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HISTORY OF YEN—ITS DEVELOPMENTS IN THE JAPANESE ECONOMY (1)

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The modern age of Japan began with the Meiji Era (1868—1912) succeeded by the two following eras of Taisho (1912—26) and Showa (1926 —). The name of an Era has been customarily renewed when an emperor changes. When the 16 years old young Emperor Meiji was enthroned on the death of his predecessor, the old Japanese feudalism maintained for hundreds of years had just broken down by the downfall of the Tokugawa Shogunate and the political powers of the nation were again restored to the Emperor who had been quite nominal for a long time. So the socalled " Meiji Restoration " made the young Emperor the real Head of this newly centralized State. This first year of Meiji falls in 1868 A. D.

The first coins of copper and silver were made as early as the Wado (和同) Era in 708 and gold coins in the Keicho (慶長) Era in 1601, though Korean and Chinese coins had flowed into the country even before then. Ever since many kinds of coins different in value and quantity came into existence but they were not means of circulation in the present sense except in great cities and the country as a whole was not yet money-economized. However, in the last days of the Tokugawa regime, the central government as well as feudal lords began to issue inconvertible currency notes due to their financial difficulties, and at the time of the Restoration there were 1694 kinds of paper currency in circulation without any foundation of a definite monetary standard as there were not less than 100 kinds of gold (oval shaped Koban

and Oban) and silver (grains and oblong shaped) coins of various quality.

It was, therefore, for the new government most important and urgent to reconstruct the confused money economy on a sound basis. The most important international money in the orient at that time was the socalled " Mexican Dollar," a coin of 416 grains $\frac{9}{10}$ silver (374.4 grains or 24.2606 gm. in fine), and since the opening of some ports for trade by treaties with foreign countries the Mexican Dollars came to circulate in Japan and was deemed to be the most reliable and acceptable money. The government proclaimed in February 1868 the circulation of the Mexican Dollars throughout the country to be lawful and fixed its rate of exchange as equivalent to 3 Japanese silver coins of Bu (Bu-gin) which was originally minted to be as equivalent to 1 Bu of gold. In April of the same year, in order to mint new coins, an English coining mill at Hong kong for Mexican Dollar was purchased by an intermediary of the Oriental Bank Corporation (Yokohama branch), an active English bank, existed until 1885 and removed to Osaka but as it was burnt down by fire the new coinage minting was not started until October 1870 under the management of an English engineer, William Kindle who was appointed its director.

The first coins thus issued, were denominated as Yen, a new monetary unit, but one yen was precisely of the same weight and fineness as a Mexican Dollar mentioned above. Apparently the value of the yen was fixed to correspond to the Mexican Dollar independent of the existing monetary unit. The monetary units prevailing until then were very complicated. Regarding gold, there was a unit of Ryo (両)* originating from the Chinese Tael, and one Ryo was equal to 4 Bu (分) and 1 Bu (Bu-Kin) to 4 Shu (朱). Regarding silver, a unit of Momme (匁) or Me (目) was used, which was decimalized into Fun (分) and Rin (厘) and for Copper coins, the unit was Mon (文)

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* Ryo was originally the unit of weight in China, as pound was in England. Kan, Momme, Fun, Rin were alike units of weight actually used in Japan. When the Japanese gold coins, Koban, were first struck in 1601 (6th year of Keicho) the large one, which was called Oban (big coins) was worth 10 Ryo and the small one, Koban (small coins) weighing one tenth of the former, was worth 1 Ryo. Koban of the Keicho Era weighed 4.773–4.775 Momme, consisting of $\frac{856.9}{1000}$ of gold, $\frac{142.5}{1000}$ of silver and the rest of miscellaneous metals, which was equivalent to about 4.053 Momme of fine gold. Oban contained ten times the amount of this fine gold. As the content of the Japanese new Yen defined by the new Act of 1871 was 1.5 gramm, that is to say 0.4 Momme of fine gold as aforesaid, a gold 1 yen compared to 1 Ryo of Keicho Koban is approximately one-tenth. 1 Ryo was so much devaluated at the time of its replacement by the yen in 1871. There lay about 170 years between the two periods.

with 1000 mon making a Kan (貫) In the past, it was once officially decided that a gold Ryo is equal to 60 silver Me, and to 4,000 copper Mon. But as there appeared various kinds of coins different in quality according to their date of issue, no fixed rates of exchange really existed between gold and silver units, and excepting copper coins, which were widely in circulation and accounted by tale, most of them were evaluated by weight. The new unit Yen (圓 or 円) means literally circle or roundness and has no connection with weight, The new one yen was really the first round shaped coin in Japanese history, as prior to it, only copper coins were round, yet they had without exception square holes in the center.

This is the birth of the Yen in 1870, but the above step was taken rather for temporal convenience and more fundamental reforms remained untouched. The New Coinage Act (新貨条例) enacted in May of the following year was intended to change the standard of money from silver to gold, declaring that the 1 yen gold coin should be hereafter the standard money lawfully payable without limit, and all silver coins were to be auxiliaries. This policy was decided by the cabinet according to the advice sent from Hirobumi Ito, a later prime minister and a then high official of the finance ministry, who had been sent to the United States to study public financing and observe the directions of monetary reforms going on in America and Europe. The new one yen gold coin fixed by this Act was to contain 1.5 gramm (23.14 grains or 0.4 Japanese Momme) of fine Gold. Beside the one yen, 20, 10, 5, and 2 yen gold coins were to be minted. As subsidiaries were four kinds of silver coins with denominations below 50 sen ($\frac{1}{2}$ yen) and three kinds of copper coins below 1 sen. ($\frac{1}{100}$ yen) According to the Act a silver coin of 50 sen was to contain 10 gramm (154.4 grains) of fine silver. Though the new monetary unit Yen was introduced, it was provided in the Act that 1 yen should equal 1 Ryo, and 1 yen be equivalent to 1,000 Mon of the nominal standard copper coins (Eiraku-sen).

Thus upon the surface of things the new coinage act introduced the gold standard system to Japan in 1871 but in reality it was not so, because of the maintenance of the Mexican Dollar as legal money on the other side. As already mentioned, Ito advocated the adoption of the gold standard after the manner of the advanced countries in the west. But opinions of English envoys and representatives of the Oriental Bank were against it and they

persuaded Japan to adopt the Mexican Dollar as a standard and warned them of the disadvantage caused by taking the double standard system. As there was no gold reserve, that is enough to adopt the monometallic system without financial support from outside and the existence of the Mexican dollar as a de facto international currency in the orient was not to be ignored, the only possible method was eclecticism. The Mexican silver dollar was thus permitted to circulate, at first " for the time being in compliance with the request of people in and out of the country to facilitate trade in licensed ports." " A silver coin of the same weight and fineness as the Mexican dollar, named the Trade dollar (Boeki-gin) shall be coined and be current side by side with the Mexican dollar " and " in all licensed ports 100 yen of them shall be fixed as equivalent to 101 yen of gold coins." As the currency of silver coins was not confined to port districts in reality the Mexican dollar and not the gold yen functioned as a real standard from the beginning. It was no wonder, as the value ratio of gold and silver fixed in the Act was 1 : 13.333, while the exchange ratio of the new gold coin and Mexican dollar (Trade silver) was 1 : 16.174. Thus the new gold coins as well as the new silver coins other than Mexican dollars had to disappear very soon from the market and the result was the de facto silver standard system.

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As aforesaid, Japan decided to start her money economy by adopting the gold standard, but as the one yen Trade Dollar (Mexican Dollar) which was originally allowed to circulate only in export and import ports districts was authorized to be passed without limit in the country after May 1878 the monetary system of Japan changed into bi-metallism completely. Prior to this, since March 1876 when the New Coinage Act of 1871 was revised by Order No. 27, " For the payment for custom duties and other taxes by foreigners, the Trade Silver Dollar (both new and old) and the Standard gold coin are received as equivalent, that is to say 100 silver coins equals 100 gold coins," both metals have come to be on the same footing, the rate of gold to silver being fixed and kept constant. And the above proclamation of May 1878 was published on the proposal made by Shigenobu Okuma, Finance Minister at that time, asserting that for Japan only to keep the gold standard was extremely difficult in the midst of circumjacent countries taking the silver

standard, and in the presence of the outflow of standard coins, especially gold, caused by the over-issue of inconvertible paper currency and the gold production within the country being scarce, the double standard of gold and silver would be much more suitable and advantageous.

If the gold-silver parity was constant or able to be maintained constantly, as in the age of the double standard in Europe under the leadership of France and others up to the first half of the 19th century it would make no difference whether gold or silver was taken as the standard.   And in truth, the gold-silver parity had been maintained around 1 : 15.5 almost unchanged for centuries. But situations were changing from about the middle of that century ; new gold mines were discovered in Australia and America, but the production of silver increased more rapidly.   In addition, after Germany changed to the gold standard the sharp fall of silver forced countries using the double standard to rapidly abandon it.   Thus the world tendency of the monetary system moved sharply changing from the silver standard to gold.

The year 1871, when the Japanese new monetary Act was proclamated was just this turning point.   Therefore the fixing of any gold-silver parity was impossible without putting Gresham's law in motion.   It is noteworthy that in 1875 Seigi Matsukata,* a later finance minister, warned the cabinet of the exorbitant outflow of species in the following words.   " Since the Restoration, the government has made efforts to build up a new currency. ······But since trade with foreigners was impossible without using Mexican Dollars, the latter has become the standard both in and out of the country. The value of this standard being very changeable the effect was unfortunate. The government by coining the new Trade Yen of heavier weight and better fineness than the silver yen prescribed in the Act tried to substitute for them in circulation.   But compared with the Mexican dollar the new silver coin had still less value.   The custom house treasurer received only Mexican Dollars, as lawful and 101 yen of the new was equivalent to 100 yen of the Mexican. Gold coins were driven out.   Thus Mexican dollars only remained as standard money."

Speaking of the value ratio of gold and silver, the characteristic of Japan

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* M. Masui, Development of our financial organization in the Meiji era. Reminishences of Prince Matsukata's achievements. The Journal of the Kobe University of Commerce. Vol. II. No. 1. 1940.

was the low price fixing of gold as compared to silver from the beginning. Thus the old "Jipang," written by Marco Polo as a country full of gold had been losing almost all of it. The following are the ratios calculated from gold and silver coins struck in the years noted. This table shows the remarkable difference of the ratios between Japan and the west, and the reason why huge quantities of gold flowed out. The outflow of gold in the Ansei Era was specially remarkable.

Table I. Gold-Silver Parity before Meiji

	Mint Parity	Market Parity	Parity in London
1601 (6 of Keicho)	11.89	—	—
1695 (8 of Genroku)	14.21	—	15.02
1706 (3 of Hoei)	10.93	{ 10.84 / 14.57	15.44
1710 (7 of 〃)	{ 12.12 / 9.47	11.30	15.22
1711 (1 of Shotoku)	5.74	—	15.29
1714 (4 of 〃)	11.92	—	15.13
1736 (1 of Gembun)	11.58	10.13	15.18
1819 (2 of Bunsei)	13.32	13.02	15.33
1820 (3 of 〃)	10.24	9.91	15.62
1837 (8 of Tempo)	8.57	8.66	15.83
1859 (6 of Ansei)	5.24	6.36	15.19
1860 (1 of Man'en)	15.58	18.93	15.29
1865 (1 of Keio)	—	26.11	15.44
1871 (4 of Meiji)	16.01	15.55	15.57
1875 (8 of 〃)	16.17	15.85	16.59
1878 (11 of 〃)	16.17	17.03	17.94

The ratios of the same from 1868 to 1897 the 30th of Meiji, when the gold standard system was adopted were as follows :

Table II. Gold-Silver Parity in and after Meiji

	Japan		London*
	legal parity	market parity	
1868	15.58	16.38	15.59
1869	15.58	15.10	15.60
1870	15.58	15.10	15.57

* I. Shrigly, The price of gold. London 1935. pp. 90–91.

	Japan		London
	legal parity	market parity	
1871	16.01	15.55	15.57
1872	16.01	15.55	15.63
1873	16.01	15.55	15.93
1874	16.01	15.48	16.16
1875	16.17	15.85	16.64
1876	16.33	16.82	17.75
1877	16.33	16.43	17.20
1878	16.17	17.03	17.92
1879	16.17	17.87	18.39
1880	16.17	17.22	18.05
1881	16.17	17.58	18.25
1882	16.17	17.40	18.20
1883	16.17	17.82	18.64
1884	16.17	17.79	18.61
1885	16.17	18.66	19.41
1886	16.17	20.15	20.78
1887	16.17	20.96	21.10
1888	16.17	21.49	22.00
1889	16.17	21.22	22.10
1890	16.17	19.47	19.75
1894	16.17	30.82	31.60
1897	32.34	—	34.20
1898	—	—	35.03
1899	—	—	34.36
1900	—	—	33.33
1905	—	—	33.87
1910	—	—	38.22
1915	—	—	40.48

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Coming back to the beginning, we now turn to the yen embodied by paper currency. The task of the new government to put the flood of inconvertible paper currency in order was not easily completed in face of the financial necessity at the time of the foundation of the new centralized state. To raise money by government bonds was impossible and the issue of governmental currency notes was the only way to meet the financial need. The result was only to add new kinds of inconvertible paper currency to those already existing.

Issued from May in 1868 (the 1st year of Meiji) to December of the next
year the first governmental notes called "Daijokan-satsu" (another name was
Kin-satsu i. e. "gold notes" only in name) amounted to 48 million Ryo. The
second in smaller denominations called "Minbusho-satsu," issued for one year
from October 1869 amounted to 7.5 million Ryo and the third "Okurasho-
dakan-shoken" put out for five months ending February 1872 came to 6.8 million
yen and the fourth called "Kaitakushi dakan-shoken" issued for 4 months in
the beginning of 1872 amounted to 2.5 million yen. The more the notes were
issued, the less became their purchasing power and 100 Ryo of the first notes
circulated was equivalent only to 40 Ryo of gold. After July 1872 the
government notes were all printed in Germany to prevent forgery and the
total amount of these elaborate notes issued for five years to 1877 reached 121
million yen, 22 milion of which replaced the notes issued by the feudal
government and lords before Meiji and 62 millions replaced the above notes
of the Meiji government. Meanwhile, the government found it necessary to
supply enough capital to rising firms and industries. In February 1869 an
office called "Tsushoshi" was established to promote the production and trade
of the country and under its guidance eight Kawase-Kaisha (exchange company
in English translation, though this signified bank. The word "Ginko" meaning
bank did not yet exist) were established in the commercial cities, of Tokyo,
Yokohama, Osaka, Kyoto, Kobe Niigata, Tsuruga and Otsu. The Kawase
Kaishas were to supply capital by issuing their notes convertible to governmental
notes. But with the one exception of Yokohama, whose notes were convertible
into silver coins, their notes were not possible for acceptance by the people in
the flood of the depreciating paper currency and 7 Kaishas out of 8 failed
very soon. However, it is worthy to note that the idea of "company" of the
west was thereby first introduced. Just at this time Hirobumi Ito sent a letter
from the United States proposing beside the adoption of the gold standard
already stated the establishment of national banks of issue to consolidate the
inflationary notes following the example of the national banking system in
1863 which aimed at putting the inflationary green backs to put in order.

So did the "Kokuritsu Ginko" (national banks) come into existence by
the enactment of the act (国立銀行条例) in Novermber 1872. While this
system was introduced by the advice of Hirobumi Ito, there was another
proposal by Kiyonari Yoshida to establish a centralized banking system like

that of England which Premier K. Inoue decided not to adopt. Besides there had been petitions to establish private banks from the public, in which the rich like Mitsui, Ono, and Yasuda were at the head. The government was concerned about the consolidation of the national debt and it was urgent and desirable for the government to replace the huge volume of paper currency with new sound bank notes. So according to the above Act of November 1872 to establish a national bank, six-tenths of its capital should be paid to the government in inconvertible currency notes for which the government handed over new consolidated bonds to national banks and these bonds alone qualified as a fiduciary reserve for the new issue of the national bank notes. Principally the bank notes were to be issued against specie reserves, and the specie reserve was to be not less than two-thirds of the amount of issue to ensure convertibility. Under these conditions, five national banks were successively established, the 1st national bank in Tokyo sponsored by Mitsui and Ono, in June 1873 with an actually subscribed capital of ¥2.448 mil. for 3 mil., the second reorganized from the former " Kawase Kaisha " of Yokohama with a capital of ¥0.25 mil., the third in Osaka sponsored by Konoike, the fourth in Niigata by local landlords and the last in Osaka by the former feudal Samurai class. But as shown above, issue of the bank notes meant no credit creation at all to the banks, and the bank could not raise loanable funds without increasing deposits which was almost hopeless in those days. Most of the notes issued were soon converted into silver and an enlargement of the circulation of the bank notes was hopeless in face of the increasing currency note issue on the part of the government. Intended replacement of the old currency with the new was out of question and one bank in Tokyo with plenty of government deposits and the another in Yokohama with convertible notes in Mexican dollars were the only ones that could stands. In March 1875 the existing four national banks petitioned to change the convertibility from silver to currency notes so that their banking business might better operate. Granting this petition the government revised the National Bank Act in April 1876, whereby bank notes became convertible into currency notes and the limit of notes issue was enlarged from six-tenths to eight-tenths of the capital of each national bank, while the legal reserve requirement was reduced from two-thirds to one-fourth of the amount of issue. It was after this revision that the number of national banks increased so rapidly that the government had to stop further

establishment when the 153rd national bank was inaugurated in Kyoto in
1879. Thus the banking business was finally put on the rail and the amount
of bank notes in circulation increased sharply as follows:

Table III. National Banks

End of	Number of national banks	Amount of capital (mil. yen)	Bank notes in circulation (mil. yen)	Deposits (mil. yen)
1873	2	3.00	0.85	2.87
1874	4	3.45	0.80	3.49
1875	4	3.45	0.23	1.47
1876 {June	4	2.45	0.06	—
1876 {Dec.	5	2.55	1.05	2.50
1877	26	22.99	13.02	4.51
1878	95	33.35	24.46	8.07
1879	153	40.62	33.96	11.79
1880	151	43.04	34.40	11.25
1881	148	43.87	34.38	13.71

But by this unification of bank notes and currency notes the government's
purpose to attain the replacement of the latter by the former came to nothing,
especially as the so-called Sei-nan (south-west) civil war, the rebellion of
General Takamori Saigo, broke out in Kyushu in 1877 and the government
found it necessary to issue currency notes anew amouting to 27 million and to
borrow 15 million yen from one of the national banks (the 15th national
bank in Tokyo, founded by feudal lords) to meet the military exenditures
needed. The total amount of issue of two kinds of paper currency increased
then from 107.41 million yen at the end of 1876 to 163.87 million yen at the
end of 1878; consequently the prices of commodities rose remarkably, some one
called it the "Seinan-senso inflation", and the agio of silver coin for paper
increased as follows:

Table IV. Depreciation of Paper Currency

Year	Notes against 1 gold yen			Notes against 1 Mexican Doller (1 silver yen)			Price of Rice (Unpolished) per 1 koku
	highest	lowest	average	highest	lowest	average	
1868	—	—	—	0.871	0.639	0.748	—
1869	—	—	—	1.093	0.860	0.962	—
1870	—	—	—	1.073	1.005	1.033	—

Year	Notes against 1 gold yen			Notes against 1 Mexican Dollar (1 silver yen)			Price of Rice (Un- polished) per 1 koku
	highest	lowest	average	highest	lowest	average	
1871	—	—	—	1.012	0.881	0.978	—
1872	—	—	—	1.066	0.966	1.018	—
1873	1.005	0.992	0.999	1.060	1.018	1.036	¥4.80
1874	1.012	0.994	1.004	1.047	1.030	1.038	7.30
1875	1.016	1.002	1.008	1.047	1.006	1.029	7.13
1876	1.049	1.000	1.019	1.023	0.948	0.989	5.13
1877	1.073	1.000	1.040	1.053	1.013	1.033	5.34
1878	1.316	1.081	1.158	1.217	1.049	1.099	6.39
1879	1.446	1.239	1.339	1.336	1.102	1.212	7.96
1880	1.828	1.428	1.573	1.686	1.365	1.477	10.57
1881	1.930	1.734	1.843	1.795	1.620	1.696	10.59

Meanwhile, the first governmental notes called " Daijokansatsu " issued in 1868, with the promised term of redemption by silver expired in 1880. Redemption being impossible the government could do nothing but substitute the new for the old. Owing to inflation* as well as to business activity stimulated by the war the rate of interest rose from the level of 10% to 15% during the four years ending December 1881. Prices of two kinds of national bonds sank heavily even below 70 against a par of 100 : one was the " Kinroku-Kosai " (hereditary pension bond) handed over in 1876 in lieu of payment in cash as annuities to former feudal lords and Samurais losing their incomes, for the amount of 173.9 million yen payable in 30 years with interest from 5% to 7% according to the status of receivers, and the other was the " Kinsatsu-hikikae-Kosai (Gold-convertible-currency-notes consolidating bond) issued since 1873 to the amount of 6.67 million yen with 6% interest payable in 15 years.

Bond holders as well as salary and wage earners suffered severely, especially many samurais who lived on these pensions sank down to lower levels during these years. However, there were also others like Zenjiro Yasuda who made fortunes with speculative profits gained by dealing with silver and bonds. The capital of the Mitsubishis represented by Yataro Iwasaki who carried troops and munitions to the front as a monopolistic shipowner during

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* K. Ono, Inflation in the early Era of Meiji. Kobe University Economic Review. 2. 1956

the war was accumulated also during this period. Again the situation was very favorable for land owners who received rent in kind from peasants and paid tax with depreciated money to the government. Thus the accumulation of capital had been rapidly proceeding by way of forced saving on the part of the general public through inflation before the introduction of deflation in 1881.

<div align="center">4</div>

With the appointment of Masayoshi Matsukata as Finance Minister in October 1881 began the deflationary policy.

Matukata was born in 1835 in Kagoshima and after spending nearly 30 years as a "samurai of Satsuma" got a position in the finance ministly in 1870, being introduced to the center by Toshimitsu Okubo who was a senior of his native place and one of the moving spirits of the Restoration in which samurais of Satsuma, Choshu (Yamaguchi) and Tosa (Kochi) played the main part. In 1875 he was pormoted to Vice-Minister of Finance and in 1878 he was sent to France and became acquainted with Leon Say, a grandson of J. B. Say, by whom he was taught the importance of stabilizing money and the necessity of establishing a central bank modeled after the newest banks, perhaps of Belguim. After returning home, he was soon appointed Home Minister in February 1880. His predecessors were Shigenobu Okuma (1873-80) and Tsunetake Sano (1880-81), Okuma, a veteran statesman occupied this important position for a long time and the foregone policies were mainly promoted by him. Even Okuma recognized the importance of adjusting the confused currency. But in his mind, the rising prices and depreciation of currency were rather the effect and not the cause of the unfavorable balance of trade instead of the depreciation of currency, the rising price of silver caused by its shortage brought about by imports exceeding over exports was the evil. Of foremost importance to him was therefore, to correct the balance of payment by promoting exports and to lower the silver price by increasing the supply of silver. To curtail the volume of currency corresponding to the decrease of silver would be a deterrent to the growing economy. From this point of view he founded a silver market in Yokohama in February 1779, released some of the government's silver holdings to the market and established the Yokohama Specie Bank in February 1780 with the aim of lowering the

price of silver. But the result was not successful.

Matsukata's proposal was then approved by Premier Sanjo's new cabinet and he took radical measures energetically. According to Matsukata's plan the national budget should have an ample surplus yearly so that the government could decrease the existing notes and partly purchase specie for the reserve of future currency, and secondly a single central bank should be established to supply a sound and uniform currency for the nation. Thus by keeping the government expenditure constant for three years the national treasury bore a surplus of 40.1 million yen of which 13.64 millions of existing notes were set on fire and the rest held as reserve. By encouraging export, with new consulates established abroad and with finance facilitated by documentary drafts etc., the government's silver holding increased to 42 million yen. The circulation of notes decreased to 88 million yen less than the end of 1881, and the percentage of specie reserve rose from 8% to 35% in four years.

Then on the establishment of the Bank of Japan (Nippon Ginko) in October 1882, half of the capital of 10 million yen was contributed by the government. Though the Bank opened the door, the Bank of Japan notes were not issued up to May 9, 1885 in order to make sure of its convertibility and its business was limited mostly to that of government's fiscal agent. The Act of Convertible Bank Notes was promulgated in May 1884. The notes were promised to be made payable in silver on demand and the Bank of Japan had to hold an "adequate quantity of silver" for the notes issued. From January 1885 the replacement of the circulating currency notes by this note began. In July 1888 the article relating to the above reserve was revised to the effect that the Bank should hold the equivalent amount of gold and silver in coins and bullion for the amount exceeding 70 million yen, for which the Bank could issue notes with governments bonds, treasury bills, commercial bills, etc. as reserves. However, the Bank was permitted to issue notes up to 5 millions for a start in July, which was enlarged step by step up to the above amount. This legal limit of fiduciary issue was extended to 85 million yen two years later and continued to March 1889. The further extension will be elucidated in the later chapters.

On the other hand, existing national banks by losing the priviledge of issue after the expiration of 20 years from the date of their charter had to

be gradually reorganized into ordinary deposit bank. Also the circulation of existing currency notes issued by the government was prohibited from the biginning of 1900 and had to be exchanged for new bank notes by the end of 1905. The Bank Act (銀行条例) was enacted in 1890 and had been put in force in order to regulate the business of increasing private banks and of deposit banks reorganized from national banks. Among the former the Mitsui bank founded in 1876 with a capital of 2 million yen and the Yasuda bank in 1880 with 0.2 million yen capital were the most influential. 122 out of 153 national banks were converted into deposit banks with their names unchanged, as the 1st national bank to the 1st bank which has been existing up to this time. Among Big Fives the Mitsubishi bank and Sumitomo bank came into existence a little later in 1895. The clearing system was established in Osaka in 1879 and in Tokyo in 1886.

As Finance Minister, Matsukata directed the Japanese financial policy for 13 years during the period from 1881 to 1900. He became the Prime Minister in the end. When the Bank of Japan was established he appointed as directors R. Minomura representing the Mitsuis and Z. Yasuda who was the Head of the Yasuda bank. K. Kawada, Y. Iwasaki and T. Yamamoto all of whom belonged to the Mitsubishi group became presidents of the Bank successively from 1896—1907. Thus Zaibatsus had a rather intimate relation

Table V. Rates of Exchanges 1886–97.

	Sight bill on London		Sight bill on N. Y.	
	Highest	Lowest	Highest	Lowest
1886	3/4.06	3/0.13	$81.43	$73.31
87	3/3.80	3/1.32	79.68	74.86
88	3/1.58	3/0.05	75.15	73.09
89	3/2.52	3/0.36	78.22	73.72
90	3/8.60	3/1.10	91.12	75.25
91	3/5.19	3/1.32	83.39	75.40
92	3/0.51	2/8.64	73.76	65.99
93	2/8.72	2/3.87	66.46	55.83
94	2/3.09	1/11.86	54.18	48.17
95	2/2.51	1/11.31	53.77	47.13
96	2/2.69	2/1.19	54.25	50.90
97	2/1.45	1/11.89	51.20	48.47

with the Bank of Japan changing positions among themselves according to the political change.

As soon as the convertibility of notes into silver began, the agio between silver and paper disappeared.   Nevertheless, the rate of exchange against gold standard countries was not stable even after, because the price of silver against gold kept declining.   The rates of exchange during this period are shown in the Table V.

As foreign trade expanded, the instability of the exchange rates was undoubtedly harmful to the nation.   The adoption of a more solid monetary basis was now quesion of timing and for Matsukata the next task was to realize the gold standard system as the last step.

