishii and Nakanishi (2006).

continued to borrow at a certain level and invest their equity earnings in the home and real estate sectors.

The Hiromi case study may be somewhat unique because, even though commercial profits stagnated early on, the family was successful in its equity investments and continued to enjoy steady earnings. Nonetheless, it does bring to light the interesting fact that when merchant families invested in equity while continuing their commercial activities, the borrowing of commercial funds from banks enabled them to invest all of the profits that they had accumulated into equities. This underscores how superior bank transactions were; such a thing would not have been possible when dealing with money changers. It was bank lending to merchants that supported merchant investments in equity, a fact that highlights the support that indirect finance provided for direct finance.

Finally, one question that emerges from the Hiromi case study is whether the source of funds for equity investments was exogenous or endogenous. This is the question of whether the dividends paid by joint-stock companies were reinvested in the companies through capital increases and other mechanisms. In this context, the funding for investments differs from the external funding provided by merchants and landlords, who in turn earned it from micro-producers. Rather, it is endogenous funding generated within the capital sector. The extent to which dividends accumulate differs according to the operating results and dividend policies of the company and the point in time at which cumulative dividends exceed paid-in capital depends upon the rate at which the company's capital grows, but one yardstick that can be used is comparisons of paid-in capital and cumulative dividends against those of leading companies in several sectors (Table 6).

Looking at the five major spinning companies, in 1906 the ratio of cumulative dividends to paid-in capital ("cumulative dividend ratio") was extremely high for Amagasaki and Settsu, the two companies that later formed Dainippon Spinning, and was also fairly high for Osaka and Mie, the two companies that later formed Toyobo. Only Kanegafuchi was below 100 percent. Even acknowledging these differences, however, the cumulative dividend ratio for all five companies was in excess of 100 percent in 1905, making it possible on the flow of funds side for them to expand

Table 6 Accumulated Dividends of Cotton Spinning, Railway, and Marine Transportation Companies

[1] Top Five Cotton Spinning Companies (1883–1906)

¥ thousands, percent

Year	Paid-in capital	Accumulated dividends	Cumulative dividend ratio	Osaka Spinning	Mie Spinning	Amagasaki Spinning	Settsu Spinning	Kanegafuchi Spinning
1883	265	8	3	3				
84	336	58	17	17				
85	560	89	16	16				
86	633	163	26	27	0			
87	880	356	40	52	6			
88	1,900	576	30	51	13			0
89	2,527	846	33	61	20			3
90	3,154	993	31	72	19		0	2
91	3,534	1,265	36	81	27	6	14	4
92	3,650	1,738	48	93	44	21	32	12
93	4,162	2,273	55	104	58	44	40	17
94	4,954	2,859	58	116	57	57	60	18
95	5,804	3,637	63	133	58	74	80	22
96	6,280	4,525	72	148	68	65	100	31
97	6,475	5,401	83	159	81	65	120	43
98	6,520	5,985	92	164	92	73	140	48
99	7,600	7,026	92	177	97	88	165	46
1900	8,200	7,614	93	179	109	108	180	42
01	8,725	8,373	96	140	113	128	200	46
02	10,853	9,173	85	144	121	148	168	35
03	11,303	10,270	91	148	129	168	136	42
04	11,553	11,437	99	157	125	188	153	49
05	12,861	14,287	111	160	106	223	188	65
06	13,961	17,703	127	116	136	268	233	83

[2] Top Five Railway Companies (1881–1905)

¥ thousands, percent

Year	Paid-in capital	Accumulated dividends	Cumulative dividend ratio	Nihon	Sanyo	Kansai	Kyushu	Hokutan
1881	558	12	2	2				
82	1,258	98	8	8				
83	3,822	336	9	9				
84	5,163	745	14	14				
85	6,648	1,231	19	19				
86	8,062	1,923	24	24				
87	9,475	2,568	27	27				
88	12,829	3,846	30	33	2			
89	23,682	5,525	23	36	4	0	5	0
90	31,837	7,939	25	41	7	0	8	14
91	37,890	10,711	28	48	9	3	12	16
92	41,237	13,096	32	52	13	5	16	18
93	42,113	16,270	39	62	17	7	22	26
94	48,061	20,106	42	62	21	9	25	38
95	55,466	25,766	46	61	32	11	27	47
96	64,721	30,229	47	63	30	13	32	56
97	90,460	37,815	42	57	30	13	25	57
98	102,559	45,236	44	58	34	15	25	91
99	112,647	54,115	48	67	36	16	27	109
1900	128,203	64,674	50	76	39	16	33	77
01	144,598	77,007	53	86	42	21	32	80
02	149,898	89,937	60	95	49	26	38	82
03	149,093	103,536	69	102	56	32	45	134
04	161,991	117,501	73	107	56	33	50	141
05	166,671	134,365	81	120	63	38	58	139

Table 6 (continued)

[3] Top Three Marine Transportation Companies (1884–1906)

¥ thousands, percent

Year	Paid-in capital	Accumulated dividends	Cumulative dividend ratio	Nippon Yusen	Osaka Shosen	Toyo Kisen
1884	1,164	43	4		4	
85	1,247	115	9		9	
86	12,350	1,074	9	8	14	
87	12,350	2,055	17	16	22	
88	12,350	3,375	27	28	22	
89	12,350	4,695	38	40	22	
90	12,100	5,905	49	52	24	
91	12,100	6,940	57	61	29	
92	12,100	7,867	65	69	34	
93	10,600	8,696	82	92	32	
94	10,740	9,796	91	102	41	
95	10,740	11,025	103	112	59	
96	15,859	12,388	78	90	40	
97	23,769	13,116	55	61	33	
98	25,500	15,072	59	65	37	
99	27,500	17,629	64	69	46	
1900	30,750	20,962	68	80	55	12
01	30,750	24,542	80	92	65	24
02	30,750	28,122	91	104	75	36
03	30,750	31,702	103	116	85	48
04	32,125	35,305	110	128	76	60
05	35,875	39,148	109	140	57	72
06	39,650	42,925	108	153	47	71

Sources: Yamaguchi (1970); Statistics Bureau, *Annual Imperial Statistics*, all issues (1881–1906).

under their own power. They then went through a period of self-financing during World War I, following which they began to invest their surplus capital directly in China. Turning to the five major railways, the cumulative dividend ratios for Nihon and Hokutan were above 100 percent in 1903, but the other three—Sanyo, Kyushu, and Kansai—were well below 100 percent even at the time they were nationalized in 1906. Overall, the top five had a cumulative dividend ratio of only 81 percent in 1905. The railway sector continued to expand rapidly in the early 20th century and required inputs of external funding. In contrast to this are the three major marine transportation companies. Nippon Yusen's cumulative dividend ratio crossed the 100 percent line in 1902 and remained above thereafter. Indeed, it was large enough that it was able to cover the low-ratio Osaka Shosen and latecomer Toyo Kisen so that the overall ratio for the three was in excess of 100 percent by 1903. The usual understanding is that Japanese capitalism had become established by about the time of the 1907 depression, directly after the end of the Russo-Japanese war, because, despite the fact that the endogeneity of the flow of funds was only at these levels for leading companies, overall Japan had more or less reached a level where self-driven expansion was possible.

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