In 1893 a committee was organized to investigate the monetary system of Japan to inquire (1) the cause and effect of the recent fluctuations of prices of gold and silver, (2) the influence of their fluctuations upon the economy of this country, and (3) the necessity of revising the monetary system of this country due to these fluctuations and if revision was necessary which system and what measures should be taken.   In the explanation given by the Minister are the following : " Today in this country only silver coins circulate.   The effect of the changes of gold and silver prices upon the economy and finance is enormous.   Moreover since the sharp decline of silver prices due to the Indian currency reform the prospects for the future of economy are in confusion and those engaged in trade and industry are in extreme fear as how to manage themselves······"

The remarkable decline of silver prices after 1890 was attributed to the successive abandonment of the silver standard in many countries.   The powerful support of the U. S. was lost by its abolishment of the Sherman Silver Purchase Act and the adoption of the gold standard in 1900.   Clearly the trend of the world moved towards a gold standard.   However the majority of opinions of the above committee still " believed that the endless fall of the silver price in the future would be impossible and comparing the effects of the changes of the gold-silver ratio upon the country with those of a gold standard country we judge our advantage to be greater, and our disadvantage far smaller than gold standard countries."   Hence some of them were of the opinion that it was better to participate in the international double standard union upon its formation persuading western countries to form it, and others

asserted it was best to prolong the decision until the western countries definitely reached some solution. However, when some members were added to the special committee and their answers for the necessity of revising the present silver standard were asked, 8 out of 15 answered in the affirmative, out of which, 6 votes (Yoshiro Sakatani, Juichi Soeda, Koki Watanabe, Jun Kawashima, Ryoichi Kurihara, Takashi Masuda) were for the gold standard, while the remaining two (Heigoro Shoda, and Ukichi Taguchi) were for the double standard. So the direction of the monetary reform was decided with a bare majority for the gold standard.

5

The new Monetary Act (貨幣法) was promulgated in Mach 1897. Article 2 states " The unit of price is 750 miligram ($\frac{2}{10}$ Momme) of fine gold which is called Yen." Three kinds of gold coins, ¥20, ¥10, and ¥5, were qualified as unlimited legal money. A 5 yen gold coin weighed 4.1666 gram of $\frac{900}{1000}$ gold, that is 1 momme or 3750 miligram of fine gold. 3 kinds of silver coins and 3 kinds of copper coins were struck out as subsidiary money. It is remarkable that the new one yen gold coin represented exactly the half of the weight and fineness of the one yen defined by the old coinage act of 1871, as it was 0.8333 gram against the old of 1.6666 gram of the same fineness. And in reality, during the period from 1871 to 1897 the market value of gold had risen almost exactly to two times the value of silver, as Matsukata explained in the parliament as follows :

" As it is most important at the revision of a monetary system to take note of causing no changes in the existing conditions of prices, of liabilities and of tax burdens, we are going most carefully to fix the value of new gold coins exactly equivalent to that of the one yen silver coin now in circulation. As to the method of deciding the present real value, we have come to the conclusion that it is best to depend upon the latest rate. Any method of averaging would not only be difficult under the sharp changing state, but also would not express the real value at present. Moreover, the value of gold should be calculated a little higher than actual, as it will rise more or less when the adoption of the gold standard system materializes. In view of the average silver bullion price quoted in London being a little less than 32 silver against 1 gold, it should be fixed at 1 to 32 plus α. Then the price of the

old one yen gold coin would be calculated just twice as high as the new one yen gold coin, (the old parity was 1 to 16.17.), then it would also be very convenient for the mixed circulation of both old and new coins."

Thus the new monetary act was put in force on Oct. 1, 1897 (30th of Meiji) and at the same time the Convertible Bank Notes Act was revised to make the Bank of Japan notes convertible into gold instead of silver. Worth mentioning is that, to the gold reserve for convertibility in the Bank of Japan was contributed the Reparation fund (230 million Tael) paid by the Chinese government after the Chino-Japanese war 1894—95, which was repayable in London in gold without which the revision would have been nearly hopeless.

Thus it took about 26 years or Japan from the first legislation of the nominal gold standard of 1871 down to 1897 when Japan really changed to the gold standard system to assimilate herself with the international gold standard. According to the Act, the limit of the fiduciary issue was fixed at 85 million yen as before consisting of national bonds, commercial bills and others prescribed by the Act. Again, the specie reserve was allowed to contain silver in coins and bullion up to one fourth of the total. But the limit of the fiduciary issue was expanded very soon to 120 million yen by the revision of the Act two years later. Besides there was a regulation for the so-called "excess issue" (excessive fiduciary issue) which had been in force already since 1872, namely "When the Bank of Japan finds it necessary to increase the circulating currency according to the change of market conditions, it can issue notes by permission of the Minister of Finance backed by government bonds, public debts, ministry of finance notes or other gilt-edged securities or by commercial bills as security. In this case the tax not less than 5 percent per annum, the percentage of which is to be decided by the Minister of Finance on each occasion, should be paid for the amount in excess." This form of the gold standard system was apparently taken after the model of the Bank of England.

In this form the Japanese gold standard system was maintained hereafter for 20 years to 1914, when the first world war broke out. We will show below on Table VI the amount of bank notes in circulation, specie reserve, index numbers of prices, the rates of exchange on London and New York during this period. For reference purpose three other Tables are added.

During this period Japan waged war three times at intervals of 10 years.

Table VI. Convertible Bank Notes and their Value during the Gold Standard System.

	Amount of bank notes issued at the end of the year	Percentage of specie reserve holding	Index number of wholesale prices	Rates of exchange on London par $¥1=2/0\frac{9}{16}$		Rates of exchange on N. Y. par $¥100=\$49.85$	
				highest	lowest	highest	lowest
1897	226,229	43.4	95.0				
1898	197,400	45.4	89.0	2/0.42	2/0.16	49.45	48.82
1899	250,562	44.0	104.0	2/0.8	2/0·4	50.00	49.47
1900	228,570	29.5	100.0	2/0.4	2/0.3	49.51	49.25
1901	214,097	33.2	94.8	2/0.5	2/0.3	49.74	49.25
1902	232,094	47.0	99.8	2/0.8	2/0.3	50.13	49.50
1903	232,921	50.2	103.0	2/0.7	2/0.4	50.01	49.35
1904	286,626	29.2	112.2	2/0.4	2/0.1	49.42	48.76
1905	312,791	37.0	119.1	2/0.6	2/0.3	49.80	49.25
1906	341,766	43.1	124.2	2/0.5	2/0.4	49.63	49.38
1907	369,984	43.7	131.3	2/0.5	2/0.4	49.75	49.38
1908	352,734	48.1	118.5	2/0.5	2/0.4	49.57	49.42
1909	352,763	54.2	117.3	2/0.6	2/0.5	49.75	49.57
1910	401,625	55.4	122.6	2/0.4	2/0.4	49.64	49.42
1911	433,399	52.9	127.2	2/0.5	2/0.4	49.50	40.44
1912	448,922	55.0	134.8	2/0.6	2/0.4	49.73	49.48
1913	426,388	52.5	131.3	2/0.9	2/0.3	49.74	49.33
1914	385,589	56.6	119.8	2/0.4	2/0.1	49.63	49.13
1915	430,138	57.6	141.8	2/1.3	2/0.2	49.66	48.62
1916	601,224	68.2	172.4	2/1.6	2/0.2	50.50	49.88
1917	831,371	78.0	217.0	2/1.8	2/1.6	51.00	50.50

The military expenditure of Chino-Japanese war 1894—95 amounted to about 200 million yen and that of Russo-Japanese war 1904—5 about 1,716 million yen and of the latter nearly a half of that sum had to be borrowed from London and New York. Between these two wars, banks furnishing long-term credit by issuing bank debentures were established, Japan Industrial Bank (Nippon Kogyo Ginko) in 1900 and Japan Hypothetic Bank (Nippon Kangyo Ginko) in 1897. The spinning industry with the production of only 12 thousand bales in 1883 increased to 105 thousand bales in 1893, but after the Chino-Japanese war the production jamped up to 511 thousand bales in 1897 and the export of cotton yarn increased from 31 bales in 1890 to 140 thousand bales in 1897. Russo-Japanese war acted as another incentive to the industry in general and ship-building and steel industry began to rise, though heavy

Table VII.   Currency in Circulation

	Metallic currency				Paper currency			
	Gold coins	1 yen silver coins	Auxiliary silver coins	Copper coins	Government currency notes	National Bank notes	Convertible Bank notes	Specie reserve
1868	0	0	0	0	24,037	0	0	0
1869	0	0	0	0	50,091	0	0	0
1870	0	0	0	0	55,500	0	0	0
1871	2,667	2,740	1,409	5,625	60,272	0	0	0
1872	26,161	3,663	3,859	5,625	68,400	0	0	0
1873	43,551	3,663	7,597	5,634	78,381	1,362	0	0
1874	39,712	4,572	8,765	6,060	91,902	1,995	0	0
1875	32,317	4,478	9,610	6,934	99,072	1,420	0	0
1876	29,840	6,140	12,868	7,952	105,148	1,744	0	0
1877	25,741	5,869	15,547	9,034	105,797	13,353	0	0
1878	23,227	6,423	16,913	9,734	139,419	26,279	0	0
1879	19,823	7,384	14,159	10,192	130,309	34,046	0	0
1880	14,929	9,443	9,589	10,665	124,940	34,426	0	0
1881	13,697	9,368	8,136	11,241	118,905	34,397	0	0
1882	13,049	13,843	7,499	12,231	109,369	34,385	0	0
1883	12,655	17,196	7,301	13,199	97,999	34,276	0	0
1884	11,998	20,138	7,263	14,183	93,380	31,016	0	0
1885	12,555	22,414	9,253	14,756	88,345	30,155	3,956	3,311
1886	13,288	24,087	9,253	15,078	67,801	29,501	39,550	23,622
1887	14,111	22,015	11,245	14,913	55,815	28,604	53,455	30,997
1888	14,689	26,180	11,983	14,799	46,735	27,680	65,771	30,316
1889	16,356	31,674	12,195	12,044	40,913	26,739	79,109	31,836
1890	16,272	27,362	12,193	11,461	33,273	25,811	102,932	27,297
1891	17,208	35,383	13,193	10,493	27,888	24,870	115,735	38,094
1892	12,310	46,922	14,302	10,162	20,828	23,891	125,843	42,144
1893	12,237	52,124	16,189	9,922	16,407	22,756	148,663	44,898
1894	11,957	46,292	18,171	9,674	13,405	21,782	149,814	29,216
1895	12,255	47,192	20,752	9,606	11,129	20,797	180,337	25,951
1896	12,811	50,978	23,229	9,379	9,376	16,498	198,314	26,353
1897	79,900	31,049	29,356	9,351	7,451	5,025	226,229	64,673
1898	83,689	0	45,814	9,339	5,412	1,867	197,400	65,513

and chemical industries developed at length highly after the first world war 1814—18.

For two decades of this "classical" gold standard system, the rates of foreign exchange were characteristically stable and the notes circulation as well

Table VIII. Development of Banks*

	National Banks				Deposit Banks				
	No. of Banks	Bank notes	Deposits	Loans & Advances	No. of Banks	Paid in Capital	Deposits	Loans Advances	Invest-ments
1883	141	34,276	23,491	42,485					
1884	140	31,016	22,056	45,954					
1885	139	30,155	26,488	43,194					
1886	136	29,501	31,133	45,424					
1887	136	28,604	31,711	55,168					
1888	135	27,680	33,527	59,405					
1889	134	26,739	33,882	68,239					
1890	134	25,811	32,308	71,697					
1891	134	24,870	38,746	76,173					
1892	133	23,891	48,246	64,906					
1893	133	22,756	59,834	80,014	545	30,583	38,426	49,083	12,905
1894	133	21,782	66,977	86,152	700	37,380	49,196	59,173	16,577
1895	133	20,797	75,000	91,898	792	49,807	84,252	89,165	20,597
1896	121	16,498	61,825	105,720	1005	87,899	141,937	157,200	32,565
1897	58	5,025	27,767	28,764	1223	147,812	207,741	241,900	59,245
1898	4	1,867	867	607	1444	189,439	287,045	438,100	93,466
1899					1561	209,973	392,256	581,036	97,119
1900					1802	239,364	436,779	661,974	102,365
1901					1867	251,700	450,186	635,107	109,057
1902					1841	258,111	536,702	697,552	116,494
1903					1754	253,003	566,227	725,355	114,999
1904					1708	248,776	605,316	733,145	149,646
1905					1697	252,697	692,520	796,432	161,104
1906					1670	256,523	1,033,762	1,111,765	175,560
1907					1658	286,314	944,295	1,113,162	175,445
1908					1635	295,549	938,072	1,098,149	193,601
1910					1617	311,354	1,054,413	1,123,377	247,425
1914					1593	401,200	1,519,760	1,726,850	265,295

as price indices moved up and down.   With the only exception of 1903, notes were constantly " issued in excess " but the proportion of specie reserve was higher than 40% on the average, though the system was not a proportional reserve system.   The remarkable rise of exchange rate on London after 1915 was caused by the increased imports of England for military goods, thus the balance of trade became unfavorable against England while the shipment of gold was checked by the danger on the sea.   However, prior to the rise, by

Table IX.　Foreign Trade during the Meiji Era.　　　(1000 yen)

	Total of Export	Total of Import	Surplus		Total of Export	Total of Import	Surplus
1868	15,553	10,693	+ 4,860	1890	56,604	81,729	− 25,125
1869	12,909	20,784	− 7,875	1891	79,527	62,927	+ 16,600
1870	14,543	33,742	− 19,199	1892	91,103	71,326	+ 19,777
1871	17,969	21,917	− 3,948	1893	89,713	88,257	+ 1,456
1872	17,026	26,175	− 9,148	1894	113,246	117,482	− 4,236
1873	21,635	28,107	− 6,472	1895	136,112	129,261	+ 6,852
1874	19,317	23,462	− 4,145	1896	117,843	171,674	− 53,832
1875	18,611	29,976	− 11,365	1897	163,135	219,301	− 56,165
1876	27,712	23,965	+ 3,747	1898	165,754	277,508	−111,748
1877	23,349	27,421	− 4,072	1899	229,497	243,332	− 13,835
1878	25,988	32,875	− 6,887	1900	220,134	326,929	−106,795
1879	28,176	32,953	− 4,777	1901	274,807	295,044	− 20,238
1880	28,395	36,627	− 8,231	1902	285,094	300,938	− 15,845
1881	31,059	31,191	− 132	1903	315,238	332,404	− 17,165
1882	37,722	29,447	+ 8,275	1904	342,078	384,391	− 42,313
1883	36,268	28,445	+ 7,823	1905	345,738	500,029	−154,292
1884	33,871	29,673	+ 4,199	1906	454,103	465,107	− 11,003
1885	37,147	29,357	+ 7,790	1907	463,363	515,286	− 51,923
1886	48,876	32,168	+ 16,708	1908	408,302	464,279	− 55,976
1887	52,408	44,304	+ 8,103	1909	443,672	416,257	+ 27,415
1888	65,706	65,455	+ 250	1910	495,029	508,379	− 13,348
1889	70,061	66,104	+ 2,957	1911	485,458	572,021	− 86,563

the withdrawal of short term capital back to London the exchange rate of the yen dropped for a while.　During the 1st World War Japan accumulated much gold in London.　Between London and New York, the dollar was stronger, and the rate of the English pound declined.　Nevertheless as the pound rate was not cut down, the dollar rate against the yen had to rise without reason, and for some time in 1915, yen went down even below the gold export point which had to be checked by the gold shipment from Japan to the U. S. A. At last America's gold embargo raised the dollar rate against the yen over the gold import point, as high as 52 dollars and more in 1918.

England stopped the gold standard in April 1919.　But as the shipment of gold was neither possible nor done, de facto abandonment had been done

* M. Fujita, The Banking System in the middle Meiji Era (1870–1910) Kobe Economic and Business Review. 3. 1956.

earlier. On the contrary, the United States which stopped it in September 1917 returned again to the gold standard in June 1919 shortly before the conclusion of the peace treaty, two months after the English abandonment. Thus the pound and dollar changed positions in world economy and New York appeared clearly on the horizon as the world money market. (To be continued)

FUNDAMENTAL FEATURES OF THE ACCUMULATION OF CAPITAL IN THE LATE MEIJI ERA

Masahiro FUJITA

(I)

So far from our analysis of the history of Japan's monetary and banking system in the Meiji Era, we have seen a parallel relation between the development of Japanese capitalism and the expansion of the monetary and banking system.

Although the general trend of our banking circles during the latter four-five years of the Meiji Era clearly had the fundamental feature as mentioned above, the financial process of this period, namely the proper character of our national economy and actual or real situations which the creation and formation of our capitalism derived from this character, lagged far behind the advanced Western countries. By means of stage divisions we can summarize the history of money and banking in the Meiji Era as follows :—

(1) The first period. (1868—1873)

This period is styled " Exchange Firms (Kawase Kaisha) days." Kawase-Kaisha was the only financial institution under government protection, other institutions were negligible, for example, excluding agent financing and self-financing there were mutual financing associations (Tanomoshi-ko), mutual loan businesses (Mujin), pawnbroking (Shichiya) and usury.

(2) The second period (1873—1876)

This period is called " the establishment of national bank days." In other

words, this period formed the basis of Western style banking.

(3)   The third period (1876—1882)

The national bank attained the highest stage of prosperity from an amendment of the national bank regulation to the establishment of the Bank of Japan.—— the height of prosperity of the national bank.

(4)   The fourth period (1882—1885)

This period was characterized as " the establishment of the Bank of Japan days," for the Bank of Japan as the only central issue bank opened business in 1885, but, on the other hand many national banks gradually changed into pure private banks. These days were, so to speak, an introduction to the formation of Japanese capitalism from the financial aspects viewpoint.

(5)   The fifth period (1885—1894) —— from the beginning of the circulation of bank-notes (Bank of Japan) to the outbreak of the Sino-Japanese War. The feature of this period consists of " the exclusive right days of the Bank of Japan."

(6)   The sixth period (1894—1904) —— from the end of the Sino-Japanese War to the sudden outbreak of the Russo-Japanese War. In those days, our government established successively special banks —— the Hypothec Bank of Japan, the Industrial Bank of Japan, the Hokkaido Colonial Bank, etc.

(7)   The seventh period (1904—1912) —— from the Russo-Japanese War to the end of the Meiji Era. We can call this " the prosperity period of ordinary deposit banks."

Thus, the rapid development in our financial circles after the Meiji Restoration was supported by " Banks " which became the pivot of the Western form or type of financial operation.

Since the establishment of the Daiichi bank in 1873 as the first bank of our country, the number of banks reached 2,100 after forty years (1873—1912). Morever, the total deposits of these banks amounted to 1,900 million yen. In this case, we must especially observe the relative relation between the development of our financial circles and the monetary and banking policy of our government. The fundamental trend of the monetary and banking policy after the Meiji Restoration was based on an inconsistent policy of protection and interference in banking. These conditions show the unavoidable circumstances of the Meiji Government policy which aimed at the realization of the production industry and took measures calculated to enrich and strengthen

their own country.

However, we can simultaneously find a remarkable tendency of the government making a preferentially reverse use of its protection policy toward banks intending to utilize or avail themselves of these financial organs. Such a conspicuous inter-dependent relation between official authorities and private fields has dominated our financial circles as a motive power for a long time. And, such circumstances, invited serious disaster to our financial circle or economic and banking system, but there was no gainsaying this destiny (that is the above-mentioned fact).

(II)

When we start to theoretically analyse actual stutations of the accumulation of capital in the Meiji Era, we shall study the financial aspects of the accumulation of capital. We consider that Japanese capitalism was established ultimately during and after the Sino-Japanese War. This is shown clearly by the following description, namely, in the spinning industry which is thought of as one of the prerequisities for the establishment of industrial capital and which represents the growth of cotton yarn (the export of cotton yarn exceeds its import). The other indicator of the establishment of Japanese capitalism

Table 1. Development of cotton yarn

(1) Unit : Thousand spindle
(2)—(4) Unit : Thousand bale

Year	Number of factory	Number of spindle	Amount of domestic production(2)	Import(3)	Export(4)
1877	—	8	2	50	—
1887	19	76	23	110	—
1889	28	215	67	142	0.031
1890	30	277	104	106	0.108
1891	36	353	144	57	0.109
1892	39	385	204	81	1.000
1893	40	381	214	64	11.00
1895	47	580	366	48	11.00
1897	74	970	511	53	140
1899	83	1,189	757	27	341
1902	80	1,246	770	8	197
1903	76	1,381	801	3	307

is the foundation of the Yahata Steel Foundry in 1896. We regard it as the
first establishment of a key-industry in the Japanese national economy.

Entering the late Meiji Era, the so-called concentration and centralization
of capital became a remarkable characteristic of Japanese capitalism. The basic
system was formed after the Russo-Japanese War. In such a case, the indicator
was the rapidly increasing power or tendency of the number of corporations,
and another important indicator was the remakable development of the electric
industry.

Table 2. Change of cotton yarn

Year	Number of corporations	Number of factory	Capital (Thousand yen)	Working spindle (Thousand spindle)	Number of worker (Thousand)	Products (Thousand bale)	Export (Thousand bale)
1903	51	76	34,400	1,290	73	800	310
1904	49	74	34,700	1,310	62	700	260
1905	49	78	36,990	1,400	71	910	270
1906	47	83	40,610	1,440	76	950	270
1907	42	83	55,280	1,500	79	980	230
1908	36	86	52,420	1,400	74	880	170
1909	31	88	57,980	1,830	83	1,030	260
1910	36	92	59,320	1,390	93	1,130	250
1911	34	90	61,690	1,900	92	1,130	290
1912	41	93	66,160	2,210	99	1,350	370

The change in composition of the manufacturing industry from the view
point of paid-up capital shows the concentration and centralization of the capital
process in our capitalism.

Table 3. The Number and Amount of paid-up Capital Corporations

Year	Less than 100	100–500	500–1,000	1,000–5,000	More than 5,000	Total
1905	132,832	190,058	99,473	201,083	353,437	975,837
(%)	(13.61)	(19.38)	(10.19)	(20.60)	(36.22)	(100.00)
1910	170,781	261,291	162,189	317,392	362,748	1481,401
(%)	(11.51)	(18.11)	(10.95)	(21.42)	(37.99)	(100.00)
1910	206.779	332,024	195,904	493,450	735,075	1983,232
(%)	(10.43)	(16.74)	(9.88)	(24.88)	(38.07)	(100.00)

(Unit : Thousand yen)

Table 4.   The Change by the Classification of Manufacturing Industry
(Paid-up Capital   Unit : Thousand yen)

Year	Spinning	Machine	Ceramic	Chemical	Printing	Electric	Others	Total
1904	53,872	14,706	6,217	16,856	1,893	20,521	25,689	139,756
(%)	(38.5)	(10.5)	(4.4)	(12.1)	(1.4)	(14.7)	(18.5)	(100.0)
1914	135,623	43,840	21,016	70,603	4,785	247,634	112,000	662,510
(%)	(20.4)	(6.6)	(3.2)	(10.7)	(0.7)	(41.5)	(16.9)	(100.0)

And, the establishment of our *industrial capitalism* strenghthened the close relations between *industrial capital* and *banking capital*. During the late Meiji period the following statistics can be shown of the financial and the production operations.

Table 5.   The Expansion of our Industry 1887–1907

Year	Production of Cotton	Export of Cotton Yarn		Export of Cotton Stuff	Production of Steel	Production of Coal
		Total	For China			
1887	(thousand bal) 23	(million yen) —	—	—	15	1,746
1897	511	13	9	2	26	3,230
1907	982	30	25	22	52	13,804

(Unit of Steel and Coal : Thousand France ton.)

Thus the wonderful or splendid development of national economy was reflected clearly on the productive national income.

Table 6.   Productive National Income   (Unit : Million yen.)

Year	Agricultural and Forestry Industry		Fisheries		Mining Industry		Manufacturing Industry				Other In-dustry	Total
	amount of pro-duction	amount of income	pro-duct	in-come	pro-duct	in-come	factory industry		house industry			
							pro-duct	in-come	pro-duct	in-come		
1875	308	236					20	8	40	24	272	540
1876	266	196					21	8	42	25	301	530
1877	253	206					21	8	42	25	290	509
average 1978–1882	276	206					21	8	42	25	288	527
average 1883–1887	342	276					80	32	160	96	322	726
average 1888–1892	324	267					103	41	180	108	412	828
average	500	415					169	68	254	153	529	1,165

Year	Agricultural and Forestry Industry		Fisheries		Mining Industry		Manufacturing Industry				Other In-dustry	Total
							factory industry		house industry			
	amount of pro-duction	amount of income	pro-duct	in-come	pro-duct	in-come	pro-duct	in-come	pro-duct	in-come		
1893–1897 average	657	571					318	127	380	228	740	1,666
1898	954	817			41	33	465	186	457	274	923	2,233
1899	814	694			45	35	563	225	532	319	946	2,219
1900	999	853			49	39	602	241	606	333	1,053	2,519
1901	1,066	924			57	46	567	227	585	322	1,078	2,597
1902	954	848			56	45	554	221	565	311	1,099	2,524
1903	1,223	1,027	73	40	57	46	568	227	544	299	936	2,575
1904	1,285	1,073	79	43	58	46	594	238	524	288	924	2,612
1905	1,057	842	96	51	78	62	739	296	503	277	982	2,510
1906	1,332	1,062	106	57	107	86	867	347	540	297	1,121	2,570
1907	1,603	1,300	118	64	111	89	941	376	577	317	1,190	3,336
1908	1,579	1,276	119	65	105	84	875	350	615	338	1,294	3,407
1909	1,385	1,094	123	68	103	82	947	379	652	359	1,323	3,305
1910	1,303	1,028	136	76	100	80	1,048	419	689	379	1,351	3,333
1911	1,741	1,403	144	81	106	85	1,309	524	743	409	1,382	3,884
1912	2,043	1,702	159	88	130	104	1,555	622	797	448	1,544	4,508

Then, this productive national income was dealt with as follows:

Table 7. Distributive National Income   (Unit: Million yen.)

Year	Assessable income	Non-assessable income	Total	Government income
1898	185	1,099	1,284	16
1899	306	1,199	1,505	22
1900	392	1,647	2,039	25
1901	431	1,696	2,127	28
1902	474	1,702	2,176	28
1903	521	2,098	2,619	28
1904	558	2,055	2,613	35
1905	616	2,046	2,665	48
1906	681	2,117	2,798	63
1907	739	2,189	2,928	75
1908	888	2,281	3,169	90
1909	915	2,263	3,178	96
1910	907	2,518	3,425	73
1911	956	2,567	3,523	61
1912	1,056	2,739	3,795	90

Still, for the sake of this analysis the expenditure national income must be shown of the accumulation of capital in those days.

Table 8. Expenditnre National Income   (Unit : Million yen)

Year	Con-sumption (exclude overseas consume)	Saving				Internal Reserve	Tax	Gross Total
		Individaul Saving	Individual Securities Investment	Total	Holding of Cash (exclude bank)			
1898	1,099	43	73	116	19		123	1,357
1899	1,154	25	7	32	△1		137	1,322
1900	1,255	44	69	113	18		156	1,542
1901	1,668	111	67	178	△5		168	2,009
1902	1,824	△29	56	17	2		155	2,008
1903	1,850	40	27	67	△2		180	2,095
1904	2,281	△64	193	129	144		182	2,736
1905	2,258	177	366	543	55		230	3,093
1906	2,280	305	1	306	152	15	255	2,993
1907	2,358	50	106	156	△46	19	286	2,754
1908	2,491	45	52	97	△59	20	313	2,842
1909	2,670	133	349	482	47	8	328	3,527
1910	2,660	141	△116	25	67	11	325	3,073
1911	2,999	124	114	318	67	20	342	3,726
1912	3,096	145	218	363	33	32	361	3,854

On examination of the accumulation of capital in the late Meiji Era, we regard as indicator the following monetary factor, that is the form of saving and investment. This is an important significance as the source of the concentration and centralization of capital and fund. The following table represents fluently the remarkable characteristics of the accumulation of capital of the late Meiji Era.

Table 9. The Characteristies of the accumulation of capital   (Unit : Million yen)

Year	1. Deposit			2. In-surance	Total	3. Currency and deposit			
	bank deposit	postal deposit	coopera-tive societies deposit	life in-surance reserve		cash (holding)	current deposit	trasfer saving	Total
1893		2		1	3	22			22
1894	8	—		1	9	9	7		16
1895	26	3		1	26	34	17		51

Year	1. Deposit			2. Insurance	Total	3. Currency and deposit			
	bank deposit	postal deposit	cooperative societies deposit	life insurance reserve		cash (holding)	current deposit	transfer saving	Total
1896	43	—		1	44	18	17		35
1897	69	△2		1	68	30	33		63
1898	45	△4		2	43	△23	42		19
1899	22	1		2	25	△53	52		△1
1900	40	1		3	44	9	9		18
1901	106	3		2	111	△10	5		△5
1902	△32	2		1	△29	△33	35		2
1903	34	3		3	40	△13	11		△2
1904	△74	7	—	3	△64	111	33		144
1905	160	14	—	3	177	13	42		55
1906	279	20	1	5	305	4	148		152
1907	22	19	2	7	50	41	△88	1	△46
1908	23	14	1	7	45	△26	△34	1	△59
1909	105	18	2	8	133	△19	63	3	47
1910	80	38	4	9	141	27	37	3	67
1911	84	23	5	12	124	24	44	△1	67
1912	125	13	6	1	145	△17	△17	1	△33

Year	4. Security investment					
	government and local bond	debenture	shares	total	holding of financial institution and security advance	balanced private security investment increase
1893	△6			△6		△6
1894	△1			△1	1	△2
1895	90			90	19	71
1896	31			31	36	△5
1897	36		124	160	44	116
1898	15		79	94	21	73
1899	△2		56	54	47	7
1900	15		80	95	26	69
1901	19		49	68	1	67
1902	40		43	83	27	56
1903	25		2	27	—	27
1904	211		39	250	57	193
1905	374		30	404	38	366
1906	40		81	121	120	1
1907	47		31	78	△28	106

| Year | 4. Security investment | | | | | |
	government and local bond	debenture	shares	total	holding of financial institution and security advance	balanced private security investment increase
1908	38		67	105	53	52
1909	427	19	87	533	184	349
1910	△212	62	120	△30	86	△116
1911	59	76	104	239	45	194
1912	△7	75	186	254	36	218

| Year | 5. Internal reserve | | | | | 6. Overseas investment |
	profit	dividevd	loss	corporation tax	internal reserve	balance of international balance of payments
1904						153
1905						643
1906	153	101	28	9	15	△156
1907	141	88	26	8	19	44
1908	146	90	27	9	20	37
1909	139	98	25	8	8	17
1910	132	99	24	8	1	178
1911	164	104	30	10	20	106
1912	199	119	36	12	32	33

Under such circumstances, the accumulation of capital was directed mainly for the concentration and centralization of funds to banks and other financial institutions.

Table 10. The concentration of banks (Unit: Million yen)

Year	Big five		State financial institution		Total		Private banks (exclusive Big five)		Gross total	
1893	30	15%	57	30%	87	45%	109	55%	196	100%
1901	120	11%	202	19%	322	30%	727	70%	1,049	100%
1910	312	12%	691	26%	1,003	38%	1,638	62%	2,641	100%
1919	1,629	14%	3,108	26%	4,737	40%	7,084	60%	1,821	100%

Cf. 1893 just before the Sino-Japanese war.
1901 the peak period of the increasing number of banks.
1910 the year of the formation of syndicate groups (undertaking of government banks).
1919 World War I ended.

With the progress of the accumulation of capital the weight of the current deposit decreased in comparison with other money-making deposits.

Table 11.   The change of the deposit kind of ordinary bank   (%)

Year	Current deposit	Time deposit and special current deposit	Time deposit proper	Other deposit	Total
1901	38	48	29	14	100
1910	31	59	39	11	100
1914	26	65	49	9	100
1919	22	69	50	9	100

Turning to the point of the special relation between industrial capital and banking capital, we find a rapid trend of centralization and concentration.

Table12.   Concentration and accumulation of industrial capital and banking capital

Year	Paid-up capital of Industrial corporation	Paid-up capital by the bank	Bank deposit
1897	270	206	356
1907	533	444	1,824
1919	3,438	1,257	9,917

Unit: Million yen.

During this period, the means of bank collecting funds were as follows:

1)   The liquidity fund was apt to be lacking in the process of the rapid establishment and expansion of industrial capital, so the possiblity of a liquidity fund flowing into a bank (the greater part of the fund consisted of current deposit) was rare and small.

2)   As the development of *stock capitalism* was backward and the spread-out conditions of direct individual investments for valuable securities were very low, the bank collecting funds as a money-making deposit, (which was a part of the accumulation of money capitalist) was much larger than the amount of fund in a normal development.

3)   In order to attain modernization in a short period, the absorbing of small savings and funds was needed. As a result, a remarkable increase of postal savings was realized.

Table 13.   Sources of concentration fund in financial institutions

Year	Bank self-capital			Bank deposit							
	Paid-up capital	Reserve	Total	Time deposit	Saving deposit	Current deposit	Other deposit	Total	Exclusive deposit of Bank of Japan	Total
1897	206	38	244	77	25	125	129	356	78	278
			(43%)	(22%)	(7%)	(35%)	(36%)	(100%)		(49%)
1907	444	140	584	418	118	377	912	1,825	471	1,354
			(27%)	(23%)	(7%)	(21%)	(49%)	(100%)		(63%)
1919	1,257	371	1,628	4,030	543	1,799	3,550	9,918	1,185	8,733
			(13%)	(41%)	(5%)	(18%)	(36%)	(100%)		(71%)

Year	Bank bonds	Postal saving	Cooperative deposit	Insurance corpotation reserve	Postal life insurance reserve	Gross total
1897	—	26	—	16	—	564 (100%)
1907	74	92	3	47	—	2,154 (100%)
1917	715	698	186	397	9	12,366 (100%)

Unit : Million yen

The early Meiji Era was charcterized by the low level of original accumulations, but the late Meiji Era attained a considerable level through various financial institutions. Above all, in this aspect, the contributions of state financial institutions were remarkable. One of them was the Industrial Bank of Japan.

From the following reasons the ambition for the industrialization of Japan was very strong. That is (a) Japan lacks land to produce enough to feed her immense population, (b) the soil in Japan is very poor in quality and farming does not pay unless drainage and fertilising are used, (c) the Japanese people possess a great aptitude both physical and intellectual for industry, (d) labor is cheap and also motive power, as water power can be harnessed to produce electric current at a low cost, (e) Japan has a market within itself that is capable of large expansion.

In order to accomplish their industrialization as an advanced manufacturing country Japan needed a great deal of capital and funds, but in those days Japan, first of all, had to overcome various obstacles which included the obstructive tactics of the government of the early Meiji Era who in their mistaken idea of barring foreign influence had widely opposed any industrialization with the aid of foreign capital, knowledge and skill. Nevertheless, the Meiji government regarded the import of foreign capital and knowledge and skill as the most effective means for the modernization of this country. The industrial bank was significant as an example of this feeling. The Industrial Bank of Japan (the Nippon Kogyo Ginko) was established in 1900 modelled on the Crédit Moblier de France. This bank opened business in April 1902 and its authorised capital was 50 million yen fully paid up. The government strictly controlled its operation by means of many government regulations ensuring an effective supervision. Their most important business

was the financing of long-term loans (or funds) to various industrial concerns, such loans contained as security the national and local government bonds or debentures and shares of reliable companies, of industrial lands, buildings, factories, ships and railways and other assets. The kinds of industries which this bank financed were mainly fundamental industries, in other words, the shipping, iron and steel, food, engineering and chemical industries, but not cotton. As the cotton industry was controlled by a big enterprise of strong financial power independent of any outside aid, it was omitted from this financial protection. Therefore, most of the industries which obtained financial support from this bank were those initiated by government or particular interests to the government, with the exception of infant industries which were particularly helped by the institution. In the same way as conducted by the Hypothec Bank the necessary funds had been acquired, but of course, the amount of debentures authorized was not to exceed ten times the bank's paid-up capital, provided however, that such debentures did not exceed the amount of outstanding loans, discounted bills, national and local government bonds, company debentures and shares, and gold and silver bullion in hand. Only in the event of funds being required for enterprises of the nature of public utilities undertaken in a foreign country, could the bank issue further debentures, irrespective of the above mentioned restrictions, with the approval of the Minister of Finance. The most important business of this bank was prescribed by the Law of the Industrial Bank of Japan promulgated in 1900, but some of these operations succeeded while some failed due to the needs of the times and the skill of the executives.

It has been said that Japanese industry would not have developed to such an extent in those days unless it had been like the monopolistic service of the type of Crédit Mobilier de France. Under such circumstances there was no prospect of realising a vast profit, but there was all the more when the commercial banks obtained and operated the privilege that the Industrial Bank of Japan had exclusively posseessed. Although its foreign operations brought in a substantial profit, this bank sustained a loss in the beginning of its business. The remarkable characteristic of this bank lay in the fact that a large proportion of the capital was held by foreigners, and this fact distinguished it from other official banks. Above all, the object for the establishment of this bank consisted in importing foreign capital, so from the beginning it directed its efforts to

this end, and during the first eleven years it succeeded in bringing in foreign funds to the extent of 350 million yen for financing Japanese enterprises. Yet, compared with the funds raised inside the country, the foreign capital was negligible : for the bank was able to raise 50 million yen for the Government in 1902, 140 million yen for the municipalities and 135 million yen for the South Manchurian Railway, a state enterprise. But these sums were destined for public undertakings, the funds raised abroad were for private concerns. Moreover, an important function of this bank was overseas investments, in which we may count loans to private enterprises and public utilities in Korea in 1906, another was investments in China. Such connections as were established by the bank through foreign interests proved afterwards the most effective contribution to the development of its foreign business. The first external loan floated by the bank was the 5 per cent in 1908, amounting to £ 2 million. Since then it has played a prominent role in the floating of various loans abroad.

According to a report made public a considerable proportion of the Japanese loans floated in foreign markets from 1902—13 was handled by this establishment : the amount being 57.5 million yen, £ 26,476,440 and 150.88 million French francs. In 1908 an amended law was passed, by which the sphere of business became enlarged and came to include the following : 1) to make loans on pledges of national and local bonds and company debentures and shares, 2) to subscribe for or underwrite national and local bonds and company debentures, 3) to receive deposits of money and accept for custody articles of values, 4) to engage in trust business for mortgage debentures, 5) to discount bills, 6) to engage in the business of bills of exchange and documentary drafts, 7) to make loans on security of foundations created as prescribed by law, 8) make loans on mortgage of ships under construction, loans which shall be redeemable by annual instalments within a period not exceeding fifteen years, or at a fixed time within a period not exceeding five years, 9) to make loans on security of shipbuilding materials or equipment, 10) to subscribe for or take up shares which have been approved by the Minister of Finance concerned, 11) to subscribe for national or local bonds and company debentures, or to act as agent for receiving instalments payable by general subscribers, or for paying principal and interest and dividends, 12) to make call loans for a fixed term on security of sites and buildings belonging to factories, or of residential land

and buildings lying in localities where a city organization law is in force, or of city land to be designated by Imperial Ordinance, provided however that the total amount of such loans shall not exceed two-thirds of the amount of paid-up capital, 13) to purchase national or local bonds or company debentures and shares or gold and silver bullion with available money which the bank may employ for the purpose. As a result, the function of this bank became enlarged, became in fact a sort of hybrid institution. This bank had intended originally and theoretically, to be a Crédit Mobilier, but in practice became a commercial bank.

Now, both the Industrial Bank and the Hypothec Bank of Japan became alike in real estate financing operations, though the former specialized in business connected with industry rather than with agriculture. In general banking operations, particularly in making of loans on negotiable securities, and discounting bills, the Industrial Bank differed little from ordinary commercial banks, and came to trespass even upon the field of debenture trust operations.

Notwithstanding the fact that this bank became a special financial institution with proper and extraordinary kinds of functions it did not prove by any means to be as easy as expected. Then, the more this bank was deprived of its special characteristics, the more difficult it became to conduct successful business. Since opening its business, it had not been easy to make satisfactory showings in the records of its operations. This bank often sustained big losses, such as in connection with its loan to mining interests. And, the difficulty of acquiring low interest bank funds provided a serious obstacle which very much hampered the profitable operation of the bank. Disregarding so-called "big commercial banks" possessing deposits totalling approximately ten times their paid-up capital, this bank because it had a small number of branches had not been able to obtain large deposits and had no alternative but to depend upon the issue of debentures as a source of loanable funds. However, this is worthy of attention regarding the financial conditions of the late Meiji Era. Also, for a long time, the Industrial Bank debentures were not regarded as a very attractive investment, and therefore the issue did not usually prove a success. Under such circumstances, it was natural that the institution should call for a thorough overhauling of its constitution and indeed until 1913 it was continually being reorganized.

Although we have special interest in the importing of foreign capital, this had better be observed in connection with overseas investments. The bank also took an active part in investments in China not only directly but also through the Oriental Industrial Development Company, the Sino-Japanese Industrial Development Company (Chunichi Industrial Development Company) and the Chūka Exchange Bank. One of the most notable investments of the bank was its "political loans" to China in 1918. Loans were also made to Japan's industrial developments in the South Seas. It had also underwriter loans to the Russian and French Governments and also subscribed for shares of

Table 14. The Operation of the Industrial Bank of Japan   Unit: Thousand yen

Year	Official capital	Paid-up capital	Balance of bonds	Trusting money	Doposit	Loan	Contents of loan	
							advance	Discount bill
1902	10,000	2,500	3,048	1	1,108	3,237	3,237	—
1903	10,000	2,500	6,094	9	1,640	4,595	4,595	—
1904	10,000	2,500	9,000	25	1,793	2,628	2,628	—
1905	10,000	5,000	9,909	10	1,436	4,488	2,475	2,012
1906	17,500	13,750	9,756	1	20,312	15,673	12,373	3,300
1907	17,500	16,250	14,379	72	14,884	18,305	13,617	4,688
1908	17,500	16,250	25,087	604	10,072	26,951	24,951	2,000
1909	17,500	16,250	33,990	1,527	8,665	30,961	26,620	4,340
1910	17,500	16,250	37,491	1,580	8,875	29,800	26,233	3,567
1911	17,500	17,500	45,161	3,834	4,780	39,753	23,630	16,122
1912	17,500	17,500	55,517	6,694	3,602	40,037	23,680	16,357

The Gross Capital (power) of the Special Bank

Year	The Hypothec Bank of Japan	The Hokkaido Colonial Bank	The Industrial Bank of Japan
1902	18,266	2,500	6,658
1903	23,449	3,447	10,244
1904	25,399	4,185	13,558
1905	28,941	6,948	16,639
1906	33,334	8,065	44,227
1907	41,006	11,750	46,139
1908	49,273	13,394	52,403
1909	58,451	16,212	60,271
1910	88,567	18,967	64,286
1911	135,303	21,892	69,412

Unit: Thousand yen

the Franco-Japanese Bank and Chūka Exchange Bank when these institutions were established. It featured the trust business and mortgage debentures. Through financial accomodations of the Deposit Bureau of the Ministry of Finance, the bank lent for industrial rehabilitation first aid loans to districts devastated by the great earthquake of 1923.

(III)

The economic effect of the accumulation of capital is the expansion of the economic frontier and the development of productivity. The expansion of productivity by the accumulation of capital must accompany the rise of the living standard, whereas, our living standard is very poor. Since the early Meiji Era, the growth of our national income for the eighty years is about ten-times, but the growth of the living standard is only 2.5 times. In the underdeveloped countries, the rate of accumulation is generally high for the low living standard, and Japan is not an exception either. Therefore, the rate of accumulation of capital in the Meiji Era was favorably high, about 25%. The rate of development of Japan's economy (in the long term) according to the annual rate is about 4%, so the actual living standard ought to be more than twice from the viewpoint of the real national income and should necessarily show ten times the rate of development for the eighty years after the Meiji Restoration.

Table 15.   The Annual Rate of Growth

Year	Real national income (G)	Employed population (P_0)	Gross population (P)	G—P_0	G—P
1903–12 →1908–17	3.5	0.4	1.4	3.1	2.1
1908–17 →1913–22	4.1	0.4	1.3	3.7	2.8
1913–22 →1918–27	5.1	0.7	1.3	4.4	3.9
1918–27 →1923–32	5.5	0.8	1.4	4.7	4.1
1923–32 →1928–37	4.7	0.8	1.5	3.9	3.2

Cf. I owe the main part of this table to Mr. Ryūichiro Ishii's analysis (assitant prof. of Kobe Univ.)

According to another viewpoint, both our production level and consumption level are as follows :—

Table 16. The Annual rate of growth and Production and consumption level

Year	Production level	Annual rate of growth	Consumption level	Annual rate of growth
1888–1892	153	3.2	66	△4.7
1893–1897	170	2.2	59	△2.5
1898–1902	186	1.9	62	1.0
1903–1907	175	△1.2	78	5.2
1908–1912	208	8.3	86	2.0
1913–1917	233	2.4	83	△0.7
1918–1922	297	5.5	82	0.0
1923–1927	360	4.3	115	8.0
1928–1932	402	2.3	145	5.2
1933–1937	475	3.6	159	1.9
1938–1942	543	2.9	139	△2.5

The feature of the late Meiji Era (in the accumulation of capital) can be made clear by adding the data of the accumulation of capital in the Taisho Era and the Post-war Showa Era.

Table 17. The Rate of Saving

Year	Deposit and insurance	Currency and deposit currency	Stock investment	Internal reserve	Total	National income	Rate of saving
1915	151	181	183	33	548	4,233	13.0
1920	517	△147	2,278	△99	2,549	13,154	19.4
1925	1.072	65	660	102	1,899	14,304	13.3
1930	210	△220	387	△97	280	11,245	2.5
1935	1,530	128	818	433	2,909	14,952	19.5

Table 18. The Rate of Money Saving (Converted by Average for the Past Ten Years)

Year	Rate of saving
1903–1912 ∼1908–1917	10.2%
1908–1917 ∼1913–1922	14.7
1913–1922 ∼1918–1927	15.8
1918–1927 ∼1923–1932	12.6
1923–1932 ∼1928–1937	13.5

Table 19. The Accumulation of Capital in the Post-war

Year	Domestic private capital formation (1)	Government investment (2)	Gross domestic capital formation (3)	Gross national products (4)	Rate of accumulation of capital	
					(1)÷(2)	(3)÷(4)
1946	757	298	1,054	4,740	16.0%	22.2%
1947	1,991	1,461	3,452	13,087	15.2	26.4
1948	4,942	2,580	7,522	2,661	18.5	28.2
1949	5,320	2,986	8,306	33,752	15.8	24.6
1950	7,986	1,891	9,877	39,708	20.1	24.9
1951	12,579	4,242	16,821	55,407	22.7	30.4
1952	12,441	4,354	16,795	61,717	20.2	27.2
1953	13,433	6,225	19,658	71,364	18.8	27.5
1954	11,687	5,612	17,299	73,962	15.8	23.4
1955	12,863	6,786	19,649	78,974	16.3	24.9

Unit: One hundred million yen

The rate of accumulation of capital in the United States shows 12.2% (1919—1924), 10.9% (1925—1930), 5.0% (1931—1934), 15.3% (1947—1953) and United Kingdom: 8.1% (1919—1924), 7.6% (1925—1930), 5.0% (1931—1934), 14.1% (1947—1953) and West-Germany 23.2% (1947—1953) and France 20.2% (1947—1953). The recent tendency in the Showa Era of the accumulation of capital is able to be summarized as follows :—

1) The weakness of self-accumulation of enterprise.

2) The huge weight of the financial fund.

3) The expansion of the overloan tendency of banking.

In the late Meiji Era, the following were the types of accumulation of capital.

1) The development type of the steel industry which was back-uped by state capital.

2) The self-expansion process of the cotton yarn.

3) The industrial growth style of the cotton industry and the spinning silk industry.

4) The growth of the heavy chemical industry supported by banking capital.

Besides, the steel industry was based on external capital (its contents is state capital) and rapidly developed.

On the contrary, the spinning industry had grown up on the foundation

of internal accumulation. However, the industry development type through the medium of banking capital lay between the above-mentioned two types, and the introduction of external capital.

Thus, the important part of banking capital is to promote the financial aspect of the accumulation of capital.

SOME ASPECTS OF JAPAN'S TRADE WITH SOUTH AND SOUTH-EAST ASIA, 1950–1957

Fukuo KAWATA

By South and South-East Asia we mean in this article the region including those countries such as India, Pakistan, Ceylon, Portuguese Asia, Afghanistan, Burma, Federation of Malaya, Singapore, Thailand, Indonesia, States of Indochina, the Republic of the Philippines and British Borneo.

In what follows we examine the change which took place in our trade with this region during the 1950-1957 period.

1. Japan's export to South-East Asia amounted to $228 million in 1950. Due to the boom brought about by the outbreak of the Korean War in June, 1950, our export to this area expanded more than twice that of the previous year to $499 million in 1951. But the boom did not last long, and when it was over, the depression set in, and our export began to decline in 1952, dropping down to $387 million in that year. In 1953, our export still continued to decrease, partly because of the slump in this area and partly because of the severe restriction imposed by the sterling area countries. From 1954, our export took an upward turn owing to the gradual recovery of world economy, and to our efforts for export promotion. The amount of our export kept increasing from $448 million in 1954 to $485 million in 1955, to $530 million in 1956 and to $632 million in 1957.

During the 1950-1957 period our export to this region increased by 177%, while our export to the world increased by 248%. Therefore, the relative importance of this area in our total export declined from 28% to 22%.

The amount of our import from this area was $200 million in 1950. Due to the Korean War boom our import also increased more than twice to $422 million in 1951. In 1952, the amount decreased slightly to $417 million, but it again increased to $537 million in 1953, reflecting the economic expansion in Japan. In 1954, the amount of import declined to $459 million by the retrenchment policy of Japan. After 1954, our import from this area increased steadily year after year, reaching $677 million in 1957.

During the 1950-57 period, our import from this area increased by 238%, while our total import gained by 342%. This brought down the share of this area in our total import from 21% to 16%.

During the same period, our total trade (export plus import) with this area increased by 206%, while our total trade with the world expanded by 296%. The share of this area in our total trade fell from 24% to 18%.

The proportion of this region in our export trade was highest in 1951 (37%), and lowest in 1956 (21%), while the ratio of our import from this area was largest in 1953 and in 1955 (22%) and smallest in 1957 (16%).

The total of export to and import from this area in 1950 constituted 24% of our total trade with the world. The percentage rose to 27%, the peak figure during the period, in 1951, but thereafter it remained stable until it fell to 21% in 1956 and to 18% in 1957. (Cf. Table 1)

1. Development of Japan's Trade with South & South-East Asia (in million U.S. dollars)

Year	Total Export (A)	Export to S. E. Asia (B)	$\left(\frac{B}{A}\right)$	Total Import (C)	Import from S. E. Asia (D)	$\left(\frac{D}{C}\right)$	Total Trade (A)+(C)	Total Trade with S. E. Asia (B)+(D)	$\left(\frac{B+D}{A+C}\right)$
1950	820	228	28	969	200	21	1,789	428	24
1951	1,354	499	37	2,044	422	21	33,98	921	27
1952	1,273	389	30	2,028	417	21	3,301	804	24
1953	1,275	329	26	2,410	537	22	3,685	866	24
1954	1,629	448	28	2,399	459	19	4,028	907	23
1955	2,011	485	24	2,471	551	22	4,482	1,036	23
1956	2,501	530	21	3,283	644	20	5,731	1,174	21
1957	2,852	632	22	4,283	677	16	7,135	1,309	18
1950∼57	+248%	+177%	—	+342%	+238%	—	+296%	+206%	—

Source : Ministry of International Trade & Industry, The Present State of Japan's Foreign Trade. (Tsûsyô Hakusyo)
Ministry of Finance, Monthly Return of the Foreign Trade of Japan.

2.   The largest markets of Japan's export in this region were Pakistan, Indonesia, India, Thailand, the Philippines, Singapore and Burma.   In the 1950-1954 period, Pakistan and Indonesia stood at the top, but in the 1955-1957 period India took their place.

The share of the five largest markets in the total export to this area during the 1950-1957 period had a tendency to decrease.   It fell from 80.5% in 1950, to 68.6% in 1957.   This means the increasing diversification of our export market in this area.   (Cf. Table 2)

Table 2. Japan's Export to Selected Countries in South & South-East Asia

(in million U. S. dollars)

Year	Country	Value	Country	Value	Country	Value	Country	Value	Country	Value	Share of the Five Countries (%)
1950	1. Pakistan	55.6	2. Indonesia	46.3	3. Thailand	42.6	4. India	20.3	5. Philippines	18.3	80.5
1951	1. Indonesia	128.4	2. Pakistan	117.0	3. Singapore	56.6	4. India	51.7	5. Thailand	45.2	80.0
1952	1. Pakistan	117.8	2. Indonesia	59.8	3. Singapore	51.5	4. India	36.7	5. Thailand	36.4	78.2
1953	1. Indonesia	105.4	2. Thailand	52.6	3. Burma	33.1	4. Singapore	32.2	5. Philippines	27.5	76.5
1954	1. Indonesia	119.7	2. Thailand	65.1	3. Pakistan	56.0	4. Burma	45.6	5. India	43.9	74.0
1955	1. India	84.7	2. Indonesia	64.7	3. Thailand	63.0	4. Singapore	59.3	5. Philippines	51.8	68.0
1956	1. India	105.2	2. Indonesia	76.0	3. Indochina	65.2	4. Thailand	60.8	5. Philippines	55.5	68.5
1957	1. India	113.3	2. Philippines	89.0	3. Thailand	81.5	4. Burma	75.9	5. Indochina	73.4	68.6

The largest sources of our import from this region were Thailand, Pakistan, Malaya, the Philippines, Indonesia, India and Burma.   In the 1950-1954 period, Thailand and Pakistan occupied the first place, but in the 1955-1957 period, Malaya and the Philippines were at the head of the list.   The share of the five largest sources in the total import from this region decreased from 81.0% in 1950 to 65.9% in 1954, but it took a reverse movement in the 1955-1957 period.   This tells us that the diversification of our sources of import had been going on in the 1950-1954 period, but in the 1955-1957 period this tendency was somewhat changed.   (Cf. Table 3)

Table 3. Japan's Import from Selected Countries in South & South-East Asia

(in million U. S. dollars)

Year	Country	Value	Country	Value	Country	Value	Country	Value	Country	Value	Share of the Five Countries (%)
1950	1. Thailand	43.5	2. Malaya	39.1	3. Pakistan	39.0	4. Philippines	22.5	5. India	17.8	81.0
1951	1. Pakistan	102.5	2. Malaya	58.7	3. Indonesia	54.8	4. India	52.4	5. Thailand	51.0	75.6
1952	1. Pakistan	82.4	2. India	73.0	3. Thailand	62.5	4. Malaya	54.3	5. Philippines	51.2	77.5
1953	1. Pakistan	108.0	2. Thailand	84.7	3. India	75.1	4. Philippines	62.7	5. Malaya	50.4	71.0
1954	1. Thailand	69.2	2. Philippines	67.1	3. Burma	63.1	4. Indonesia	60.2	5. Malaya	56.5	65.9
1955	1. Malaya	92.8	2. Philippines	89.0	3. Indonesia	81.2	4. India	77.3	5. Thailand	63.4	73.2
1956	1. Philippines	116.7	2. Malaya	108.2	3. India	103.4	4. Indonesia	91.4	5. Pakistan	50.6	73.0
1957	1. Malaya	154.2	2. Philippines	113.8	3. India	105.0	4. Indonesia	65.1	5. Pakistan	47.2	71.7

3. Japan's trade balance with this region as a whole was favourable in 1950 and 1951, but in later years it has turned and remained unfavourable. The trade balance ratio was largest in 1953 and smallest in 1954. This ratio indicates the degree of difference between our export and import, by showing our positive balance in plus and our negative balance in minus figures. In the case of zero, it means that our export and import are exactly equal.

From Table. 4, we learn that our trade balance was most adverse in 1953, while, in 1954, the trade gap was smallest. In 1952 and 1957, the degree of imbalance was considerably low.

Table 4. Japan's Balance of Trade with South & South-East Asia (in mllion U. S. dollars)

Year	Total Trade (A)	Balance of Trade (B)	Balance of Trade Ratio (%) (B/A)
1950	427.3	+ 28.1	+ 6.6
1951	921.4	+ 77.2	+ 8.4
1952	803.7	− 30.5	− 3.8
1953	865.4	−208.2	−24.2
1954	907.6	− 10.8	− 1.2
1955	1,035.7	− 66.1	− 6.3
1956	1,174.3	−114.5	− 9.8
1957	1,308.2	− 44.8	− 3.4

As for Japan's trade balances with individual countries in the region we classify the countries in this region into three groups, that is Group A, B and C. To Group A belong those countries with which Japan has positive trade balances throughout the period; and to Group B those countries with which Japan has negative balances all through the period; and to Group C those countries with which Japan has sometimes positive and sometimes negative balances of trade.

Under Group A come Ceylon, Singapore and Afghanistan, and under Group B are counted British Borneo, Portuguese Asia, Malaya and the Philippines, and to Group C belong India, Pakistan, Burma, Thailand, Indochina and Indonesia.

With India and Pakistan, our trade balances are positive for four years, with Indonesia & Indochina for six years, with Thailand for 2 years (19 56 and 1957) and with Burma for only one year (1957). (Cf. Table 5)

Table 5. Japan's Trade Balance Ratio with Individual Countries in South & South-East Asia

(in percentages)

country	1950	1951	1952	1953	1954	1955	1956	1957
Group A								
Ceylon	+95	+84	+77	+78	+74	+77	+77	+59
Singapore	+96	+87	+77	+43	+67	+57	+34	+27
Afghanistan	—	+76	+88	+55	. +33	+39	+91	+90
Group B								
British Borneo	−92	−95	−92	−96	−95	−91	−94	−95
Portuguese Asia	−50	−43	−37	−59	−79	−58	−88	−89 .
Malaya	−80	−67	−43	−75	−72	−75	−75	−80
Philippines	− 4	−15	−45	−39	−37	−25	−36	−12
Group C								
Burma	− 4	−25	−17	−21	−16	− 9	− 8	+51
Thailand	− 1	− 6	−26	−23	− 3	−0.3	+27	+45
India	+ 7	−0.7	−33	−47	− 8	+ 5	+0.9	+ 4
Pakistan	+18	+ 7	+18	−76	+21	− 3	−49	−48
Indochina	+14	+54	+29	−32	− 8	+74	+66	+54
Indonesia	+55	+40	+37	+37	+46	−11	− 9	+ 2

4. Japan's principal exports to this region are such commodities as fabrics of cotton, rayon filament and spun rayon, yarns of cotton, rayon

filament and spun rayon, iron and steel, cement, textile machinery and parts, railway vehicles and parts.

It is a noticeable fact that the shares of fabrics and yarns have been declining, while those of iron and steel, cement, machinery and vehicles have been increasing. In 1950 and 1951, fabrics and yarns took up 60.0% and 52.5% respectively, but in 1955, 1956, 1957, they accounted for only 33.8%, 37.9%, and 32.8%. In contrast to the downward trend of the shares of textiles, the relative importance of iron and steel, machinery, vehicles, cement are improving (Table 6).

This implies the change in the demand of this region from consumption goods to goods necessary for the economic development in this region.

Although the shares of fabrics and yarns are declining and those of iron and steel, cement and machinery are increasing, we should not overlook the fact that fabrics and yarns still hold a larger part than iron and steel, cement and machinery in our export to this region.

Table 6. Commodity Composition of Japan's Export to South & South-East Asia

(in percentages)

	1950	1951	1952	1953	1954	1955	1956	1957
1. Cotton Fabrics	48.0	35.2	23.6	30.1	28.0	17.6	21.0	18.2
2. Rayon Filament Fabrics	3.8	7.3	8.3	7.7	4.2	5.3	7.0	4.6
3. Spun Rayon Fabrics					2.4	4.8	5.0	3.7
4. Cotton yarns	7.2	5.7	6.8	3.8	3.6	3.5	3.0	3.1
5. Rayon Filament yarns	0.8	2.4	1.5	1.3	0.6	1.0	0.9	1.1
6. Spun Rayon Yarns	0.2	1.9	2.4	3.1	2.1	1.6	1.0	2.1
Total (1~6)	**60.0**	**52.5**	**42.6**	**45.0**	**40.9**	**33.8**	**37.9**	**32.8**
7. Iron & Steel	7.2	10.7	21.2	18.1	15.5	19.3	15.0	16.9
8. Cement	1.1	1.6	1.9	1.9	1.6	1.7	3.0	2.8
9. Textile Machinery and Parts	2.7	1.8	3.3	1.5	4.5	2.1	1.2	2.7
10. Railway Vehicles and Parts	2.4	0.3	0.8	1.1	1.0	3.7	4.0	3.9
Total (7~10)	**13.4**	**14.4**	**27.2**	**22.6**	**22.6**	**26.8**	**23.2**	**26.3**

The quantity of cotton fabrics exported to this region which was 585 million square yards in 1950, registered a smaller figure of 560 million square

yards in 1957, although more than 600 million yards were recorded in 1951 and in 1954. The export of cotton fabrics was rather stagnant during the 1950-1957 period.

In contrast to cotton fabrics, rayon filament fabrics and spun rayon fabrics made a remarkable advance in the quantity of export during the 1950-1957 period. Especially striking was the increase of spun rayon fabrics.

As for yarns, cotton yarns and rayon filament yarns remained stationary, while spun rayon yarns increased rapidly.

Iron and steel, cement and railway vehicles also made a marked advance, reflecting the strong demand of this region for its economic development. The export of textile machinery was unstable, in some years increasing while in other years decreasing, but in general it showed a rising tendency. When we compare the rate of change in the export quantity during the 1951-1957 period, the most striking is the increase of railway vehicles and parts and spun rayon fabrics, and next comes the growth of iron and steel, spun rayon fabrics, and cement; while cotton yarns and rayon filament yarns are slow in their increase, and cotton fabrics declines.

Table 7. Quantity of Japan's Main Exports to South & South-East Asia

	unit	1950	1951	1952	1953	1954	1955	1956	1957	Rate of Change (1951–1957)(%)
1. Cotton Fabrics	million sq. yds	585	624	419	496	649	447	558	560	— 10
2. Rayon Filament Fabrics	do	25	108	110	105	102	151	201	153	+ 42
3. Spun Rayon Fabrics	do	8	14	33	33	65	155	175	133	+ 855
4. Cotton Yarns	million lbs	24	24	27	16	22	20	17	25	+ 4
5. Rayon Filament Yarns	do	3	12	7	7	5	10	10	13	+ 8
6. Spun Rayon Yarns	do	0.4	10	17	17	17	17	10	26	+ 160
7. Iron and Steel	1000 MT	78	196	491	318	476	687	512	592	+ 222
8. Cement	do	198	388	323	280	350	455	976	997	+ 157
9. Textile Machinery and Parts	million U. S. dollars	6	10	12	5	21	10	7	17	+ 70
10. Railway Vehicles and Parts	do	5	2	3	3	5	18	21	25	+1150

5. Japan's main imports from this area are such commodities as iron

ore, raw rubber, raw cotton, lumber, crude petroleum, rice, manila hemp and jute.   The shares of iron ore, crude petroleum and Lumber are rising, and those of rice and cotton are falling, while those of manila hemp and jute remain stationary.   The share of raw rubber decreased in the 1950-1954 period, but it took an upward turn in the 1955-1957 period.   (Cf. Table 8)

Table 8. Commodity Composition of Japan's Import from South & South-East Asia

(in percentages)

	1950	1951	1952	1953	1954	1955	1956	1957
1. Iron ore	5.2	5.8	8.6	5.3	10.9	12.3	17.0	22.4
2. Crude Petroleum	2.1	1.8	1.8	2.1	5.4	6.2	6.5	6.5
3. Rice	30.0	13.5	20.0	25.4	27.0	15.3	8.1	4.2
4. Raw Cotton	18.4	22.9	25.1	20.8	8.4	12.4	12.1	8.9
5. Raw Rubber	21.0	16.4	11.7	9.3	8.3	12.0	13.3	11.7
6. Lumber	1.1	3.1	3.1	6.3	7.3	9.6	12.5	8.8
7. Manila Hemp	3.3	2.0	2.3	2.2	1.8	1.6	1.7	1.8
8. Jute	1.4	1.9	1.5	1.1	1.0	1.3	1.2	1.3

The quantity of our main imports from this region showed generally an upward trend.   (Cf. Table 9)

When we compare the quantity imported in 1951 with that in 1957, we

Table 9. Quantity of Japan's Main Imports from South & South-East Asia

	whit	1950	1951	1952	1953	1954	1955	1956	1957	Rate of Change (1951–1957)(%)
1. Iron Ore	1000 MT	1,193	1,957	2,675	2,776	3.832	4,589	6,066	7,224	+ 269
2. Rice	do	474	414	450	688	766	577	397	221	— 46
3. Raw Cotton	million lbs	104	140	282	356	126	219	242	209	+ 49
4. Manila Hemp	do		33	52	69	58	65	63	76	+ 130
5. Jute	do	20	60	44	65	58	68	71	80	+ 33
6. Crude Petroleum	1000 KL	230	384	681	523	1,330	1,922	2,207	2,182	+ 468
7. Lumber	1000 CM		483	549	1,281	1,313	1,858	2,322	2,456	+ 407
8. Raw Rubber	1000 MT	58	58	77	91	81	88	107	121	+ 108

find that the most rapid increase was registered in petroleum, lumber and iron

ore. The growth in the import of manila hemp and raw rubber was moderate, while the increase of raw cotton and jute was rather slow.

The amount of rice imported increased in 1953 and in 1954 owing to the crop failure in Japan. With the exception of these years, the quantity of rice imported from this area showed a downward trend. During the 1951-1957 period the quantity decreased by 46%.

6. From the foregoing statements, we come to the following conclusions:

1) Although the value of our export to and import from this region increased, the relative importance of this region in our total trade decreased.

2) The largest markets for our exports were formerly Pakistan and Indonesia, but recently India has come to the top of the list; the biggest sources for our imports were formerly Thailand and Pakistan, but in recent years, Malaya and the Philippines have gained in importance.

3) Japan's trade balance with this region as a whole was in almost all years unfavourable, except in 1950 and in 1951. Those countries with which Japan's trade registers a constant export surplus are Ceylon, Singapore and Afghanistan, while those countries with which Japan's trade shows an import surplus are British Borneo, Malaya, Portuguese Asia and the Philippines. As the trade balance ratios with those countries are generally high, the imbalance of our export to and import from those countries may be considered as permanent.

4) Japan's export of consumer goods is decreasing, while that of producer goods is increasing. Despite the declining tendency in the export of textile goods, they still hold a larger portion than producer goods.

In regard to our import, the relative importance of rice and cotton is decreasing, while that of iron ore and crude petroleum is increasing.

Thus, we may conclude that South and South-East Asia which were formerly our principal markets for textile goods and were our main sources of cotton and rice are now changing in character as markets for our capital goods and as sources for materials of our heavy and chemical industries.

CURVES OF DIMINISHING VALUES
OF JAPANESE MERCHANT SHIPS
IN PROPORTION TO THEIR AGE

Ginjiro SHIBATA

The diminishing values of ships in proportion to their age are indispensable data which represent a standard for the value of the used ships, the depreciation of their cost or the settlement of their insurable value. In the analysis for this purpose the statistical figures containing numerous cases extending over several years of the actual trading prices of used ships must be used as basic data. During the last war Japan lost nearly all of her ocean-going ships but afterwards made every effort to make up the lost tonnage of her merchant fleet by building crack ships. The trading of used ships, therefore, has been seldom done after the war. But recently some trades are taking place in the shipping market again and it is necessary to fix a standard level for prices. What the present article intends to do is to comply with this requirement to a certain extent.

The basic data which have been available are limited to the cases of pre-war times according to the above-mentioned reason. The price of a ship is however greatly affected by the business conditions in the shipping market and by the price of iron. Since 1935 Japan's business conditions have been uniquely active and eventful; that is, the business conditions have gone through five stages up to now : (1) prior to Sino-Japanese hostilities, (2) from that time until the fall of 1939, (3) from Sept. 18th 1939 when the Price-Stop Law was proclaimed until the outbreak of the last war, (4) during World War II and (5) the post-war period. But the basic data used here are those

of the seven years, from 1935 to 1941, because of the rarity of cases following the outbreak of the last war.

Throughout these seven years the distinctive feature of the Japanese economic situation was the one-sided boom caused by the economic control to meet the expansion of the war industry and the restrain of inflation. By the one-sided boom we refer to the sharply divided condition which existed between those industries concerned and unconcerned with the war. The former were extremely active, while the latter were severely depressed. This tendency was further intensified with the progress of time.

The shipping condition during these years was not exempted from the above case. The economic control by the Government early extended to shipping freight, charterage and the price of iron, and dark clouds hovered over the shipping world. Nevertheless, the volume of foreign trade which decreased extremely since the world-wide economic crisis in 1930 slightly increased from 1935.

Since 1937, some epoch-making facts were brought about. At that time the Government entertained the official idea that a ship was a public organ and that the ship building and shipping businesses should be managed by a governmental or semi-governmental organization. The Japanese shipping world confronted a turning point in its history. New ship building works were hard-driven, standardization of the type of ships was forced, governmental control of shipping business and other shipping policies was carried out, in addition to the former procedures of pegged policies for the price of iron, shipping freight, charterage, etc.

But until the outbreak of the war in 1941, the Japanese shipping world was in a prosperous condition and business was very active in general. The differences from the prosperity at the time of World War I was that the extent of the rise in freight became narrower, the prices of ships themselves were much lower, ship building was not being left to the discretion of private companies, and the trade of ships became limited to some extent.

The price of ships, however, fluctuated widely since 1935 despite the Price Stop law of Sept. 18. Averages of prices at which Japanese ships were actually sold in the Japanese market and the average prices of ships newly constructed from 1935 to 1941 indicated a continuous upward tendency on the average as shown in TABLES I and II.

TABLE I
AVERAGE PRICES OF RECIPROCATOR-SHIPS
ACTUALLY SOLD IN THE MARKET.

UNIT : Yen per 1 Dead-weight Ton.

Years / Types	1935		1936		1937		1938		1939		1940		1941	
	No.	Price	No.	Price	No.	Price	No.	Price	No.	Price	No.	Price	No.	Price
		Yen		Yen		Yen		Yen		Yen		Yen		Yen
1000 D. W. T.	—	—	2	229	3	315	5	365	4	424	1	720	1	880
2000 //	1	190	18	222	6	279	13	356	53	392	10	448	37	485
3000 //	—	—	1	211	1	300	4	329	14	396	5	470	3	556
4000 //	2	200	15	197	7	316	4	355	66	387	10	490	9	590
5000 //	—	—	5	192	5	289	6	343	23	386	2	425	—	—
6000 //	1	169	3	185	—	—	1	350	21	383	4	353	2	390
7000 //	4	182	—	—	—	—	—	—	5	371	—	—	—	—
8000 //	1	188	2	174	2	305	—	—	7	359	—	—	—	—
9000 //	—	—	1	200	2	322	1	308	1	356	5	484	8	485
Total or Average	9	186	47	206	26	288	34	350	195	389	37	463	65	506

TABLE II
AVERAGE PRICES OF RECIPROCATOR-SHIPS
NEWLY CONSTRUCTED IN JAPAN.

UNIT : Yen per 1 Dead-weight Ton.

Years / Types	1935	1936	1937	1938	1939	1940	1941
	Yen	Yen	Yen	Yen	Yen	Yen	Yen
1000 D. W. T.	197	229	315	365	424	467	499
2000 //	190	220	246	356	392	435	465
3000 //	182	211	300	329	396	434	466
4000 //	200	197	297	355	387	459	504
5000 //	188	192	287	343	386	456	504
6000 //	169	185	274	345	383	455	500
7000 //	182	202	273	334	371	428	451
8000 //	188	174	305	323	359	413	436
9000 //	180	200	322	308	356	482	483
Total Average	186	206	288	350	388	449	472

The fluctuations in the newly-built prices shown in Table II act as a business indicator which represents the integrated variation of the price of iron,

wages of ship-building workers and other prices or values which are variable
in accordance with the general business conditions of the respective years.
That is, the figures shown in Table II can be understood to signify the activity
in the shipping industry in Japan.

Thus, the results obtained by dividing the prices per ton of sold ships by
the price per ton of newly-built ships in the respective year mean the prices
of used ships corrected for fluctuations originating from the business cycles.
The benefit obtained from such a process is that, a standard price for a certain
used ship can be easily computed if the price of a newly-built ship can be
approximately calculated from the cost of ship-building materials, wages and
capital interest at a given time even though an actual contract for the ship
building does not exist, and is multiplied by the percentage obtained as above.

To observe the diminishing tendency in the price of a ship in proportion
to its age, it is necessary to use statistically standardized data as a basis.
There may be two methods of standardization, that is, (1) to standardize the
whole original data by means of a certain statistical technique, or (2) to pick
up only the data regarded as a standard and to consider other data gotten
out in a constant relationship with the standard data. For the present case,
the latter method will be used.

Assuming the ages of all ships being equal and other conditions also being
equal, the prices of ships per ton should differ according to (1) the tonnage
of ship, (2) the kind of engines attached; reciprocator, diesel, turbine or
sailing, and (3) the type of ship; ships for general cargo, passenger, passenger
and cargo, tanker or for special cargoes.

In view of the price per ton, the larger the ship the lower is the price;
regarding the engine attached, there is a tendency to appraise a reciprocator
higher than a sailing ship, a turbine steamer higher than a reciprocator and
a diesel boat higher than a turbine steamer. And, there is a trend in general
to estimate the price per ton of a passenger boat higher than a cargo-passenger
boat, and of a cargo-passenger boat higher than a cargo boat.

In the first place, we classified all ships in three classes, 1000—3000
dead-weight ton class, 4000—6000 d. w. t. class and 7000—9000 d. w. t. class;
secondly, we sampled out and used reciprocator-ships since they were the
greatest in number for sale at the period concerned; and thirdly, we selected
cargo ships for the reasons mentioned above. Therefore, for the second and

third conditions, the data treated here are concerned with the lowest unit prices of used ships.

Thus, the following means were adopted for used reciprocator cargo ships which were actually traded :

1.   Classified the types of ships in three classes ; 1000—3000 d. w. t., 4000—6000d. w. t. and 7000—9000 d. w. t.

2.   The average costs per 1 d. w. t. of newly-built cargo ships were investigated for each of the above mentioned classes, and by them the prices per 1 d. w. t., of used cargo ships actually sold for the respective class were divided so as to convert the latter into percentages with regard to the former.

3.   Graphical representation was made so as to see the correlation between the percentages mentioned above and the ages of ships actually sold which correspond to each case.   That is, a horizontal axis was placed for the age of ships and a vertical axis for the percentages of prices, and every case was notated on this graph with a most probable average line drawn through every dot adopting the method of least squares.

To draw this average line, the following conditions must be considered as a theoretical premise.

1.   In case the age of a ship be 0, the price-ratio in the average line shall be 100.

2.   However old a ship may be, the price must go down neither to the zero point nor under the zero point.   The minimum price shall be equal to the price of scrap iron.

In order to satisfy the above conditions, the average line to be adopted here must not be a simple straight line ($Y = a + bx$), but a logarithmic curve. However, data in existence are limited in number and most of the cases concentrate on those for ages from 15 years to 45 years.   The cases for ages from 0 year to 15 years and those for ages above 45 years are very few, so that for the price of ships under 15 and above 45 years of age a curve which satisfies the above conditions is extremely complicated to be drawn mathematically.   Therefore, for the figures of these cases we drew curves in different ways from those of ships above 15 years of age for which data were available in plenty.

First, the method adopted was to draw a logarithmic least squares line for the available figures in existence, that is,

$$\log Y = \log a + X \log b$$

where Y equals the curvilinear coordinates in question, X equals the years of age, a the ratio of price per ton in case of X=0, and b the gradient of the curve.

Since various mathematical methods were proved failures in working out a most suitable curve consistently throughout the case for all the years of ages, 0—50, for the years of ages other than the obtainable real data, several ships of corresponding years of ages which have never been for sale were selected for each type and their prices were estimated arbitrarily by the experts engaged in the shipping business. The latter prices were compared with the prices per ton of the newly built ships in the same manner done for the available figures. According to the estimation of the experts, we find that the prices of ships after an elapse of one or two years from their construction sharply decline up to about 15 years of age. Then, the means which we took finally was to draw curves by eye-measurement so as to conform to the trend of curvature very naturally tracing from the first point of the curve which was drawn mathematically for the actual figures according to the equations mentioned above, to a point of 100% in price-ratio which means the price of newly-built ships.

The equations which were calculated from actual data are as follows:

For the ships of 1000—3000 d. w. t. . . . . . . $\log Y = 1.87068 - 0.00834 X$

     //   4000—6000 d. w. t. . . . . . . $\log Y = 1.89669 - 0.01094 X$

     //   7000—9000 d. w. t. . . . . . . $\log Y = 1.87532 - 0.01207 X$

And the actual data were dotted on the correlation-scales and their curves were drawn throughout the price ratios of ships for 0—50 years of ages, as shown in Charts 1, 2 and 3.

The fluctuations in money value are to be eliminated in outline in the price ratios and consequently in the curvilinear coordinates which are dotted in Charts 1, 2 and 3.

Nevertheless we meet another question as to a discrepancy which arises between the variations in price per ton of used ships and of newly-built ships; that is, in some cases, the price per ton of used ships which always means a spot price might be going up more than those of newly-built ships which means a contract price or sometimes a future price. This was caused by the fact that at that time the price control of iron and steel was strictly executed

since they were war materials, while the sales of used ships were left free to some extent, and shortage of the tonnage of ships raised the prices of used ships according to the difficulties of receipt of ship-building materials and the lack of building berths at dockyards.

So, in spite of the statement at the outset of this article that the phases of general business conditions in Japan would be divided into three periods for pre-war times, the Price-Stop Law of Sept. 18th 1939 had little influence on the trade of used ships, and the distinction in the variation of the prices of
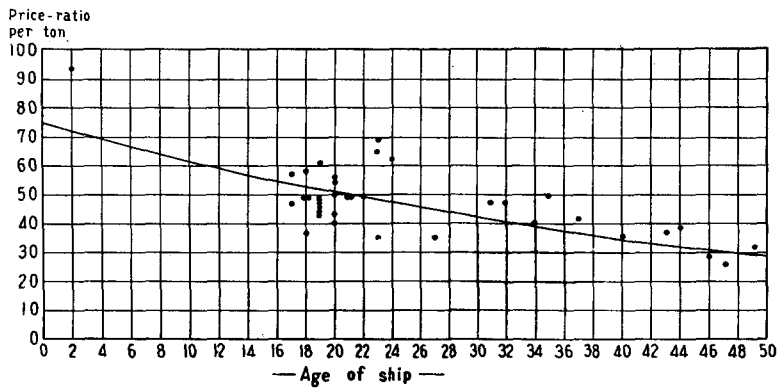
CHART 1 : Average price-ratios per ton correlated with the age of ships of 1000–3000 d. w. t. type during 1935–1941 years' period.
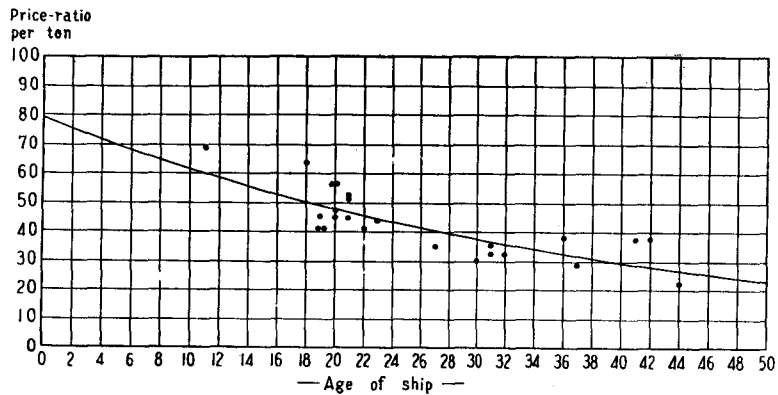
CHART 2 : Average price-ratios per ton correlated with the age of ships of 4000–6000 d. w. t. type during 1935–1941 years' period.
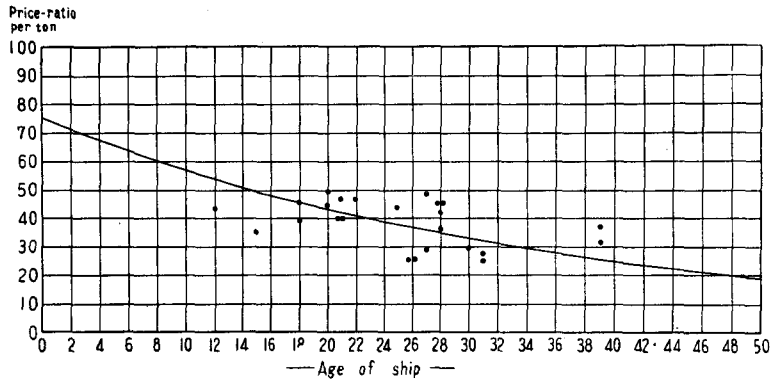
Price-ratio
per ton

CHART 3 : Average price-ratios per ton correlated with the age of ships
of 7000–9000 d. w. t. type during 1935–1941 years' period.

used ships can be seen between the period before the Sino-Japanese hostilities
(Jan. 1935—June 1937) and the period since then. This fact can be seen in
Chart 4.

For the above reason, we described the curves of the average diminishing
price of used ships with their ages for each type, separately for the two
above-mentioned periods. These curves were described in the same method
as the curves in Charts 1—3. Charts 5, 6 and 7 are the results.
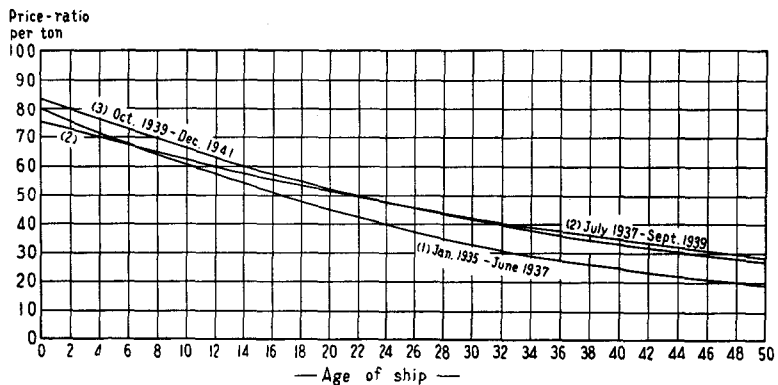
Price-ratio
per ton

CHART 4 : Curves of average price-ratios per ton for the ships of 1000–9000 d. w. t. type
classified into three periods, Jan. 1935–June 1937, July 1937–Sept. 1939 and Oct. 1939–Dec. 1941.

As shown in Charts 5—7, the relation between the ages of ships and their, prices for the two periods are different according to the type of ships. That is, for the type of 1000—3000 d. w. t. ships the curve for the period after the Sino-Japanese hostilities is higher by 7% averagely than that of the period before then, and for the type of 7000—9000 d. w. t. ships, the former is similarly higher by 9.5% on the average than the latter. In regard to the medium type of ships, however, the converse situation is seen between the price ratios of ships under 24 years of age and those of above 24 years of age. That is, for ships of under 24 years of age the price-ratios for the period
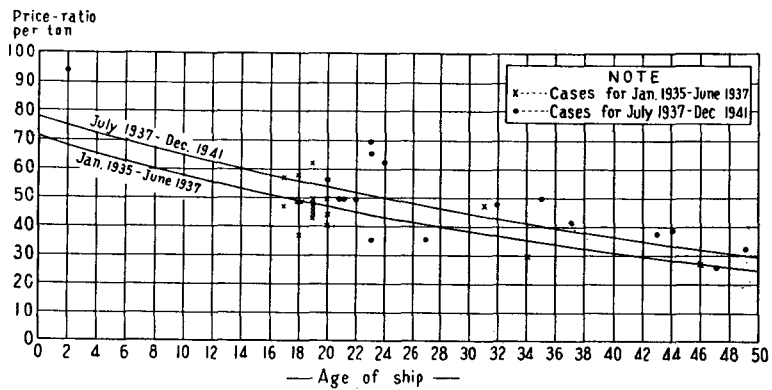
CHART 5: Curves of average price-ratios per ton for the ships
of 1000–3000 d. w. t. type classified into two periods.
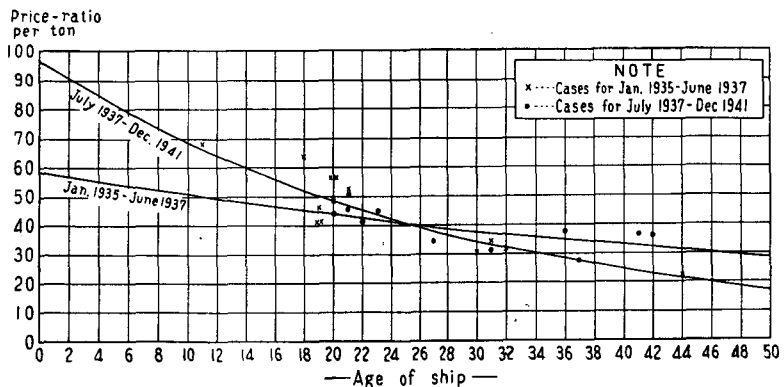
CHART 6: Curves of average price-ratios per ton for the ships
of 4000–6000 d. w. t. type classified into two periods.
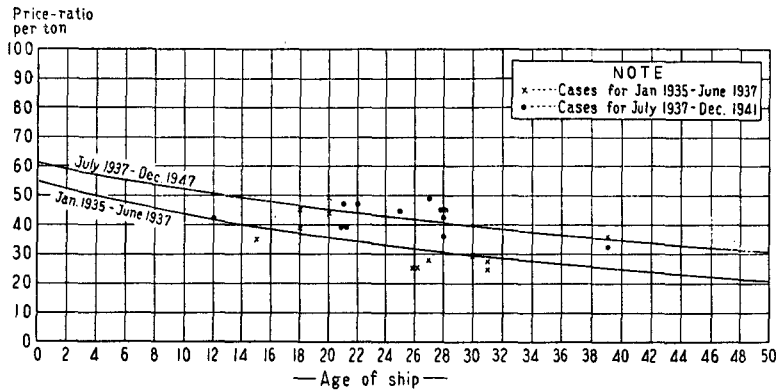
CHART 7 :   Curves of average price-ratios per ton for the ships
of 7000–9000 d. w. t. type classified into two periods.

before the Sino-Japanese hostilities are rather higher than those for the period
after, while for ships of above 24 years of age the price-ratios are higher for
the period after.   Chart 6 shows this intersecting relation.   This intersection at
the point of 24 years of age was caused by the fact that at the time before
the Sino-Japanese hostilities the used ships of younger ages were heavily traded
at higher prices and on the contrary afterwards those of older ages were traded
in larger numbers at higher prices.   In fact, no ship under 20 years of age
happened to be traded after the Sino-Japanese hostilities in this group, while
before then five cases occurred.   This fact induced such an intersecting relation
of curves both before and after the Sino-Japanese hostilities, and if there were
any trades of younger ships for the latter period the curve would be situated
higher than it actually should.

Judging from these conditions and from the situation shown in Chart 4,
the price-ratios of used ships to the newly-built ships after the Sino-Japanese
hostilities are thought to be higher by 8% on the average as compared with
those of the prior period.

Therefore, it might be rather proper to calculate a curve using only the
data of the time after the Sino-Japanese hostilities.   But such data were not
sufficient in number so that a reliable diminishing-value curve could not be
computed adequately.   That the more data obtainable the higher the reliability
is a statistical rule in general.   Thus, we decided to depend not only on the

data after the Sino-Japanese hostilities but the data before then. The results were shown in Charts 1, 2 and 3. The values of those curves were computed from the data from 1935 to 1941 in all. And since the difference between the two time series shown in Charts 4—7 is estimated to be about 8% on the average, the final curves should be elevated by 4% in all for the data here taken in. The rate 4% is of course an approximate number, because the former period of time contains thirty months while the latter is for forty-two months, and besides there is a difference in number of cases between the former and the latter. But in the nature of things mathematical accuracy should not be expected too much in such an estimation, since the data are not so abundant in number and the average lines calculated from such data should only be a base line about which the original data are distributed in a pretty broad range. Three curves in Chart 8 were described so as to elevate by 4% each curve shown in Charts 1—3, and moreover as stated before, using for reference the estimation by experts in shipping circles the price ratios for 0 year of age were adjusted by eye-measurement to fit 100% exactly. The original figures for Chart 8 are given in Table III.

Price-ratio per ton

CHART 8
Curves of diminishing values of Japanese merchant ships with their age.

NOTE
1······1000-3000 d.w.t. type
2······4000-6000 d.w.t. type
3······7000-9000 d.w.t. type

—— Age of ship ——
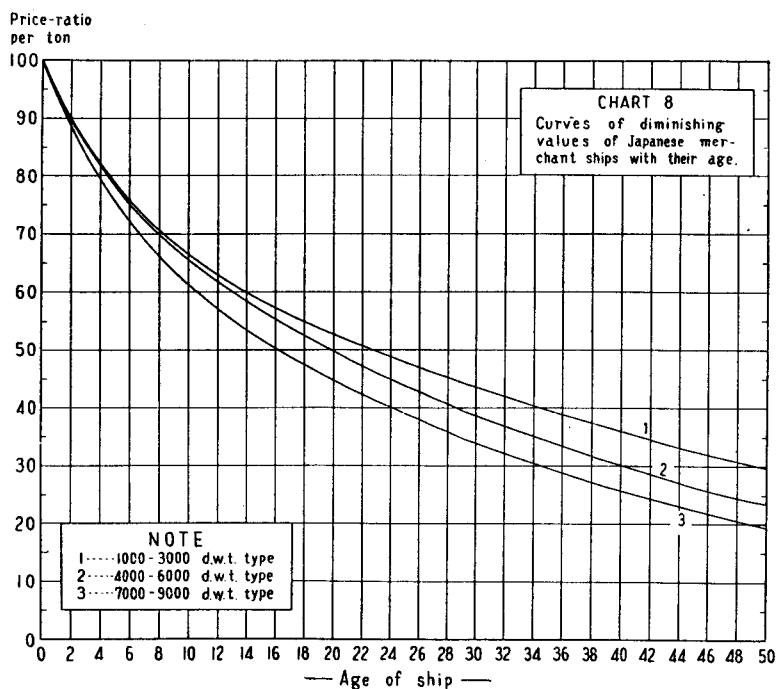
TABLE III

DIMINISHING VALUES PER TON OF THE USED SHIPS IN JAPAN

Ages of Vessel	1000–3000 D. W. T.	4000–6000 D. W. T.	7000–9000 D. W. T.	Ages of Vessel	1000–3000 D. W. T.	4000–6000 D. W. T.	7000–9000 D. W. T.
0	100.0	100.0	100.0	26	46.9	42.6	37.9
1	94.6	94.0	93.6	27	46.0	41.5	36.9
2	89.9	89.7	88.5	28	45.1	40.5	35.8
3	86.0	85.5	83.5	29	44.2	39.5	34.9
4	82.3	81.6	79.1	30	43.4	38.5	33.9
5	78.8	78.1	75.2	31	42.6	37.5	33.0
6	75.5	74.9	71.9	32	41.8	36.6	32.1
7	72.8	72.0	68.9	33	41.0	35.7	31.2
8	70.3	69.6	65.9	34	40.2	34.8	30.3
9	68.2	67.3	63.0	35	39.4	33.9	29.5
10	66.3	65.2	60.7	36	38.7	33.1	28.7
11	64.5	63.3	58.7	37	37.9	32.3	27.9
12	62.8	61.5	56.9	38	37.2	31.5	27.1
13	61.2	59.8	55.0	39	36.5	30.7	26.4
14	59.7	58.2	53.2	40	35.8	29.9	25.7
15	58.3	56.6	51.6	41	35.1	29.2	25.0
16	57.0	55.1	50.0	42	34.5	28.5	24.3
17	55.8	53.7	48.7	43	33.8	27.8	23.6
18	54.7	52.3	47.3	44	33.2	27.1	23.0
19	53.6	50.9	46.0	45	32.5	26.4	22.4
20	52.6	49.6	44.8	46	31.9	25.7	21.7
21	51.6	48.3	43.5	47	31.3	25.1	21.1
22	50.6	47.1	42.4	48	30.7	24.5	20.6
23	49.6	45.9	41.2	49	30.1	23.9	20.0
24	48.7	44.8	40.1	50	29.6	23.3	19.5
25	47.8	43.7	39.0				

The curves shown in Chart 8 and figures in Table III should be applicable to an actual case, understanding the conditions attached to those formations, that is:

1. As a general condition, the curves must be interpreted as a standard type, as a statistical mean always is. Actual cases should deviate in fairly wide ranges from these curvilinear coordinates as a matter of course.

2. The data used here are those of ordinary reciprocator cargo ships only. Therefore, diesel motor ships, turbine steamers, passenger boats, mixed boats,

tankers and other special vessels have been not considered. For the prices of these other kinds of ships the constant ratios to the values of these curves should be computed from other data and practically applied.

Table IV shows the average prices per ton of diesel and turbine ships which were actually sold during the same period. But these cases were so few in number that we did not dare to fix the average ratios of these figures to the figures shown in Table I.

TABLE IV
AVERAGE PRICES OF DIESEL AND TURBINE SHIPS
ACTUALLY SOLD IN JAPAN

UNIT : Yen per 1 Dead-weight ton.

Types \ Years	1935	1936	1937	1938	1939	1940	1941
Diesel Ships							
D.W.T. 1000–3000	251	—	370	422	517	528	600
4000–6000	—	231	—	—	375	350	—
7000–9000	317	219	345	—	—	—	—
Turbine-Ships							
D.W.T. 1000–3000	222	268	—	340	—	—	—
4000–6000	197	197	342	359	382	523	327
7000–9000	188	197	305	343	385	359	487

3. Types of ships were divided here in three classes, that is, 1000—3000 d. w. t., 4000—6000 d. w. t. and 7000—9000 d. w. t. This resulted from the fact that the number of cases were not sufficient to classify still finer. Numerical values classified by every 1000 d. w. t. will be roughly perceived by means of curves which are described in three equal parts between the standard curves shown in Chart 8.

4. In these three curves the increased value as the result of repairs is not considered specially. In other words, the data used here contain those for ships both repaired and unrepaired. So, for the same age and same type, the original points which deviated extremely above the curve in Charts 5—7 mean mostly those for ships heavily repaired, and the points which deviated extremely below

the curve mean generally those for ships unrepaired. Small repairs are done from time to time, but fairly large repairs which increase the value of ships to a certain extent are usually made before a regular inspection by the proper authorities, and heavy repairs or an overhaul must be made after about twenty years or thereabouts. To adjust the curves to the values increased by these repair expenses, other statistical data regarding the repair expenses must be provided and the yearly average of the expenses must be added to the corresponding values of the curves.

5. Besides the above conditions, even among ships of the same kind and equal type there are various grades in quality, that is, higher, ordinary and lower grades. The specification in the quality of ships can not be obtained from these figures, because the latter shows merely the average value of the ships of various quality.

6. Latest figures after the war are still not so sufficiently available so that the correlation curves are not described sufficiently. Questions will be concentrated on whether the ratios of the value of the used ships to the value of newly-built ships after the last war would not be equal to those of before the last war. A discrepancy surely exists to some extent between them. But the greater part of the Japanese merchant marine has been newly built after the war and few ships have been traded. So, adequate curves for the post-war time can be expected to be described in the future.

(The original data were all provided by the Nippon Shipping Exchange, Corp., Kobe.)

THE MODERNIZATION OF JAPANESE SHIPPING BASED ON THE TRANSPORTATION OF HOKKAIDO MARINE PRODUCTS

Seiji SASAKI

(1)

In the twelfth and thirteenth centuries the great herring fisheries of the North Sea and the Baltic, of which " King Herring " was the chief, became a dominant factor in the development of European commerce, and employed not only a very large tonnage in order to transport the products, but was a remarkable impetus to the shipowners in building many big vessels suitable for long-distant navigation. The great Scania Fishery at the entrance to the Baltic and the other herring fisheries in the north seas constituted the largest part of the important cargoes in the Middle Age when all Europe was then Catholic or Orthodox and observed rigidly and universally the many fast days. Many historians have pointed out that the Hansatic League dominated for three centuries, at least, the sea routes of northern Europe through their monopoly of this commerce. We can easily discern similar facts in other marine nations, such as the Dutch who took the place of the Hansa merchants after about the fifteenth century, the Norwegian, Swedish and Danish who were engaged originally in the same carrying trade and could respectively develop their modern shipping industries.

In our country we can also recognize a similar relation between the carrying trade and fishery. The " Kitamaesen " in the Tokugawa Era and the " Kitamae shipowners " group in the Meiji Era, which were the great leaders of the early

"Shagaisen," were merchants and carriers of Hokkaido marine products, and developed their shipping business chiefly by transporting that cargo from Hokkaido to Hokuriku or Osaka. Although many people know that "Kitamaesen" were typical big ships among our sailing vessels and that the owners of those vessels adopted the steamers earlier than others, contributing to the development of modern Japanese Shipping, few understand yet the fact that they started from a similar "carrying of marine products" as the above-said European shipping industries. The transportation of fish played an important part in the growth of Japanese shipping, both in the sailing era and in the steamship era. Almost all of the earlier "Shagaisen" employed in the carrying of Hokkaido marine products and even the "Shasen," at least, the steamers of the Nippon Yusen Kaisha or its antecedents, the Mitsubishi Kaisha, carried a considerable volume of those cargoes. Thus, it may be said that the transportation of Hokkaido marine products was very closely connected with the modernization of the Japanese shipping industry as a whole.

This article aims at showing the intimate relation between the carrying of Hokkaido marine products and the development of modern Japanese shipping in the case of the modernization of the ship from sailing to steamer among the "Kitamae shipowners" group, for they took exclusive charge of that transportation since the Tokugawa Era and their modernization represented almost entirely the development in this field.

(2)

When the writer made an etymological study of "Kitamaesen," it was shown that those ships named "Kitamaesen" navigated chiefly along a coastal sea-route from Hokuriku ports to Hokkaido ports.——"Kita" meant the former and "Mae" meant the latter ——. The ships belonging to Hokuriku ports were remarked as being the most important sailing vessels engaged in the trade of Hokkaido marine products. They contributed to the protection of Japanese (sailing) shipping against its decline during the period of national isolation together with the "Higaki-Kaisen" and "Taru-Kaisen," both of which navigated almost regularly from Osaka or Kobe to Tokyo (Edo). The Kitamaesen were the larger sailing vessels and were employed in the longer distant transportation of bulk cargo than the others. Moreover, the leading shipowners in this group played a most typical and leading part in the growth of the

cargo-steamer, when the modern steamship firms began to develop as " Shagai-sen " apart from the Nippon Yusen Kaisha and the Osaka Shosen Kaisha. The growth of the Japanese cargo-steamer was motivated indeed by the development from sailing vessels to steamships in the Kitamaesen. In this relation, it may be said that the transportation of the Hokkaido marine products gave an important impetus to the development of modern shipping.

Even though the Kitamae ships contributed to the building of large vessels and the maintenance of the carrying trade before the middle of the nineteenth century, they were quite infantile in quality and of low performance as compared with that of the European ships in those days. Such Japanese type sailing vessels which were called " Yamato-bune," were transformed at first into European type sailing vessels after the tenth of Meiji (1877), for under the conditions of those days it was difficult to adopt the most modern ship (steamer) by the single effort of a shipowner.

The first European type sailing vessel in Hokuriku provinces was the " Joei-maru " which was built at Nanao in 1875. After a few years, however, many Kitamae shipowners began to buy or build new type vessels, because they were given a direct impetus by the navigation of the " Kashū-maru " (153 ton) which was built at Osaka in 1879 and owned by famous Nisaburo Hiroumi. The " Kaetsu-maru " (92 ton) which was bought by the Etchū Fuhansen Kaisha in 1881 was another of the earliest European type sailing vessels.

But, the marine products, especially kippered herring or fish manure, which were carried from Hokkaido to Hokuriku ports or Osaka, were a mass bulk cargo and were much more conventionally and profitably transported by the Japanese type sailing vessels which could take them on board in mountain style —— this method of loading was generally known as " Yamadori "—— than by the European type sailing vessels. Furthermore, those cargoes did not require rapid navigation. On that account the transition from the Japanese type sailing vessel to the European type sailing vessel was not neccessarily quick and on a large scale. Nevertheless the Japanese type sailing vessels needed 35—40 days to navigate from Otaru to Osaka and usually were only able to make one round trip a year. On the contrary European type sailing vessels could easily undertake three or four round-trips and suffered less from the effects of the weather or wind. Thus it was natural that many rich and

progressive Kitamae shipowners should increasingly make use of the latter.
A prohibition against building the Japanese type vessels over 500 " Koku "
which was put into practice in 1885 gave a final spurt to such progress.

The adherence to sailing vessels in the dawn of such early Japanese
steamship companies as that of the Mitsubishi Kaisha or of some other local
firms was clearly caused by the long tradition or character of the Kitamae
shipowner's shipping business; they owned and operated originally their ships
in connection with their commercial pursuits, in other words, their shipping
business was evidently a " private carriage." It must also be noted, however,
that such a small-scale development of the European type sailing vessel was
itself fairly affected by the remarkable advancement of the steamship business
outside of them. Many shipowners, at least, the progressive owners were sure of
the inevitability of adopting the new steamers sooner or later. They therefore
made allowance for the adoptation of the European type sailing vessels. It was
reflected on their tonnage in about 1887.——see the figures on page 71.

The conservatism of the owners of sailing vessels became especially more
visible at this stage of transition to the steamer. The Kitamae shipwoners
even formed a self-defensive organization. Prior to this, however, we must
take a brief glance at the earliest transportation of Hokkaido marine products
by steamship, because such a self-defensive organization itself just came into
being against the advance of the steamer.

An old document which is preserved in the Hiroumi-house includes so
much valuable maritime record of the latter half of the nineteenth century
that we can fairly imagine the earliest fish-transportation by steamer. It is
especially interesting to note that there are two marine transportation
contracts which were concluded between some Kitamae merchants including
Hiroumi and the Mitsubishi Kaisha in 1884 and 1885. In those days the
Mitsubishi was competing against a new steamship company, the Kyodo Unyu
Kaisha, along the coastal routes. The violent competition in passenger traffic
between Yokohama and Kobe forced both companies into a greatly unbalanced
condition. To deal with the difficulties the Mitsubishi aimed to exploit a new
transportation field and to maintain those cargoes under their own control.
The traffic of the abundant Hokkaido marine products was then the best field
for exploitation. So the Mitsubishi endeavoured to persuade some powerful
merchants who were also the owners of sailing vessels, and succeeded in an

Members and their sailing vessels of the Hokuriku Shingikai in January 1889.
—— the numbers in the brackets mean European type sailing vessels.

M. Nishide	Nishide-maru, etc.	5	vessels.	Jinkichi Kadotani	Kitoku-maru, etc.	4	vessels.
K. Tadatani	Kyūetsu-maru, //	3	//	N. Hiroumi	Kōchō-maru, //	8	// [3]
H. Yokoyama	Kōtoku-maru, //	4	//	Y. Hamanaka	Sakikake-maru, //	10	// [5]
G. Nakanishide	Eitoku-maru, //	3	//	K. Hamanaka	Kōfuku-maru, //	4	//
Hikobe Kubo	Kubo-maru, //	5	//	S. Hayashi	Kata-maru, //	4	// [3]
Hikosuke Kubo	Chōho-maru, //	5	//	M. Hamanaka	Eiju-maru, //	3	//
M. Masuda	Tsūriki-maru, //	5	//	S. Tanbo	Zinpo-maru, //	3	//
G. Konishide	Ichiju-maru, //	3	// [2]	G. Ukon	Yawata-maru, //	14	// [13]
C. Sakatani	Kochō-maru, //	6	//	E. Okazaki	Eirai-maru, //	5	//
S. Ooya	Yawata-maru, //	7	// [2]	S. Nakamura	Anzen-maru, //	4	//
Jintaro Kadotani	Shōtoku-maru, //	7	// [1]	S. Nishikawa	Anzen-maru, //	6	// [1]

exclusive transportation contract for the marine products. It is very noteworthy that the contract of 1885 provided a clear and exclusive shipment clause and a deferred rebate system, but it did not mean the prohibition of private carriage with sailing vessels owned by those merchants; for those merchants owned and operated many sailing vessels which were intended to carry their own cargoes. And they would never have agreed to remove their sailing vessels from the fish-traffic and to rely completely on the steamer service of the Mitsubishi.

(3)

As mentioned above, the transition from the Japanese type sailing vessel to the European type sailing vessel began after the war of 1877. A violent south wind, named " Saigo Maze," which blew uninterruptedly for about seventy days during this war, exposed so completely the low ability of the former that even most conservative shipowners could not but awaken to the need of technical development in ships. On this occasion, many general shipowners including the Kitamae shipowners group started at first by adopting the better sailing vessel on account of their own historical, economic or psychical conditions. It was clear that the enormous fund necessary to buy a steamship, the technical inexperience and the mental insecurity in its navigation hindered a quick transformation to the better type ship (steamer).

Their long tradition as merchant-shipowners, however, was the greatest reason for their adherence to their sailing vessels. As one document mentioned,

the owners of sailing vessels had generally such following strong opinions in
those days : — though the sailing vessel was apparently more awkward than
the steamer, it had undoubtedly a convenience in itself; it needed less capital,
cost and crew ; there was a special advantage, as nine-tenth of the carrying
cargoes could be adequately handled by sailing vessels in those days ······.

When the Nippon Yusen Kaisha, which was established after the compe-
tition between the Mitsubishi and the Kyodo Unyu, tried to carry the
Hokkaido marine products, the Kitamae shipowners received a great shock
and had to do more serious thinking in order to maintain their sailing vessels
and trading business. Following the example of sailing vessel owners in other
provinces, the Kitamae shipowners organized a defensive body, "Hokuriku
Shingikai" in 1889 too. Sixty-three owners with 177 sailing vessels took part
in this organization, all of whom belonged to the three prefectures, of Ishikawa,
Fukui and Shiga. In spite of the non-attendance of some owners like Baba
who engaged in shipping at Toyama prefecture and of the participation of the
sailingmaster or the pure merchants, — "Riku Sho" (land-merchant) —,
who owned no ships, this organization was almost representative of the Kitamae
shipowners as a whole. Many famous shipowners, like Hiroumi, Ooya, Ukon
or Hamanaka were naturally its chief members.

Every union of sailing vessel owners in those days originated completely
from a self-defensive requirement against the urgent pressure of the modern
steamship companies especially, of the N. Y. K. The Dainippon Domei
Fuhansen Kumiai in 1888, the Nada Seikō Kaisha and the above-mentioned
Hokuriku Shingikai in 1889 had a common purpose to maintain their own
sailing vessels as long as possible. Above all, the establishment-prospectus of the
Hokuriku Shingikai stated very plainly the facts that the Kitamae merchant-
shipowners and their ships were suffering from a terrible invader, and that
they had to co-operate in order to keep up their own traditional business.
After all it had only an insignificant effect, but we can easily acknowledge
some important signs in the development from sailing vessels to steamers in
the Kitamae shipowners group, or, in the new change in the transportation
of the Hokkaido marine products, through the formation of this organization.

(4)

Besides the rapid development of both chartered companies, the Nippon

Yusen Kaisha and the Osaka Shosen Kaisha, there were a good many small-steamer enterprises in the Hokuriku provinces. And those steamers tried sometimes to navigate to Hokkaido ports. In January 1881, a steamship company, named the Hokuriku Tsusen Kaisha, was established by Nōso Fujii, Seisaku Kuchiki and others, and another company, the Etchū Fūhansen Kaisha was founded in the same year by N. Fujii, Shōzo Shiota, Magosaburo Washi-yama, etc. The latter even bought a large steamer, " Sukune-maru " (640 ton) in spite of its name being " Fuhansen " (sailing vessel). Such steamers of the above-said companies and of the Kanō Kisen Kaisha which was established in 1886 had navigated already to the Hokkaido ports along the coast of the Japan Sea before the twentieth of Meiji (1887), and there is no doubt that those steamers carried some marine products during their service.

However, the N. Y. K. was the most powerful and direct invader or the greatest competitor for the Kitamae sailing vessels. This company was a much larger, monopolistic enterprise than the Mitsubishi Kaisha and " controlled almost all internal routes." Therefore all merchants had unwillingly to accept the expensive freight charges, and all other shipowners were obliged to limit their own activities to only a few narrow, unimportant trade routes. The N. Y. K. made special efforts to hinder any new-comer (steamship firms) on the one hand, and encroached as much as it desired upon the territory of the weak sailing vessels on the other hand. As a general rule, the sailing vessel was not even considered an opponent of the N. Y. K., as it was not powerful enough to compete against the steamers of the latter.

The Kitamae shipowners suffered then from the most terrible pressure put upon their own sailing vessels in addition to disadvantages as merchants. This was the main reason why they organized the above-said Hokuriku Shingikai as a self-defensive body and why they did not give up their sailing vessels to the last. In 1886 the Etchū Kisen Kaisha was founded at Takaoka, and also Sōichiro Asano bought the " Hinode-maru " (1,136 ton) to operate a new steamship business. These two firms had the distinctive motive of opposing the N. Y. K., but even other steamship owners had, more or less, similar feelings of hostility. By the way, the " Kosuga-maru " (wood, 1,496 ton) of the Etchū Kisen Kaisha was the first steamer of more than 1,000 ton which was built in this country. Besides, M. Baba also began to own and operate some small steamers in those days.

The adoption of the steamer had a gradual but inevitable effect on the Kitamae shipowner's business in furthering progress, for a shipowner could —— it may be more correct to say " had to "—— carry public " freight " in addition to his own private " cargo " since the operation of steamers which had far more capacity, speed and reliability of navigation than sailing vessels. It took a long time, however, for the Kitamae shipowners to abandon their sailing vessels and try to develop a purely modern shipping business after their separation from commerce. In fact, the transition to the steamer itself was motivated by the wishes of the Kitamae shipowners to maintain their traditional trade of Hokkaido marine products. Even in a later period, many shipowners kept up their commercial business with their own sailing vessels on the one hand, and tried to develop their shipping business by means of new steamships operating on some new routes on the other hand. Their steamers at first navigated the same route as the sailing vessels had navigated, and transported marine products together with the sailing vessels. In the next stage the shipowners operated their steamers on more remote new routes seeking more profitable new cargoes. And at last the shipowners gave up the carrying trade with their sailing vessels, and engaged in pure shipping business exclusively with the steamers.

At any rate we can conclude that the transportation of the Hokkaido marine products by steamers was the starting point in the modern development of shipping. The main steamship enterprises in Hokuriku ports which were established before the 30th of Meiji (1897) and engaged in the transportation of the Hokkaido marine products were as follows.

1) Hokuriku Tsusen Kaisha ; established in 1881, at Fushiki, the Shitoku-maru (53 ton), and the Akitsu-maru (130 ton), afterward T. Takebe and K. Ishizaki took over the steamers and business of this company.

2) Etchū Fuhansen Kaisha ; established in 1881, at Fushiki, the Sukune-maru (640 ton), joined the Kyodo Unyu Kaisha in 1882.

3) Kanō Kisen Kaisha ; established in 1886, at Kanazawa, the Kanō-maru (266 ton), Aomori-maru (200 ton), the Fusō-maru (190 ton), the Minamoto-maru (100 ton), the No. 2 Kanō-maru (90 ton) and some other smaller-steamers, broke up in 1900.

4) Etchū Kisen Kaisha ; established in 1886, at Shimonoseki village (near

Takaoka), the Kosuga-maru (1,496 ton), was successful till the Taisho era.

5) Fushiki Kōun Kaisha; established in 1888 as a combination of the above-said Takebe and Ishizaki and the Fushiki Kisen Kaisha (established in 1886, a coastal small steamship enterprise), at Fushiki, the Shitoku-maru, the Naoetsu-maru (81 ton) and the Imizugawa-maru (Tonnage unknown).

6) Nisaburo Hiroumi; bought the Hokuriku-maru (638 ton) in 1888, the Hokushū-maru (994 ton) in 1890, the Takashima-maru (310 ton) in 1891 and the Chihaya-maru (509 ton) in 1892, afterward reorganized into a modern steamship company and is developing as the Hiroumi Kisen Company Ltd.

7) Hikotaro Ishizaki; bought the Ishizaki-maru (1300 ton?) in 1888, but this steamer sank in 1891.

8) Michihisa Baba; engaged earlier in the small steamship business, but bought a larger steamer, the Sharyo-maru (800 ton) from the N. Y. K. in 1889. On the one hand, he was the promotor (president) of the Etchū Shosen Kaisha (established in 1897), and on the other hand reorganized his own enterprise into the Baba Gomei Kaisha and placed the Baba Kisen Company Ltd. of today on a solid basis.

9) Masaku Minamishima; bought the Nakoura-maru (1,084 ton) in 1890, reorganized afterward into the Minamishima Shoko & Co.

10) Shichihei Ooya; bought the Kaga-maru (991 ton) in 1891, the Chidori-maru (200 ton) and the Aikoku-maru (1,722 ton) in 1892, and the Takenoura-maru (2,052 ton), the Taiwan-maru (2,391 ton) and the Gaisen-maru (1,790 ton) a few year later, reorganized afterward into the Ooya Shosen Goshi Kaisha and developed till the Showa era.

11) Yasaburo Hamanaka; bought the Nikkō-maru (1,865 ton) about the same time as Ooya's Kaga-maru and the Tōyō-maru (2,548 ton) in 1893.

12) Gonzaemon Ukon; bought the Nanetsu-maru (1,326 ton) before 1893, afterward reorganized into the Ukon Shoji Company Ltd., and continued business till the Showa era.

13) Denuemon Sugano; bought the Kōryo-maru (1,000 ton?) in 1892, but this ship sank the next year.

14) Shinminato Kisen Company Ltd.; established in 1893, at Shinminato, the No. 1 Shinminato-maru (111 ton) and the No. 2 Shinminato-maru (183 ton), broke up in 1903.

15) Kōsuke Shiota ; bought the Izanagi-maru (436 ton) in 1895, and opened the coastal-route around this country and the Korean route, but this ship sank in 1900.

16) Hokuetsu Kisen Kaisha ; established in 1896, at Uozu, the Hokushin-maru (1,186 ton), the Hokuetsu-maru (116 ton) the Kannon-maru (100 ton?) and the Shinkawa-maru (tonnage unknown), broke up in 1900.

DEVELOPMENT OF THE MARINE INSURANCE INDUSTRY IN JAPAN IN THE MEIJI PERIOD

—IN RELATION TO THE CAPITALISTIC DEVELOPMENT OF JAPAN

Hiromasa YAMAMOTO

In this article the writer wishes to study the establishment of the modern marine insurance business in Japan in connection with its capitalistic development, with special concern for foreign commerce and merchant marine. Before we enter into our subject, it is better for us to point out the different conditions of economic development in Japan briefly in relation to marine insurance.

European countries have a long tradition of marine insurance. Though the establishment of modern marine insurance was after the industrial revolution, its origin and development had been combined with the development of foreign trade which was the element to destroy the feudal economic systems, and merchants had by then accumulated many experiences and customs with regard to marine insurance. Therefore at this time when we study the history of marine insurance, we should keep in mind that modern marine insurance has a long tradition from the Mediteranean trade period, however important it may be to distinguish modern marine insurance from the primitive one. And it is natural that European countries which had intimate commercial relations with each other had marine insurance of almost the same contents.

On the contrary Japan had an unique status with regard to the development of foreign commerce because it stood at the far eastern end of Asia and was a closed country to foreigners in 1639. After the exclusion of foreigners Japan had no contact with foreigners with respect to foreign trade and culture, and Japanese were prohibited from building ocean-going sailing vessels and from traveling to foreign countries. Therefore Japan had no chance to develop marine insurance.

However it was quite natural that the function to cover the loss caused by the perils of the sea almost the same as marine insurance should appear in the course of the development of domestic commerce and coastal transport which had the effect of destorying the feudal economic systems. The method of underwriting in Japan during the feudal period was not affected by the marine insurance in Europe. It had an uncompleted style and its function was not separate from those of trade and transport, corresponding to the feudal economic conditions of Japan in the Tokugawa Period.

Accordingly in the course of the modernization of Japan after the Meiji Revolution the underwriting method of Japan met as great changes as in all other economic fields. The Meiji Revolution of 1868 was the outcome not of the complete destruction of feudal economic systems, but of the demand of European capitalistic countries to open trade with Japan with the danger to Japan of making itself a colony of capitalistic countries. After the Meiji Revolution the Japanese government introduced and fostered domestic industries and other capitalistic economic systems so as to be able to keep pace with the economic development of European capitalistic countries and to escape from the danger of becoming itself a foreign colony. Marine insurance was not an exception.

Thus our study includes three parts: the underwriting system in Japan during the period of the feudal economy, the introduction of western underwriting methods and the establishment of underwriting firms in Japan; and the establishment of the marine insurance industry of Japan.

I

From the earlier part of the seventeenth century downward Japanese traders engaged in foreign trade with South East Asia. In those days the so-called " Nage-gin," which meant investment, was used for the purpose of

accomodating the foreign trade fund. When a shipowner was to start on a voyage, foreign trade merchants invested in a foreign trade fund which was lent by investors under the following terms. If the vessel came back to the mother port safely, the lender, the foreign trade merchant was repaid the fund lent with interest, but the borrower had no duty to repay the fund if the vessel and cargo bought with the fund were lost by shipwreck. Foreign trade vessels sailed to South China, South East Indies, or the Philippines, and the voyage required half a year. Then the term of the loan was six months, and the rate of interest was ordinarily from thirty to fifty per centum of the loan, sometimes amounting to ninety per centum at the highest. Those high interest rates were due to the character of the loan which covered the loss caused by the perils of the seas.

This system of bottomry was supposed to have been introduced by the Portuguese who had commercial relations with Japan in those days. This system was abandoned after the prohibition of foreign trade in 1639, because it could be made use of only in foreign trade from which much profit could be gained. In 1639 foreign trade and building of ocean-going sailing vessels were prohibited by the seclusion order. Thenceforth sea transportation and commerce were limited in their activities to domestic or coastwise areas, resulting in the underdevelopment of the underwriting method.

During the earlier period of the Tokugawa Reigns (1600—1867) main coastwise trade routes, including the route between Tokyo and Osaka, were opened and much cargo was carried on those sea routes by Japanese type sailing vessels. From those days downward the monetary economy by and by passed into a feudal economic system accompanying commodity productions in many districts. At that time the business of sea transportation was not divided from commerce and was carried out by the so-called merchant-carriers who formed a " Tonya," a sort of guild. The merchant-carriers devised an underwriting method peculiar to them. They put aside silver (money) in accordance with the volume of the cargoes to be carried, for the purpose of covering the loss of their cargoes. We may say that it was a sort of self-underwriting.

Afterwards there appeared the tendency of the shipping business to become separate from those of merchants and with this tendency the method to cover the loss of cargoes was also changed. Shipowners formed their guilds

the same as in the case of merchants, and they were dependent on merchants' guilds or most powerful merchants in the guilds, for they did not have enough power to engage in their business with their own capital. The marine insurance policy which was used in those days remains today, and from this policy we can estimate the method of underwriting at that time.

The merchant, who controlled shipowners, concluded a marine insurance contract as an underwriter with merchants whose cargoes were loaded on the vessel. The underwriter called " Uke-oi " got money which should be regarded as freight and insurance premium from the insured. The underwriter paid freight to shipowners out of the money that was received from the insured. When the cargoes were lost, the underwriter paid insurance money equal to the value of cargoes evaluated at the time of contracting. By means of that policy merchants could secure their interests. We cannot know how far this underwriting method prevailed in those days. However it must be admitted that the underwriting business was not separated from that of merchants, and that the insurance premium was combined with the freight. Therefore we should regard the underwriting system in those days as primitive and not rational.

II

In 1868 as the result of the political revolution, a national government was established. This revolution was caused by the pressure of foreign capitalistic countries who desired to trade with Japan rather than from the fall of feudal political powers through the development of domestic industries. In succession to the conclusion of the treaty of commerce and navigation with the United States in 1858, Japan concluded treaties of commerce with other European countries and began foreign trade. Foreigners gained extra-territoriality and established concession settlements at foreign trade ports. After the beginning of foreign trade imports of industrial products and exports of raw silk and tea increased every year while Japan had no customs autonomy. In face of the danger of becoming a foreign colony, the Japanese government had to protect and foster domestic industries strongly while abolishing the feudal economic systems so as to develop a capitalistic economy rapidly. The guild systems were banished and Uke-oi, underwriters of the feudal period were destined to fall. But the necessity for marine insurance

increased as before, for commodity distribution was enlarged to a nation-wide scale and almost all goods were carried by Japanese type sailing vessels because of the underdevelopment of land transports. However, the modern marine insurance business was not established immediately after the revolution, when it was necessary for someone to do underwriting business during the transit period.

We know that Honinsha and the First National Bank had the function of underwriting as part of their business. Honinsha was the semi-official corporation established in 1873 for the purpose of developing the economy of Hokkaido and Karafuto districts, and the government lent the corporation steamers and funds. Its business was sea transportation between Hokkaido and the capital, drawing documentary drafts and underwriting cargoes which were carried by the corporation. This corporation was winded up only one year after its establisment. The reason for its dissolution was not clear though. The First National Bank was established in 1873 and began the underwriting business in 1877. In the beginning its business was confined to general banking business. However with the development of drawing up documentary bills in the northern districts of Japan, it was necessary to underwrite cargoes. But there were no underwriters. Then in 1877 by permission of the Department of Finance the bank began to underwrite the cargoes on which they issued documentary bills. The bank kept up this underwriting business until the Tokio Marine Insurance Company was established in 1879, and then transfered its business to the latter.

Those two, Honinsha and the First National Bank can not be regarded as modern underwriters. Because they were so-called merchant insurers whose business was fundamentally sea transportation or banking, engaging in marine insurance as a side line. And though their underwriting method and techniques were not clear, it does not seem to be always rational.

It is generally admitted that the establishment of the Tokio Marine Insurance Company in 1879 should be regarded as the first modern marine insurance firm in Japan. Since the Meiji Revolution (1868) the government fostered and protected domestic industries and introduced capitalistic production methods and capitalistic institutions so as to develop the economy of Japan rapidly, and to escape from the danger of Japan becoming a foreign colony. With regard to foreign trade and ocean transportation the circumstances did

not permit any exception. The foreign trade of Japan during the early Meiji period may be expressed as colonial trade. In those days foreign trade was carried out by foreign firms at foreign settlement concessions in Japan and almost all goods were exported and imported by those firms. The Japanese government had to develop foreign trade and also a merchant marine against the pressure of cheaper goods produced in capitalistic countries lest it be made a foreign colony. It was under those circumstances that the establishment of modern underwriting was demanded.

The Tokio Marine Insurance Company was established with a capital fund of 1,200,000 yen which was furnished by aristocrats. The government permitted it to begin underwriting business and guaranteed to compensate the loss of the company up to the value of 400,000 yen. The company studied the conditions of European underwriters and began its business following the system of European underwriters. Therefore we may say that this company for the first time introduced marine insurance used in European countries, differing from their predecessors, the Honinsha and First National Bank. The introduction of the European system of underwriting business by the company is clearly shown by the following facts. Mr. Shibusawa, the founder of the company, sent Mr. Masuda to Europe for the purpose of studying the conditions of the marine insurance industry. And in the records of the establishment of the company there were the " Principle of insurance " which was translated into Japanese from the dictionary of commerce, and the translation of policies used by the Shanghai Yanze Insurance Company, etc. The policies of the earliest period of the company do not remain today, however it is supposed that they were made after the model of British under-writers. As a result of the company following the systems of European underwriters, it had less difficulties and needed a shorter preparation period for starting its business. It was enough for the company to learn the experi-ences and customs accumulated by Lloyd's and other underwriters in the process of the development of marine insurance.

At the start of its business, the Tokio Marine Insurance Company insured only cargoes which were owned and traded by Japanese. However from the end of the same year the company began to insure cargoes owned by foreigners also. In those days the trading areas of the company were confined to domestic markets which constituted the coastal routes along the Pacific coast. And the

amount insured was limited to 100,000 yen for a bottom. But later the amount insured was enlarged, and the exceeding amounts to be insured were disposed of by either being reinsured by foreign underwriters at Yokohama or refused altogether.

In 1884 the company began hull insurance with an enlarged capital of a million yen in which 40,000 yen was newly invested by the government. Thus the company showed a favorable development under the protection of the government from its establishment. Its development was supported by the capitalistic development of Japan which produced an increase of demand for marine insurance. From the end of the nineteenth century the company began to insure cargoes imported and exported and ocean going vessels in addition to coastal vessels and cargoes. And in almost the same period the company set up agencies in London and other places.

<div style="text-align:center">III</div>

The establishment of the Tokio Marine Insurance Company indicates the beginning of modern marine insurance business in Japan. After its establishment other marine insurance companies were not established until 1893 when several underwriting companies started business. And then we should answer the question of when the marine insurance industry of Japan was able to stand upon a stable base and keep up their business.

Of course the development of marine insurance was conditioned fundamentally by the development of foreign trade and ocean transportation which created much demand for marine insurance regarding cargoes and vessels. And the establishment of the marine insurance indurtry as a whole should be indicated by the fact that marine insurance firms were able to meet the demands of marine insurance rationally and continuously, or cover losses emerging from the perils of the seas. On the contrary marine insurance before its modern establishment had the tendency of swindling and gambling or lacked institutional or technical preparedness to meet the demand of marine insurance. However, when we wish to study the establishment of the marine insurance industry in Japan, other conditions also should be taken into consideration. For marine insurance companies of Japan were introduced and fostered after European underwriters had already engaged in business in Japan, while imports and exports of Japan were performed by foreign trading

companies, and transportation of cargoes also was carried on by foreign shipping companies. Foreign trading companies and shipping companies which monopolized foreign trade and shipping service of Japan had of course no wish to insure their cargoes and bottoms with Japanese underwriters who had little experience, with small capital, and usually gave their patronage to foreign underwriters.

Thus Japanese underwriters had to wait the development of Japanese foreign trading companies and shipping companies until they had enough power to get back into their hands the foreign trade and ocean transportation of Japan. At that time Japanese underwriters had the opportunity at last to get enough insurance contracts to keep their business and to get rid of the monopolistic powers of foreign underwriters. Therefore the establishment of the marine insurance industry in Japan should be studied in the process of the capitalistic development of Japan, especially that of foreign trade and shipping, in addition to the institutional development of marine insurance.

a) development of shipping industry

We may say that Japanese shipping industry had settled down at the end of the nineteenth century. The Nippon Yusen Kaisha (N. Y. K.), whose predecessor the Mitsubishi Kaisha had been established in 1875 and had been fostered by the government, began its shipping service from Japan to Bombay in 1893. It was the first ocean shipping service for Japan, and the N. Y. K. succeeded in keeping its service after a hard struggle with British lines. Moreover, the N. Y. K. opened routes to Europe, the United States and Australia in 1896, and thus the N. Y. K. succeeded in placing vessels on the main trade routes of Japan. In the same year the Japanese government strengthened its fostering of shipping by means of the Shipbuilding Promotion Act and Navigation Promotion Act. Before that time foreign shipping had been cleared from coastal trade routes already, and besides the Osaka Shosen Kaisha (O. S. K.) had placed vessels on the routes to China ports and other nearby sea trade routes. Thus the Japanese shipping industry, having been established at the end of the nineteenth century, began to show a more splendid development after the Russo-Japanese War of 1905.

b) development of foreign trade

For the purpose of making clear the problem with which we are here concerned, the increase of the foreign trade of Japan has of course some

meaning, however more important for us is to recognize when the import and export of Japan began to be performed independently by Japanese trading companies. During the early period of the Meiji era the foreign trade of Japan was carried on by foreign trading firms which had the privilege of extra-territoriality as a consequence of the treaties of commerce and navigation concluded between Japan and capitalistic European countries. The march of foreign underwriters into Japan coincided with those conditions. Accordingly the mere increase of the volume of foreign trade of Japan did not produce an increase in demands for Japanese underwriters, rather it resulted in more profit and showed the superiority of foreign underwriters. Therefore it is necessary for us to pay attention to the increase of goods exported and imported by Japanese firms, and the establishment of a customs autonomy and the abolition of the extra-territoriality which enabled the result mentioned above.

As a result of the remedy and the enforcement of treaties of commerce and navigation of July 17, 1899, consular jurisdictions in Japan were abolished and customs autonomy was partly attained. Though the attainment of customs autonomy in 1899 was perfunctory, it was useful in preventing the fraudulent practices of foreign trading firms, which had often been seen in the foreign trade of Japan during the early period of the Meiji Era, and it made possible for Japanese to trade under ordinary commercial practices. In this relation we can not overlook the effect of the enforcement of the commercial code of 1899.

At first foreign trading firms monopolized the foreign trade of Japan. Thenceforth the influence of foreigners decreased by degrees and in 1908 Japanese trading firms handled over half the foreign trade of Japan for the first time. It is said that after the First World War Japanese trading firms were able to handle all exports and imports of Japan.

c) Institutional development of marine insurance

Forms of insurance policies

The cargo policy in Japanese used by the Tokio Marine Insurance Company at the beginning of its business, followed a modified Japanese version of Lloyd's policy. This policy was used by the Tokio Marine Insurane Company and other Japanese underwriters until the forms of marine insurance policies in Japan were unified in October 1898. The Hull policy was also

based on the form of Lloyd's policy and its contents consisted of three parts; parts of items to be designated, parts to be regarded as ordinary clause and parts to be regarded as particular clause.

As a result of the enforcement of the commercial code on July 1, 1898, the Tokio Marine Insurance Company and three other underwriters decided to improve and to unify their policies from the necessity of harmonizing them with the commercial code which was founded on the continental law, and underwriters made special contracts with each other regarding matters not prescribed in the code. Consequently the first unified marine insurance policies were formed in October 1898, and carried into effect in November of the same year. Those policies, so-called "forms of 1898's" followed fundamentally Lloyd's policies, though it prescribed more minutely the part of the ordinary clause after the model of continental policies.

Institutions of vessel inspection

Vessel inspection which was the premise of modern and rational marine insurance was carried out as early as the beginning of underwriting by the Tokio Marine Insurance Company. The Company made a request for vessel inspection to the Department of Transportation at the beginning of its business and concluded marine insurance contracts with only cargoes loaded on bottoms which were certificated by the Department of Transportation as seaworthy. Therefore, though the government did not adopt the system of compulsory vessel inspection in those day, the company was relieved of the occurence of loss caused by the defects of vessels. At first the company rendered services of vessel inspection with every contract, but in May 1882, it advertised that it had adopted the rules of shipbuilding used by the Board of Vessel Control of the government, and insured only cargoes which were loaded on vessels adapting such rules.

In November 11, 1883 the government decided to establish an institution for vessel inspection in compliance with the request of the Tokio Marine Insurance Company that had the intention of beginning hull insurance. And then vessel inspection offices were opened at Kobe and Hakodate with the enforcement of the rule of inspection for western type vessels on December 22, 1884. The rule prescribed compulsory vessel inspection regarding western type vessels and vessels which passed inspection were given certificaion. The Department of Agriculture and Commerce ordered the Tokio Marine

Insurance Company not to insure both cargoes and vessels unless the vessels to be insured had certificates given by the inspector or cargoes to be insured were to be loaded on the vessels certified. That order had the proviso that marine insurance contracts could be concluded without inspection with vessels which were certified by Lloyds and other foreign vessel inspecting institutions. As the next step the government enforced the vessel Inspection Law in April 1896. Thus the system and institution of vessel inspection was established in Japan.

Enforcement of Insurance Business Law

In the early period of the insurance business in Japan the government regarded and regulated insurance corporations the same as usual commercial companies and had no special regulating rules for underwriters. But after the Sino-Japanese War of 1894—1895 inflation and the inflow of the indemnity from China stimulated the fever of starting enterprises, but many bubble insurance companies were doomed to fail. As a consequence the government gave up its laissez-faire policy toward underwriters.

Thus from July, 1898 the commercial code was enforced and the Insurance Business Law was enacted on July 1, 1901. The enactment of those acts should be regarded as the intention to rationalize and regulate commercial transactions, and the latter act including the licensed system created the situation of placing insurance companies under governmental control so as to protect the interests of the insured. The Insurance Business Law prescribed that those who wished to establish an insurance company were requested to ask permission of competent authorities and that insurance companies had to accumulate a liability reserve fund to be fixed by the prescribed rule. By those policies the fundation of insurance firms became solid and the interests of the insured were also secured.

At the same time regulation against foreign underwriters began, too. Based on Imperial ordinance No. 380 the Minister of the Department of Agriculture and Commerce ordered foreign insurance companies to deposit 100.000 yen by the end of that year. And the abolition of extra-territorial jurisdiction was also carried out about the same time as mentioned before. Up to that time there were no regulations for foreign underwriters. At the time of the enactment of the Imperial ordinance there were twenty-six marine insurance companies operated by foreigners, in which six companies engaged

in fire insurance also, but by October 1906 foreign underwriters were reduced to ten companies.

The basis for the steady development of the marine insurance industry of Japan was established, we may say, after the Russo-Japanese War of 1904 to 1905 at the latest. In 1904 there were 26 home marine insurance companies compared with ten foreign underwriters in Japan. In 1904 and afterwards new contracts concluded with Japanese underwriters increased in value ten times in comparison with those of foreign underwriters. The premiums received by Japanese underwriters also showed almost the same results. Because of the lack of statistics, we cannot compare the activities of Japanese underwriters with foreign underwriters in Japan before 1904. However, the facts mentioned above suggest to us that Japanese underwriters got almost all contracts in Japan in the earlier period of the twentieth century. Of course it does not mean that they could insure the large part of cargoes exported and imported in Japan, but it means that they could meet the demands for marine insurance in domestic markets which grew rapidly. Therefore, the marine insurance industry of Japan was established, we may say, with the basis for its steady development after the Russo-Japanese War of 1904 to 1905 at the latest. And our conclusion is also supported by the institutional development of marine insurance including the enactment of the Insurance Business Law on the one hand and the splendid development of foreign trade and shipping of Japan on the other hand.

A ASSIMILAÇÃO DO IMIGRANTE JAPONÊS NO BRASIL[*]

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No ano de 1958, a imigração japonêsa para o Brasil comemora, o seu cinquentenário. Iniciada em 1908, êssa corrente imigratória trouxe, até o ano de 1955, cerca de 200 mil migrantes para o Brasil, entremeiada com uma interrupção de dez anos — de 1942 a 1952 —, quando se deu a última guerra mundial. Dentre os 185 mil japoneses, aproximadamente, entrados no País no período anterior à guerra, mais de 70% chegaram nos onze anos que precedem a 1936, fato que atesta inegavelmente sua recenticidade histórica em contraste com outras correntes, em especial, as européias.

População — Pela ausencia de dados censitários fidedígnos e devido á sua localização esparsa em vários Estados, não dispomos de números exatos sôbre a população de japoneses e seus descendentes. Uma pesquisa por nós levada a efeito em 1952-53, mostrou que a proporção entre os *issei* (imigrantes) e *nisei* (descendentes) era de 100 : 170, respetivamente (Izumi e Saito 1953). Calculando-se a população sobrevivente dos *issei*, naquela data, em 127.238 (Yamamoto 1949), teremos uma população de *nisei* em 216.305, sendo a população total de 343.543. Seguindo o mesmo critério, a população nipo-brasileira no

fim de 1955, seria aproximadamente de 364.791. Somados a êsse número, os que vieram no após-guerra, cerca de 7.717, a mesma população estaria orçada, então, em 372.508. Tendo em vista, ainda, certo número de japoneses que entraram no Brasil, vindos de outros paises sulamericanos, podemos afirmar que a população nipo-brasileira no país, em fins de 1955, não ultrapassava a 380 mil pessoas.

Tipos do imigrante —— É conhecido que êssa corrente imigratória foi encaminhada para os diversos setores de atividades agrícolas, originando-se, desse fato, a concepção, não digamos errônea, mas pelo menos confusa, de que todo o imigrante japonês proveiu do meio rural. Na verdade, tratava-se de grupos mistos, com a predminância de componeses, mas com consideràveis parcelas de assalariados, pequenos comerciantes, operarios e outros elementos urbanizados. A contribuição desses últimos foi particularmente notàvel a partir de 1925, pelo recrudescimento da migração rural-rubana no Japão, ocasionada por uma série de problemas sócio-económicos tão característicos das fases de intensa industrialização.

No Estado de São Paulo, para onde se dirigiu o grosso da corrente, a maior parte dos japoneses foi encaminhada, como trabalhadores contratados, nas grandes fazendas de café. Outros, em número consideravel, estabeleceram-se desde o início, como proprietários, nos diversos núcleos, criados e assistidos por empresas de imigração e colonização. Êssa diferença nas modalidades de estabelecimento deu margem, como é obvio, a uma diferenciação no posterior processo de acsensão social do imigrante. Os trabalhadores contratados tiveram que buscar, após uma regular permanência nas fazendas de café, os meios de se tornarem lavradores independentes, formando, nesse itinerário ascendente, núcleos espontáneos em diversas regiões de São Paulo e Paraná, em contraste com os núcleos previamente planejados e assistidos por empresas de colonização. A mesma diferença acarretou, igualmente, uma maior ou menor verossimilhança, de um lado, e na maior ou menor rigidez e flexibilidade, de outro, na reconstituição da organização social da sociedade de origem (Willems e Saito 1947).

2. Mobilidade social e espacial

Quem teve a experiência de travar contatos diretos com imigrantes japoneses ou acompanhar de perto a evolução dos grupos dessa etnia nos

últimos decênios, sabe que êles são extremamente móveis, ou pelo menos, tem sido assim até agora. Cada família de imigrante é portador de experiencia, em média, de quatro a seis mudanças de residência durante os primeiros quinze anos após a chegada no País. São frequentes as famílias de imigrante que se deslocam de oito ou mais vezes num prazo de vinte e poucos anos. Geralmente, cada um desses deslocamentos corresponde à mudança de status : de colono a arrendatário, de arrendatário a proprietário, ou vice versa.

Para os imigrantes colonos de café, os estágios de sua ascensão têm sido os seguintes : a) permanência de dois a tres anos de trabalho como colono nas fazendas de café ; b) após o que procuram formas de trahalho mais favoraveis como contratistas, meciros ou arrendatários durante um período que varia de tres a cinco anos ; c) finalmente, com os recursos acumulados, tornam-se pequenos proprietários. O tempo consumido nessa linha ascensional é variado : doenças, calamidades e outras pequenas desgraças são suficientes para que a família do imigrante retroceda ao ponto de partida, para novamente começar o itinerário.

Nesse processo de diferenciação social, há, naturalmente, elementos que, por desajustamento ou por apego às outras profissões, desistem de atividades campesinas para abraçarem outras ocupações. São, por exemplo, os pequenos comerciantes, empregados de escritório, operarios e outros artífices que, embora em número reduzido, surgiam, antes da guerra, nos pequenos centros unbanos do Interior, onde era numerosa a presença de grupo japonês.

É de se notar, também, que êsses deslocamentos de antes da guerra eram realizados em grupos, já pelo sentimento de insegurança e riscos que apresentava a migração individual, sem ainda o adestramento suficiente na cultura dotiva e o ajustamento tecnológico completo ao novo meio.

No após-guerra, a mobilidade do imigrante japonês continua a ser intensa, porém com uma diferença contrastante com o mesmo fenômeno de antes da guerra : o abandono, quase por completo, da idéia outrora comum de " sucesso rápido e retorno ao País de origem." Numa pesquisa por nós realizada em 1952-53, cerca de 90% de pessoas entrevistadas afiançara-nos sua disposição de " se fixar e morrer nesta terra." A tendência de fixação é, ainda, demonstrada nos seguintes algarismos : em 1938, as percentagens ocupadas pelos proprietários rurais e os não proprietários (trabalhadores e arrendatários) eram de 56,4 e 43,6, respetivamente ; em 1952, a mesma proporção foi de 71,0 e 29,0 (Izumi

1954).

Hoje, a mobilidade do grupo japonês no espaço, inclusive a dos seus descendentes, apresenta dois caraterísticos principais : a) a remigração de grupos em sentidos contrários, isto é, movimentos *centrífugo* e *centrípeta;* b) uma intensa diversificação ocupacional.

De fato, quaisquer que sejam os degraus escalados por imigrantes, para sair de sua posição de simples trahalhador rural e chegar a situação de proprietário ou posição equivalente em outras ocupações, observa-se, nos anos recentes, a intensificação de dois movimentos em sentidos contrários : uma corrente *centrífuga* flui sempre em busca de zonas pioneiras ora em desbravamento nos Estados de Mato Grosso, Paraná, Goiás e outros. Ali os japoneses trahalham, lado a lado, com os migrantes procedentes de outras regiões do País. A outra corrente no sentido *centrípeta* está atraindo os japoneses, à semelhança de migração rural-urbana, nas áreas subrubanas de grandes cidades como São Paulo e Rio de Janeiro, dedicando-se à agricultura intensiva que abastece as populações metropolitanas.

Segundo nossas observações, tanto o movimento *centrífugo* como *centrípeta* são oriundos das alternativas com que depara o imigrante em dada época e em determinado estágio de sua mobilidade. A prova disso é que, fazendo pesquisas tanto nas zonas pioneiras como nas áreas suburbanas, encontramos membros do mesmo grupo de parentesco ou da família, cujo desmembramento tem se verificado em alguma parte do Estado de São Paulo onde residiam juntos.

A mudança de lavradores japoneses e seus filhos para outras ocupaçãoes, tais como pequenos comerciantes, industriais, profissionais de diferentes ofícios e assalariados em geral, é notável nos anos recentes, não só nas grandes cidades, mas também nas pequenas cidades do Interior. É interessante notar que essa mobilidade ocupacional não é mais limitada, como aconteceu antes da guerra, à comunidade étnica, mas sim, entrosando-se cada vez mais com as instituições da sociedade dominante. Os comerciantes têm sua maior clientela nas pessoas de outras origems étnicas; os profissionais atendem mais brasileiros que seus compatriotas e, assim por diante. Sem dúvida, à medida que se amplia o âmbito social do grupo, os elementos a êle partencentes são enquadrados na estrutura maior e os canais de ascensão social são mais encontradiçõs no meio urbano.

Tudo isso nos leva a crer que os imigrantes que entraram no Brasil na

época anterior à última guerra, estão atingindo fases mais adiantadas no processo de assimilação. Os primeiros anos que se seguem à chegada ao País são consumidos na aquisição de novos conhecimentos, na acomodação aos novos padrões de comportamento, a fim de fazer face aos problemas que surgem do contato com a cultura diferente. Nessa fase de ajustamento, os imigrantes raramente se arriscam a deslocamentos individuais por ser grande o risco apresentado por tais aventuras. Preferem, então e, sempre que possível, deslocar-se em grupo, por sentirem assim maior segurança. Mais tarde, quando o processo de aquisição da cultura adotiva já vai avançado, os imigrantes sentem-se encorajados a buscar as áreas até então de desconhecidas e tentar outras ocupações.

3. Tendências atuais

A organização social e as instituições —— Os japoneses e seus descendentes no Brasil não constituem, *in strict sense*, um grupo de minoria (minority group), já pela ausencia de mecanismos específicos para sua persistência, já pela ausência de discriminação rigorosa da parte da sociedade dominante. Talvez, por essa razão, não reparamos senão em diminuta escala, a presença de *instituições étnicas paralelas* (parallel ethnic institutions) de que se observa na comunidade japonêsa nos Estados Unidos (Broom and Kitsuse, 1955). No entanto, isto não quer dizer que os japoneses não possuam sua organização social à parte e diferente das instituições da sociedade maior.

Os japoneses desenvolveram certos tipos de associação, cuja decomposição é possível em vários níveis ou amplitudes. De maneira geral, há duas esferas em que se distinguem as áreas de seu controle: 1. Instituições de maior amplitude que *visam* abranger todos os elementos da comunidade étnica japonêsa, independente do controle que *realmente* possam exercer essas instituições; 2. Instituições de amplitude menor, das quais depende, de maneira direta, a organização de comunidades locais japonêsas à semelhança de organização comunal de *mura* (village) e, porisso, com maior grau de integração social.

Entre as instituições de maior amplitude, ou *globais*, contam-se numerosas associações que atuam nos setores de esporte, religião, recreação, educação e fins similares, cada qual com sua " agenda," isto é, realizações cíclicas previstas. Essas associações caracterizam-se pelo maior ou manor grau de exclusivismo em relação à sociedade dominante: algumas estão plenamente entrosadas com as instituições similares brasileiras; outras são limitadas dentro da comunidade

étnica. No setor esportivo, por exemplo, as associações de *jiujitsu* (judo) contam no seu seio numerosos membros brasileiros; as de atletismo promovem competições regulares com as correspondentes brasileiras depois de preliminares intercomunitárias; as de *base-ball* congregam apenas os elementos de origem japonêsa, apesar de se filiar a uma federação oficial, pela simples razão da ausência de instituição similar na tradição brasileira. O mesmo se pose dizer das instisuições religiosas: as associações católicas ou protestantes estão bastante entrosadas com as similares brasileiras ao passo que as de seitas budistas são de caráter exclusivista.

As instituições globais estão longe de exercer, como o pretenderiam, o contrôle sôbre a comunidade étnica *total*, sendo apenas permeaveis a seu contrôle aqueles que só mediante êssa alternativa podem satisfazer suas necessidades. Regra geral, o alcance do contrôle exercido por essas instituições sôbre os elementos de origem japonesa é proporcional à distância que separa os indivíduos ou grupos de duas culturas, a brasileira e a japonesa.

Em contraste, as associações de amplitude menor sob as quais persiste a organização de comunidades japonesas locais, na maioria das vezes, rurais, são resultantes do processo de reconstituição e modificação da organização social do País de origem e, porisso, caracterizam-se pela maior integração social e maior eficiencia de sanções organizadas (Saito, 1954-55). Quase todos os núcleos rurais, formados por imigrantes japoneses nos Estados sulinos do Brasil, são possuidores desse tipo de organização, embora se verifique pequena variação na forma e em conteudo. São, por exemplo, representadas por agrupamentos tais como *Niponjin-kai* (Associação japonesa), *Seinen-kai* (Associação de juventude), *Fujin-kai* (Associação de mulheres) e outras semelhantes, juntamente com a divisão formal de grupos de vizinlhança e respectivo sistema de cooperação.

Esses agrupamentos, de idade ou de sexo, têm raizes na cultura de origem bem como no seu sistema dinâmico por meio do qual são postos em funcionamento e continuação tendo *consistência* e *integração* enquanto durarem as condições favoráveis ligadas à comunidades rurais.

É interessante notar que, fora desses núcleos rurais, as associações de tipo exclusivista tendem a enfraquecer, ou mesmo, a desaparecer entre os japoneses residentes nos centros urbanos, sobrepondo-se aí os interesses econômicos, ocupacionais e de classe aos de ordem étnica. Visivelmente, os impactos de modernização passam a subjugar a resistência cultural ou social dos grupos

de imigrantes, à medida que estes se afastem da ésfera de contrôle das instituições étnicas. Muitas vezes, o fenômeno é mal percebido pelo próprio grupo étnico e a comunidade japonesa local não está consciente da evasão de seus membros para a comunidade dominante.

Mudanças de cultura material —— As técnicas de subsistência e os instrumentos de trabalho são, via de regra, mais susceptíveis à mudança. Neste particular, a " bagagem cultural " que é trazida pelo imigrante se revela pouco útil ao cabo de primeiros anos, sendo, então, substituida por equipamentos tecnológicos da cultura adotiva. É quase surpreendente a rapidez com que se processa essa substituição : um estudo sôbre o processo de acomodação entre os imigrantes de após-guerra, mostrou que ao cabo de dois anos, a maior parte dos instrumentos de trabalho agrícola, assim como bôa parte dos utensílios caseiros havia sido substituida. Entre os imigrados antigos que chegaram ao Brasil nas épocas anteriores à guerra, a habitação e o vestuário não conservam mais traços da cultura originária, senão em detalhes quase insignificantes (Saito, 1955). Traços culturais japoneses, porventura conservados nos estilos arquitetônicos e nos aspectos funcionais da moradia, são muitas vezes substituidos ou eliminados, mais tarde, por ocasião da construção de moradias novas e mais confortáveis.

A alimentação e os hábitos alimentares parecem constituir, entre os elementos da cultura material, aqueles que se mostram mais persistentes. A mudança, neste caso, não implica, necessariamente, a substituição ou eliminação de traços ; toma mais a forma de dualismo, mediante a adoção de novos traços e a persistência dos antigos, o que torna verdadeiramente complexos os padrões alimentares do imigrante japonês. Mas, a forma de dualismo não é uniforme, nem consistente, comforme as circunstâncias o exigirem, os imigrantes adotam quase que integralmente os padrões alimentares da cultura adotiva, com desprezo dos seus, para mais tarde, logo que circunstâncias o permitam, recuperar seus hábitos antigos. Já na segunda geração, porém, a mudança é mais patente : os *niseis* preferem a carne ao peixe, o feijão ao arroz simples, o tempêro de gordura e alho aos condimentos japoneses.

Família e parentesco —— O drama profundamente humano no decurso do processo de assimilação toma sua forma mais tangível na vida familial do imigrante, e em especial, na relação de pais-filhos, a qual experimenta, mais cêdo ou mais tarde, tranzes agudos. Em seu processo de socialição, os filhos de japoneses passam por experiências, muitas vezes contraditórias dentro e fora

do lar, entrando em choque os padrões ideias de duas culturas distintas a que estão ligados. Os pais valorizam, geralmente, a educação formal de seus filhos, fazendo-os estudar em escolas secundárias e superiores brasileiras, gesto a que se atribui um duplo sentido : a) desejo de os filhos adquirir o conhecimento linguístico e da cultura adotiva, compensando, assim, a desvantagem com que tiveram que lutar na competição com os brasileiros, b) o atribuir-se grande valor à educação formal em termos da tradição japonêsa.

Aparentemente paradoxal a êsse procedimento, os pais temem ao mesmo tempo que, com os conhecimentos adquiridos, os filhos passem a comportar-se de maneira diferente de seus pais, afastando, assim, cada vez mais, as expectativas recíprocas de comportamento. Pretendem controlar, então, a conduta de seus filhos de acôrdo com as normas do familialismo japonês, exaltando o valor do amor filial, encarecendo a obrigação moral de os filhos, inclusive noras e genros, sustentarem e ampararem os pais na velhice. Os meios de solução de que lancam mão os pais nessa emergência são vários : um deles consiste em que, por meio de ensino da lingua japonêsa, incutir na mente dos filhos o que se chama de " espirito japonês," a pretensa espinha dorsal da moralidade japonêsa. Outro meio é procurar uma nora *ideal*, pelo menos para o primogênito, que tenha uma educação tipicamente japonêsa e que corresponda exatamente às expectativas dos pais. Daí a grande importância que os japoneses ligam à manutenção de escolas de lingua japonêsa e a prosperidade de escolas domésticas destinadas às moças, onde se ensinam as etiquetas japonesas. Esquemàticamente falando, desse procedimento dos *isei*, o conhecimento da lingua japonesa equivaleria à aquisição do chamado " espirito japonês " que, por seu turno, significaria a manutenção do sistema familial japonês.

Mau grado a tentativa de racionalização por parte dos pais, a realidada é que os filhos reagem a êsse procedimento dos pais, às vezes masmo com frontal contrariedade. Os *nisei*, educados nas cidades, sentem-se atraidos cada vez mais pelos padrões ideais da sociedade dominante. Ante tal reação, a atitude dos *isei* se modifica, traduzindo-se em recuos com boa dosagem de conformação. Quando a acomodação de avanços e recuos e o reajustamento sucessivo de relação pais-filhos não se processarem de maneira desejável, surgem, então, conflitos, com a inevitável provocação de desorganização familiar. A fuga de jovens de ambos os sexos, as crianças abandonadas, muitas vezes frutos de uniões socialmente não sancionadas, o suicídio de velhos solitários, cujas notícias são

frequentes nos jornais, são sinais desse drama familial do imigrante japonês.

O problema do intercasamento, ponto cruciante na relação pais-filhos, representa até certo ponto, a tendência observada na assimilação. Apesar da opinião estereotipada de que o japonês é pouco propenso a matrimonios inter-étnicos, é surpreendente o aumento das uniões desse caráter, especialmente nos últimos três ou quatro anos. É sinal de que os *mores* realcionados com o sistema familial, na nossa opinião, a maior barreira no caminho da miscegenação, estão se desmoronando. A atitude dos pais em relação ao matrimônio de seus filhos com cônjuges de origem étnica diversa, está se modificando ràpidamente : de atitude de "renegação terminante" de há uns dez anos passados, passou há, digamos, uns cinco anos, à de "contrariado" e de "constrangido," e agora, os pais mostram-se em geral, "conformados." Neste particular, os *mores* japoneses estão perdendo seu carater sagrado, cedendo lugar a aparatos de como salvar as "aparências." É claro que, em se tratando de miscegenação em que entram em jôgo a atitude de ambas as partes, seu aumento sensível implica a modificação, no sentido favorável, do comportamento equivalente do grupo dominante. A respeito, temos certeza de que a fraca aceitação demonstrada num inquérito realizado em 1941 (Willems, 1948) —— apenas 5,12% para casamento —— deve ter sofrido uma profunda alteração nestes quinze anos.

O que acima ficou dito, não se aplica de maneira uniforme a todo o grupo japonês, que apresenta uma maior ou menor variação segundo as camadas, áreas de residência e graus de aculturação. Nesse ponto, a variante "rural-urbana" será, talvez, a de maior significação. Nos núcleos rurais, onde se mostra consistente a organização social do *mura*, a miscegenação encontra ainda uma maior resistencia, ao passo que, nos meios urbanos, a tendencia é francamente favorável à aculturação, em geral, e à miscegenação, em particular. A mesma diferença entre os meios rural e urbano se observa em relação à aculturação lingüística : na cidade, a lingua japonêsa é conservada apenas entre o número restrito de *nisei*.

4. Relações inter-étnicas

Apesar de diferenciadas, aparentemente, por um profundo hiato, a cultura luso-brasileira e a japonêsa não experimentaram até agora, como muita gente o suporia, em quase meio século de contato, conflitos sérios e generalizados, que acarretassem ou resultassem numa discriminação recial ou social em relação ao

grupo migrante. Talvez atuassem certos fatores histógicos e ecológicos; ou, apesar de sua aparente diferença nos aspectos manifestos da cultura, talvez existissem fatores favoráveis nos aspectos menos tangíveis, como valorações e motivações. A diferença de cultura afetou, é verdade, a tensão nas relações entre a geração dos emigrados e a de seus filhos, aquela pertencente à cultura japonêsa e esta à cultura luso-brasileira, provocando choques e conflitos dentro da propria comunidade étnica que, no momento atual, atravessa a fase de transição. Mas, essa diferença cultural não tem provocado, pelo menos até agora, reações constantes que chegassem a criar situações institucionalizadas entre os dois grupos étnicos em contacto. A ausência de tensão permanente, e sobretudo, generalizada, entre os dois grupos, deve-se em boa parte, à susência, por sua vez, de padrões discriminatórios da propria cultura luso-brasileira.

No passado, conhecemos alguns casos de choque ou conflito entre a população de origem japonêsa e as de outras origems, cujos efeitos, na maioria das vezes, são restritos ao âmbito regional ou local. Nesse sentido, podem-se destacar certos tipos de choques: 1. As cooperativas agrícolas, cuja criação se deve à iniciativa de japoneses, suscitaram no decurso de seu desenvolvimento um estado de competição com os comerciantes brasileiros que se tornaram seus rivais. 2. Em alguns centros de colonização japonêsa, particularmente naqueles de maior antiguidade, desenvolveram-se, igualmente, uma acirrada competição entre os negociantes japoneses, de um lado, e os de outras origems, de outro; competição essa que se degenerou, em alguns casos, em conflitos quando a luta era transferida para o cenário político local. É de se notar que, num e noutro, o caráter fundamental da competição não é senão fenômeno social "normal" que se observa em todos os grupos sociais. Quando, porém, a competição entre grupos étnisos se desenvolve e atinge tal intensidade que chega a ameaçar, pela concorrência movida pelo grupo migrante, o status de um determinado grupo da sociedade receptora, surgem conflitos, sendo invocados, então, fatores étnicos e a " marca racial." São, portanto, conflitos que surgem em função da " marca racial " e de *classe*, condicionados à certas circunstâncias peculiares.

A função de *classe* e de "*marca racial*" no desencadeamento da competição e conflito no caso específico de que estamos trantando, será melhor compreendida à luz das seguintes circunstâncias:

a.) Na zona rural, quando os colonos japoneses formaram seus núcleos o

contato aí estabelecido foi com os camponeses brasileiros da redondeza, os chamados *caboclos*. O contato, em sua fase inicial, se desenvolve no plano ecológico, com a subsequente acomodação simbiótica. As modalidades de coexistência são várias, dependendo do nível em que se efetua o contato : em geral, a população da camada " baixa," constituida de pequenos proprietários e trabalhadores, se torna uma fonte de braços para lavradores japoneses, ao passo que a camada " alta," constituida de grandes proprritários e negociantes, fornece meios de produção aos japonêses, tais como transporte, financiamento de mercadorias e locação de terras cultivaveis, quando se tratam de japoneses não proprietários.

b.) Ao cabo de alguns anos, o quadro apresenta, na comunidade local, uma nova disposição de ordem econômica e social : a camada " baixa," constituida de trabalhadores *caboclos* ; a formação de uma camada " media " com a absoluta maioria de pequenos produtores de origem japonêsa ; a camada " alta " de negociantes e grandes proprietários, está já incluindo alguns de origem japonêsa que lograram progredir na escala social.

c.) Justamente nessa fase é que se desencadeia a competição e conflito entre as instituições e comerciantes japoneses, de um lado, e elementos congêneres brasileiros de outro. O grupo " nativo " ameaçado em seu status, apela então a recursos políticos, atribuindo ao conflito um carater pretensamente étnico ou político conforme o caso.

d.) A quarta fase é squela que estamos presenciando atualmente na maioria de núcleos japoneses nos Estados de São Paulo, Paraná e regiões próximas : à medida que se torna firme a presença, na comunidade local, do elemento japonês, cuja força econômica é refletida, em parte, como uma expressão política através de seus descendentes em gozo de direitos políticos, a competição e, porventura, o conflito tendem a perder seu carater étnico, passando a situar-se no plano geral.

Do exposto, deprende-se que as relações étnicas, limitado o seu sentido na relação inter-grupal, obedece, a um determinado ciclo, à semelhança de *race relations cycle* (Bogardus, 1930 ; Park, 1937). Começando com a fase em que se realiza a acomodação simbiótica no plano ecológico e curiosidades mútuas no plano cultural, o contanto segue uma sucessão de estágios em que pesam as atitudes estereotipadas de ambas as partes, a " marca racial," cenario político local, chegando, enfim, a uma configuração com maior equilíbrio e estabilidade

nas realções étnicas, e portanto, menos sujeita ao surto de conflito. Os núcleos rurais, formados com grandes parcelas de elementos japoneses, estão, a nosso ver, atravessando ou chegando às fases finais desse ciclo.

Nessa altura, conviria acentuar certas condições culturais que se manifestam nas relações étnicas. Estudos recentes demonstram que em certas comunidades, as quais já adquiriram a configuração acima relatada, há, no caso do japonês, um desfasamento no status social com o econômico. Em outras palavras, o status do japonês expresso em força econômica, não tem manifestação correspondente no seu status social, devido a fatores culturais tais como conhecimento deficiente da lingua e da etiqueta, que tornam obstáculos ao estabelecimento "normal" de interação social e, consequentemente, de contato íntimo e de natureza primária entre a população japonêsa e a brasileira. É de se supor que tais obstáculos sejam gradativamente removidos, uma vez que a expressão social dos *nisei* supere a dos *issei* (imigrantes).

As relações de compadrio assume, nesse sentido, importante papel para promover as relações íntimas e familiares. Observamos frequentemente que as ligações afetivas, trazidas pelo compadrio, diminuem os obstáculos que se originam da diferença cultural.

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RATE OF PROFIT AND INTERNATIONAL SPECIALIZATION OF PRODUCTION

Hikoji KATANO

1. The traditional theory of international specialization of production deals with the problem of determining the specialized state for each country in a balance of payment equilibrium under given prices (or its components) and resources. However, in this paper, I intend to clarify to what extent we can recognize an international specialization of production with given prices (or its components) and free resources. The conclusion is that, whenever we are given prices (or its components), we can point out specialized commodities or unspecialized commodities for all international equilibrium prices.

The traditional theory of international specialization of production shows us that, when we are given prices (or its components), we can only pick up the most profitable commodity and the most unprofitable commodity in international trade. Therefore, in the case of three or more commodities, a specialized state should be recognized in a balance of payment equilibrium with given resources. However, in the traditional theory, it may be assumed that all commodities are specialized for all countries according to the relative quantities of resources for each country. In this paper, I will develop a critique on the above-mentioned point in the traditional theory. A summary of the critique is as follows: The traditional theory has been developed from the point of view of the theory of demand. However, from the nature of the theory of international specialization of production, this must be developed in the light of the theory of production cost.[1] Thus the idea of the traditional theory is forced to explode. Why? The reasons are elucidated in the following sectors.

2. In this paper, I will clarify to what extent we can tell about international

specializations of production under fixed conditions of production and real wages
for each country. The conclusion deduced from this reasoning may be used in
the case of determining a specialized state under fixed resources for each country
in the other stage.

In this paper, I will deal with this problem in a two-countries and three-
commodities case; I and II country for two countries and 1-st, 2-nd and 3-rd
commodity for three commodities, where any one of three commodities may be
either production goods or consumption goods but all of these are neither pro-
duction goods nor consumption goods.

Why I do not deal with a generalized case (multi-countries and multi-
commodities case) but two-countries and three-commodities case is that the
methematical difficulties for the generalized case would be too much for me.
However, the conclusion in this paper may be much used in the generalized case.

For simplification, in this paper, I have made the following assumptions:

(a) no tendency for monopolistic competition,

(b) constant return for scale of production,

(c) constant preference of consumption for prices,

(d) no international transfer of labor and capital,

(e) to eliminate international transportation cost and other similar costs.

These assumptions make our theory more inferior than the traditional theory in
some respects. For example, assumption (c) eliminates the traditional analysis

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(1) The theory of international specialization of production must be explained
for the problem, what commodities a country produces under given
techniques and tastes. In such a problem, equilibrium should be defined
as a state in which there is a constant demand-supply under constant
techniques and tastes. This is the state where demand and supply are
completely equalized under such prices as to give capitalists a profit
accounted by the average rate of profit: This is a long-time equilibrium
in the sense of A. Marshall. Such an equilibrium can not be defined by
only the simple equilibrium of demand to supply. The simple equilibrium
of demand to supply is meant by the state in which all prices are
determined in order to equalize demand with a given supply. But as
these prices give capitalists a profit under or above the average rate of
profit, the supply may change in the long run. An equilibrium defined
as a simple equalization of demand to supply may be broken down soon
after its coming into existence, and then be realized in other levels of
demand and supply. This process continues to the state, with the equali-
zation of demand to supply, as to give capitalists a profit accounted by
the average rate of profit. For the above-mentioned reason, an equilibrium
defined as a simple equalization of demand to supply is not true in the
theory of international specialization of production from the point of
view of the theory of production cost.

of the consumer's behavior. But I believe the most important point in studying a capitalistic economy is to analyze the capitalist's response according to given conditions. It may not be too late to deal with the problem of the consumer's behavior after the problem of the capitalist's response has been completed.

3. Before analyzing an economy with foreign trade, in preparation for later stages, I will clarify the relation of relative prices to the rate of profit in an economy without foreign trade.

3.1 Notations, which are needed for the moment, are defined as follows:

a_{ij}^k : quantity of j-th commodity needed for production of one unit of i-th commodity in country k,[2]

$\bar{p}_i^k$: price of i-th commodity in country k,

r_i^k : rate of profit of i-th commodity production section in country k,

In this section, I will, for simplicity, eliminate superscript k on each notation because of the argument of a common state for each country.

In the economy of a country, there are the following relations between relative prices and rate of profit.

$$(3.1) \qquad \sum a_{ij} p_j (1+r_i) = p_i \qquad i,\ j = 1,\ 2,\ 3.$$

$$p_i = \frac{\bar{p}_i}{\bar{p}_3},$$

where 3-rd commodity is taken as a numèraire. These relations are equilibrated under an average rate of profit among each commodity production section. These can be uniquely determined by the equilibrium relative prices $p_i{}^*$ and the average rate of profit r under constant initial conditions.[3]

$$(3.2) \qquad \sum a_{ij} p_j{}^* (1+r) = p_i{}^*, \qquad i,\ j = 1,\ 2,\ 3.$$

It may follow from (3.1) that the rate of profit for each section is determined by relative prices as paramèters.

$$(3.3) \qquad \beta_i = \frac{\sum a_{ij} p_j}{p_i} \qquad i,\ j = 1,\ 2,\ 3.$$

$$(3.4) \qquad \beta_i = \frac{1}{1+r_i} \qquad i,\ j = 1,\ 2,\ 3.$$

---

(2) a_{ij}^k stands for what it is, if j-th commodity is production goods; if it is consumption goods, this means $b_j^k \tau_i^k$, in which τ_i^k stands for the direct labor hours needed for the production of one unit of i-th commodity in country k and b_j^k quantity of j-th commodity needed for reproduction of one unit hour of direct labor in the same country.

(3) For the existence condition of solution in this case, see N. Okishio, " Value and Price," Keizaigaku-Kenkyū I, Kobe University.

Let us assume a set of relative prices $(p_1, p_2, 1)$ corresponding to β_t as one point P, and define the group of all points for $p_t \geq 0$ as a *relative price plane*. This plane can be shown as the 1-st quadrant of rectangular coordinates with horizontal p_1 axis, vertical p_2 axis and original point P^0. Point P^* corresponding to the set of equilibrium relative prices $(p_1{}^*, p_2{}^*, 1)$ is defined as *center* of the country on the relative price plane.

3.2   The above-defined group is shown by X. And let us define the following sub-group of X.

(1)   Sub-group of the set of relative prices by which, for each two commodity production sections, a rate of profit of the one commodity production section is made higher than the other; X_{ij}, $(r_i > r_j)$.

(2)   Sub-group of the set of relative prices for which, for each two commodity production sections, a rate of profit of the one commodity production section is equal to the other; $X_{ij}^0(r_i = r_j)$.

Among these sub-groups, there may be the following relations:

$$X_{ij} \cup X_{ij}^0 \cup X_{ji} = X$$

$$i, j = 1, 2, 3.$$

$$X_{ij} \cap X_{ij}^0 \cap X_{ji} = 0$$

Let us take the following curves of second degree:

$$
\begin{aligned}
f_{12}(p_1, p_2) &= \quad a_{21}p_1^2 + (a_{22}-a_{11})p_1p_2 - a_{12}p_2^2 + \quad a_{23}p_1 - \quad\quad a_{13}p_2 \\
(3.5)\quad f_{23}(p_1, p_2) &= a_{13}p_1p_2 \quad\quad\quad\quad\quad\quad + a_{32}p_2^2 - \quad a_{21}p_1 + (a_{33}-a_{22})p_2 - a_{23} \\
f_{31}(p_1, p_2) &= -a_{31}p_1^2 \quad - \quad\quad a_{32}p_1p_2 - \quad (a_{33}-a_{11})p_1 + \quad\quad a_{12}p_2 + a_{13}
\end{aligned}
$$

These are effective only within $p_t \geq 0$. And the above-mentioned sub-group corresponds to f_{ij} as follows:

$$
(3.6)\qquad f_{ij} =
\begin{cases}
0 & \quad\quad X_{ij} \\
0 & \text{for} \quad X_{ij}^0, \ i, j = 1, 2, 3. \\
0 & \quad\quad X_{ji}
\end{cases}
$$

$f_{ij} = 0$ can all be crossed at the *center* P^* on the relative price plane and only at one point. For this reason, the relative price plane can be divided into 12 domains. These domains must be located so as to make V_{12} on P^0 and be anti-clockwise from V_1 to V_{12}. See Figure 1. These have the following characters respectively:

$$
(3.7)\quad V_1 = X_{12} \cap X_{32} \cap X_{31} = (312) \qquad V_2 = X_{12} \cap X_{32} \cap X_{31}^0 = \binom{3}{1}2
$$

$$
V_3 = X_{12} \cap X_{32} \cap X_{13} = (132) \qquad V_4 = X_{12} \cap X_{32}^0 \cap X_{13} = \left(1\tbinom{3}{2}\right)
$$

$$
V_5 = X_{12} \cap X_{23} \cap X_{13} = (123) \qquad V_6 = X_{12}^0 \cap X_{23} \cap X_{13} = \binom{1}{2}3
$$

$$V_7 = X_{21} \cap X_{23} \cap X_{13} = (213) \qquad V_8 = X_{21} \cap X_{23} \cap X_{13}^0 = \left(2{1 \atop 3}\right)$$

$$V_9 = X_{21} \cap X_{23} \cap X_{31} = (231) \qquad V_{10} = X_{21} \cap X_{23}^0 \cap X_{31} = \left({2 \atop 3}1\right)$$

$$V_{11} = X_{21} \cap X_{32} \cap X_{31} = (321) \qquad V_{12} = X_{21}^0 \cap X_{32} \cap X_{31} = \left(3{2 \atop 1}\right).$$
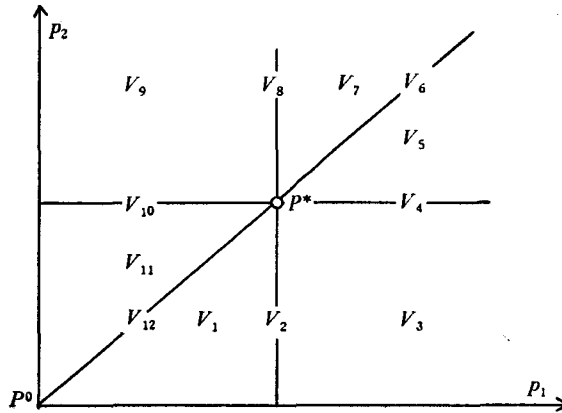
Figure 1.

The right side of each formula shows an abridged form of the left side, in which figures within a parenthesis stand for numbers of production sections respectively. And the order is subject to the rate of profit; in this order, the left end shows the section with the highest rate of profit, and two sections in a column means that there is an average rate of profit among them.

Next, let us assume that, in any country, *a capitalist concentrates his capital in the sections with the highest rate of profit under constant conditions of prices*. And let us arrange the above-mentioned 12 sub-domains from the point of view of *the section into which capital should be concentrated under given prices*. Then we have the next aggregations. See Figure 2.

$$(3.8) \qquad T_1 = V_{11} \cup V_{12} \cup V_1 = (3) \qquad T_2 = V_2 = \binom{3}{1}$$

$$T_3 = V_3 \cup V_4 \cup V_5 = (1) \qquad T_4 = V_6 = \binom{1}{2}$$

$$T_5 = V_7 \cup V_8 \cup V_9 = (2) \qquad T_6 = V_{10} = \binom{2}{3}.$$

Here, T shows each domain into which capital should be concentrated under given prices. The right side of the respective formulas means the production section by which the respective domain is represented.
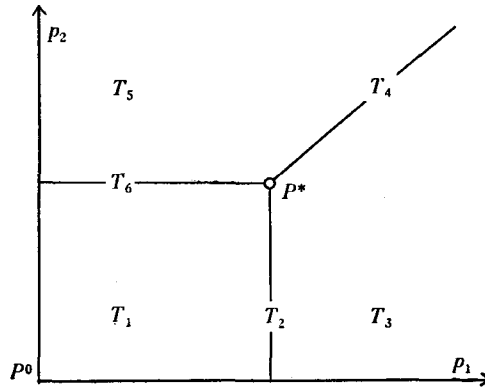
Figure 2.

3.3   In the above-mentioned T-domain, T_2, T_4 and T_6 are composed of parts of $f_{31}=0$, $f_{12}=0$ and $f_{23}=0$ respectively. Let us investigate some characters of T_2, T_4 and T_6 according to the character of $f_{ij}=0$.

（a） T_2.

According to some simple operations on $f_{31}=0$ by analytical geometry, a variation of relative prices in T_2-domain is shown as follows:

$$-\frac{dp_1}{dp_2}\gtreqqless 0 \text{ for } |A|_{31}\lesseqqgtr 0,$$

where

$$|A|_{31}=\begin{vmatrix} -a_{31} & \dfrac{-a_{32}}{2} & \dfrac{-(a_{33}-a_{11})}{2} \\[2mm] \dfrac{-a_{32}}{2} & 0 & \dfrac{a_{12}}{2} \\[2mm] \dfrac{-(a_{33}-a_{11})}{2} & \dfrac{a_{12}}{2} & a_{13} \end{vmatrix}$$

And, from this formula, we have the following relation;

(3.9) $\dfrac{a_{32}}{a_{31}a_{12}+a_{33}a_{32}}\gtreqqless\dfrac{a_{12}}{a_{11}a_{12}+a_{13}a_{32}}$, for $A_{31}\lesseqqgtr 0$.

Denominators of both sides of this formula mean the sum, calculated in terms of 2-nd comodity, of 1-st and 3-rd commodities needed for the production of one unit of them respectively. Therefore, fractions of both side mean the degree of respective production section's technique on 2-nd commodity, namely the intensity of respective production section's technique on 2-nd commodity. Therefore, we have the following Theorem:

（Theorem） 1.

A *variations of relative prices in T_2-domain is shown as follows according to*

the relative magnitude of the 2-nd commodity intensity in 1-st commodity production section e_2^1 to the one in 3-rd commodity production section e_2^3:

(3.10) $$\frac{dp_1}{dp_2} \gtreqqless 0 \quad for \quad e_2^1 \gtreqqless e_2^3.$$

(b) T_4.

For a variation of relative prices in T_4-domain, we get the following Theorem immediately by some simple operations on $f_{12}=0$ by analytical geometry.

(Theorem) 2.

A variation of relative prices in T_4-domain is always.

(3.11) $$\frac{dp_2}{dp_1} > 0.$$

(c) T_6.

A Variation of relative prices in T_6-domain is shown as follows according to some simple operations of $f_{23}=0$ by analytical geometry:

$$\frac{dp_2}{dp_1} \gtreqqless 0 \quad for \quad |A|_{23} \gtreqqless 0,$$

where

$$|A|_{23} = \begin{vmatrix} 0 & \dfrac{a_{31}}{2} & \dfrac{-a_{21}}{2} \\[2ex] -\dfrac{a_{31}}{2} & a_{32} & \dfrac{a_{33}-a_{22}}{2} \\[2ex] -\dfrac{a_{21}}{2} & \dfrac{a_{33}-a_{22}}{2} & -a_{23} \end{vmatrix}$$

And, from this formula, we get the next relation;

(3.12) $$\frac{a_{31}}{a_{32}a_{21}+a_{33}a_{31}} \gtreqqless \frac{a_{21}}{a_{22}a_{21}+a_{23}a_{31}}, \quad for \quad |A|_{23} \gtreqqless 0.$$

The meaning of this formula is similar to that in T_2-domain. Therefore, we have the following Theorem.

(Theorem) 3.

A variation of relative prices in T_6-domain is shown as follows according to the relative magnitude of the 1-st commodity intensity in 2-nd commodity production section e_1^2 to the one in 3-rd commodity production section e_1^3:

(3.13) $$\frac{dp_2}{dp_1} \gtreqqless 0 \quad for \quad e_1^2 \gtreqqless e_1^3.$$

The division of the relative price plane into T-domain expressed typically in Figure 2 have 9 kinds themselves. The significance of this division may be cleared in the next sections.

The above is the gist of our argument about the relation of rate of profit to relative prices within an economy of a country. And, in the next section, we shall investigate situations in which these countries should begin to trade

internationally with each other.

4. In this paper, we treat two countries and three commodities cases. We assume that the initial conditions of these two countries are different from each other. Therefore the set of equilibrium relative prices within a country is different from each other also. In such a case, international trade should be done. What situation does international trade generate?

4.1 In an international equilibrium situation, at least, the following two conditions must be filled:

(a) *Reproduction condition.* This means reproduction must be possible in the world as a whole. This also means all comodities must be produced in either or both country through the world as a whole.

(b) *Rate of profit condition.* This means that capitalists in each country would concentrate their capital in the production sections with the highest rate of profit under given international prices and consequently allocate their capital so as to make a rate of profit equal among the specialized production sections for respective countries.

The domain in which these two conditions are filled is a joint-domain as follows:

$$(4.1) \quad (1) \quad (P^{*r}; T_j^s) \quad j=1,\cdots\cdots, 6.$$
$$\qquad\quad (2) \quad (T_i^r; T_j^s) \quad i=1, 3, 5; j=i+3.$$
$$\qquad\quad (3) \quad (T_i^r; T_j^s) \quad i=2, 4, 6; j=i+2, i+3, i+4.$$

where P^{*r} stands for the center of country r and T^r and T^s for T-domain of countries r and s respectively. These are followed immediately by (3.8).

$$\begin{pmatrix} T_i^r \\ T_{i+3}^s \end{pmatrix} \qquad \begin{pmatrix} T_i^r \\ T_{i+3}^s \end{pmatrix}$$

$$\begin{pmatrix} T_{i+5}^r \\ T_{i+3}^s \end{pmatrix} \qquad \begin{pmatrix} T_{i+1}^r \\ T_{i+3}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_i^r \\ T_{i+2}^s \end{pmatrix} \qquad \begin{pmatrix} T_i^r \\ T_{i+4}^s \end{pmatrix}$$

$$\begin{pmatrix} T_{i+5}^r \\ T_{i+2}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_{i+1}^r \\ T_{i+4}^s \end{pmatrix} \quad \begin{pmatrix} T_{i+5}^r \\ T_{i+2}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_{i+1}^r \\ T_{i+4}^s \end{pmatrix}$$

$$\begin{pmatrix} T_{i+5}^r \\ T_{i+1}^s \end{pmatrix} \qquad (i: \text{odd}) \qquad \begin{pmatrix} T_{i+1}^r \\ T_{i+5}^s \end{pmatrix} \begin{pmatrix} T_{i+4}^r \\ T_{i+2}^s \end{pmatrix} \qquad (i: \text{even}) \qquad \begin{pmatrix} T_{i+2}^r \\ T_{i+4}^s \end{pmatrix}$$

$$\begin{pmatrix} T_{i+4}^r \\ T_{i+1}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_{i+2}^r \\ T_{i+5}^s \end{pmatrix} \begin{pmatrix} T_{i+4}^r \\ T_{i+1}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_{i+2}^r \\ T_{i+5}^s \end{pmatrix}$$

$$\begin{pmatrix} T_{i+3}^r \\ T_{i+1}^s \end{pmatrix} \begin{pmatrix} T_{i+3}^r \\ T_i^s \end{pmatrix} \begin{pmatrix} T_{i+3}^r \\ T_{i+5}^s \end{pmatrix} \qquad\qquad \begin{pmatrix} T_{i+4}^r \\ T_i^s \end{pmatrix} \begin{pmatrix} T_{i+3}^r \\ T_i^s \end{pmatrix} \begin{pmatrix} T_{i+2}^r \\ T_i^s \end{pmatrix}$$

Situation (1) shows a special case where the country r has the same situation of relative prices to rate of profit as it had before trade. We would omit this situation in the following arguments.

Joint-domain in which situation (2) and (3) are filled can be located on one circle. Let us call this location the *circle.*

The circle on the left side represents the case of (i: odd), and on the right side for the case of (i: even). Although these may be different types of circles, both are the same in character; to add a unit to each subscript of the domain in the circle on right side and to turn it $2\pi/3$ clockwise, you may get the same circle as on the left side. Therefore, to classify the circle into these two kinds is only for the sake of simplicity.

Now, in the case of two countries and three commodities, two kinds of commodities must be produced at least in one country for the fulfilment of the reproduction condition. And, for the rate of profit condition, there must be an average rate of profit among the two production sections. In this case, point P on the relative price plane corresponding to the set of equilibrium relative prices may be on X^0 of the two commodities for the country in which the two commodities are produced. And when both countries produce any two-commodities respectively, point P corresponds to the intersecting point of each X^0 belonging to each country.

$P^{*\mathrm{I}}$ (center of country I) may be connected with $P^{*\mathrm{II}}$ (center of country II) by a chain $X_1^{0\mathrm{I}} - X_2^{0\mathrm{II}} - X_3^{0\mathrm{I}} - \cdots - X_n^{0\mathrm{II}}$. There can be two or more chains under constant initial conditions. However it may be, among these chains, what is filled by the reproduction condition must be only one. Under the condition $P^{*\mathrm{I}} \in T_t^{\mathrm{II}}$, what is filled by the reproduction condition must be only one among $3X^0$'s that is radiated from $P^{*\mathrm{I}}$. This selected $X_1^{0\mathrm{I}}$ may be effective only in $X_1^{0\mathrm{I}} \subset T_t^{\mathrm{II}}$. And T_t^{II} in itself or adjacent domain with T_t^{II} ($T_{t\pm1}^{\mathrm{II}}$) may certainly include $X_2^{0\mathrm{II}}$ which can exist together with $X_1^{0\mathrm{I}}$. Therefore the joint domain of $X_1^{0\mathrm{I}}$ to $X_2^{0\mathrm{II}}$ can be effective. Next this $X_2^{0\mathrm{II}}$ can be effective only in either side of the joint domain. Moreover this $X_2^{0\mathrm{II}}$ can find the next $X_3^{0\mathrm{I}}$ without fail.······ All of this process can be represented on a part of the *circle.* And when we are given ($P^{*\mathrm{I}} \in T_t^{\mathrm{II}}$; $P^{*\mathrm{II}} \in T_j^{\mathrm{I}}$), the above-mentioned *chain* may be represented by an arc from the part containing T_t^{II} to T_j^{I}.

Now, the above-mentioned chain on the circle are of two kinds; a major arc and a minor arc which conjugate each other. Then which is the effective chain? For this problem, let us investigate the *circle* in more detail. For any semi-circumference of a circle, both ends are always *homeomorphic*; the difference

between them is that the centers of both countries are substituted in place of
each other. And if we take a larger part of the arc than the semicircumference
(a part of major arc), we must take again, on the part of an over semicircum-
ference, the same *topological path* as of a semicircumference. However, this may
be possible only in a case in which the direction of P^{*r} to P^{*s} is the same as of
P^{*s} to P^{*r}, where direction means a quadrants to which any objective center
belongs in a orthogonal coordinate that the original point is the subjective center.
This case is inconsistent. To escape from this inconsistency, we must take the
part of the semicircumference or minor arc effective as a chain. Therefore the
above-mentioned chain can be represented by a minor arc; a semicircumference
is represented by the *maximum* minor arc. Moreover, in this paper, we do not
touch the case of (4.1)–(1). So this chain can be represented by a *minimum* minor
arc from a part containing T_i^{II} to T_j^{I}. Let us call this an *effective chain*. Then we
have the following Theorem.

(Theorem) 4.

When P^{*s} belongs to T_i^r and P^{*r} to T_j^s,

$$(P^{*s} \in T_i^r ;\ P^{*r} \in T_j^s),$$

*the domain in which international equilibrium relative prices can be realized is on
a circle and the part of a minimum minor arc from the part containing T_i^r to T_j^s.*

4.2 To determine the domain according to Theorem 4 in which international
equilibrium relative prices may exist, we must clarify some domains belonging
to country *s* to which any domain belonging to country *r* can correspond.

Immediately from (3.8), we can say that the following three combinations
are not possible:

$$(P^{*s} \in T_2^r ;\ P^{*r} \in T_2^s)\quad ,\quad (P^{*s} \in T_4^r ;\ P^{*r} \in T_4^s)$$

and $(P^{*s} \in T_6^r ;\ P^{*r} \in T_6^s).$

However it may be said, we can not say all other combinations are always
possible. We must investigate whether it is so or not.

According to Theorems 1, 2 and 3, it is clear that the division of the relative
price plane to 6 *T*-domains has 9 kinds of situations due to the characters of T_2
and T_6 domains. And let us investigate the next point for these 9 situations.
When the center P^{*s} of country *s* belongs to any *T*-domain in country *r*, to which
domains does te center P^{*r} of country *r* belong? This question may be solved
as follows. For example, let us assume the case $\left(\dfrac{dp_2}{dp_1}\right)_{23} > 0$ and $\left(\dfrac{dp_1}{dp_2}\right)_{31} > 0$ in
country *r*. In this case, the situation of *T*-domain in country *r* is shown in
Figure 3.
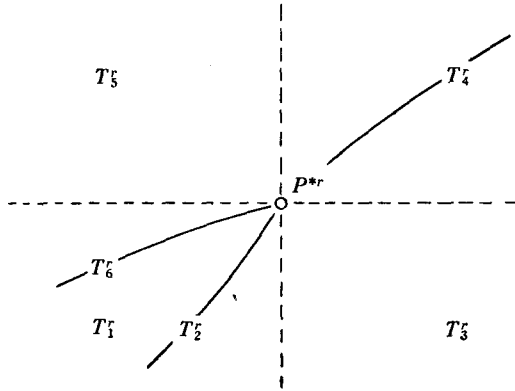
Figure 3.

And, on the same plane, let us assume 8 demains $U_1^r, \cdots, U_8^r$ where the relative price plane is divided into 8 domains by a vertical line (parallel with p_2 axis) and horizontal line (parallel with p_1 axis) intersecting at the point P^{*r} of each other. This is shown in Figure 4.
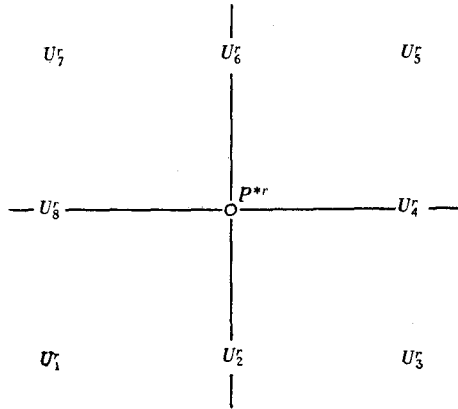
Figure 4.

Now let us assume $P^{*s} \in T_1^r$. In Figure 4, $T_1^r \subset U_1$. Therefore

$$P^{*s} \in T_1^r \subset U_1^r.$$

On the contrary, because of $P^{*s} \in U_1^r$,

$$P^{*r} \in U_5^s,$$

for U^s-domain with the center P^{*s}. According to the characters of Figure 3, we have

$$P^{*r} \in U_5^s \subset (T_3^s \cup T_4^s \cup T_5^s).$$

From this reasoning, we can say in the above-mentioned case that, if $P^{*s} \in T_1^r$, there is $P^{*r} \subset (T_3^s \cup T_4^s \cup T_5^s)$; namely that, when P^{*s} belongs to T_1^r, P^{*r} may belong to any one in T_3^s, T_4^s or T_5^s. We show this meaning by

$$(P^{*s} \in T_1^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s)).$$

In the same way, we have all information for all cases as follows:

(A) $\left(\dfrac{dp_2}{dp_1}\right)_{23} > 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} > 0.$

  $(P^*_s \in T_1^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$ $(P^{*s} \in T_2^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$

  $(P^{*s} \in T_3^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s \cup T_6^s \cup T_1^s \cup T_2^s))$

  $(P^{*s} \in T_4^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s \cup T_2^s \supset T_3^s))$

  $(P^{*s} \in T_5^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s \cup T_4^s \cup T_5^s \cup T_6^s))$

  $(P^{*s} \in T_6^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$

(B) $\left(\dfrac{dp_2}{dp_1}\right)_{23} > 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} = 0 : \left(\dfrac{dp_2}{dp_1}\right)_{23} > 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} < 0$

  $(P^*_s \in T_1^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$ $(P^{*s} \in T_2^r; \ P^{*r} \in T_5^s)$

  $(P^{*s} \in T_3^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s))$ $(P^{*s} \in T_4^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s))$

  $(P^{*s} \in T_5^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s \cup T_2^s \supset T_3^s \cup T_4^s))$

  $(P^{*s} \in T_6^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$

(C) $\left(\dfrac{dp_2}{dp_1}\right)_{23} = 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} > 0 : \left(\dfrac{dp_2}{dp_1}\right)_{23} < 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} > 0$

  $(P^{*s} \in T_1^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$ $(P^{*s} \in T_2^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$

  $(P^{*s} \in T_3^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s \cup T_6^s \cup T_1^s \cup T_2^s))$

  $(P^{*s} \in T_4^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s))$ $(P^{*s} \in T_5^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s))$

  $(P^{*s} \in T_6^r; \ P^{*r} \in T_3^s)$

(D) $\left(\dfrac{dp_2}{dp_1}\right)_{23} = 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} = 0 ; \left(\dfrac{dp_2}{dp_1}\right)_{23} = 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} < 0 ; \left(\dfrac{dp_2}{dp_1}\right)_{23} < 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} = 0$

  $(P^{*s} \in T_1^r; \ P^{*r} \in (T_3^s \cup T_4^s \cup T_5^s))$ $(P^{*s} \in T_2^r; \ P^{*r} \in T_5^s)$

  $(P^{*s} \in T_3^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s))$ $(P^{*s} \in T_4^r; \ P^{*r} \in T_1^s)$

  $(P^{*s} \in T_5^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s))$ $(P^{*s} \in T_6^r; \ P^{*r} \in T_3^s)$

(E) $\left(\dfrac{dp_2}{dp_1}\right)_{23} < 0, \ \left(\dfrac{dp_1}{dp_2}\right)_{31} < 0,$

  $(P^{*s} \in T_1^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s \cup T_4^s \cup T_5^s \cup T_6^s))$

  $(P^{*s} \in T_2^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s))$ $(P^{*s} \in T_3^r; \ P^{*r} \in (T_5^s \cup T_6^s \cup T_1^s))$

  $(P^{*s} \in T_4^r; \ P^{*r} \in T_1^s)$ $(P^{*s} \in T_5^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s))$

  $(P^{*s} \in T_6^r; \ P^{*r} \in (T_1^s \cup T_2^s \cup T_3^s))$

  According to (A) $-$ (E), it is clear that all combinations

$$(P^{*s} \in T_i^r; \ P^{*r} \in T_j^s)$$

are possible except the cases $i = j = 2$, 4 and 6. From this we have the following Theorem.

(Theorem) 5.

Combination

$$(P^{*s} \in T_i^r ;\ P^{*r} \in T_j^s),$$

which is given by initial conditions, is possible for all cases of i and j except when $i = j = 2,\ 4$ and 6.

4.3 Next, let us investigate the characters of minimum minor arcs on a circle for all the combinations except the cases shown in Theorem 5.

Now let us classify all effective combinations of i and j in $(P^{*s} \in T_i^r ;\ P^{*r} \in T_j^s)$ into the following four kinds;

(4.2)   (a) $j = i$, $i = 1,\ 3,\ 5$.

        (b) $j = i \pm 1$, $i = 1, 2, 3, 4, 5, 6$.

        (c) $j = i \pm 2$, $i = 1, 2, 3, 4, 5, 6$.

        (d) $j = i \pm 3$, $i = 1, 2, 3, 4, 5, 6$.

and investigate these four combinations respectively.

(a) $j = i$ case.

In this case, the *effective chain* is as follows;

$$\left(\begin{matrix}T_i^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+4}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+5}^s\end{matrix}\right)\left(\begin{matrix}T_{i+2}^r \\ T_{i+5}^s\end{matrix}\right)\left(\begin{matrix}T_{i+3}^r \\ T_{i+5}^s\end{matrix}\right)\left(\begin{matrix}T_{i+3}^r \\ T_i^s\end{matrix}\right),$$

or $$\left(\begin{matrix}T_i^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+2}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+1}^s\end{matrix}\right)\left(\begin{matrix}T_{i+4}^r \\ T_{i+1}^s\end{matrix}\right)\left(\begin{matrix}T_{i+3}^r \\ T_{i+1}^s\end{matrix}\right)\left(\begin{matrix}T_{i+3}^r \\ T_i^s\end{matrix}\right).$$

This may be interpreted into the following form;

$$\left(\begin{matrix}a \\ b\ \ c\end{matrix}\right)\left(\begin{matrix}a\ \ b \\ b\ \ c\end{matrix}\right)\left(\begin{matrix}a\ \ b \\ c\end{matrix}\right)\left(\begin{matrix}a\ \ b \\ c\ \ a\end{matrix}\right)\left(\begin{matrix}b \\ c\ \ a\end{matrix}\right)\left(\begin{matrix}b\ \ c \\ c\ \ a\end{matrix}\right)\left(\begin{matrix}b\ \ c \\ a\end{matrix}\right),$$

or $$\left(\begin{matrix}a \\ b\ \ c\end{matrix}\right)\left(\begin{matrix}c\ \ a \\ b\ \ c\end{matrix}\right)\left(\begin{matrix}c\ \ a \\ b\end{matrix}\right)\left(\begin{matrix}c\ \ a \\ a\ \ b\end{matrix}\right)\left(\begin{matrix}c \\ a\ \ b\end{matrix}\right)\left(\begin{matrix}b\ \ c \\ a\ \ b\end{matrix}\right)\left(\begin{matrix}b\ \ c \\ a\end{matrix}\right),$$

where a, b and c stand for any production sections respectively. Then is we take any international relative prices realized on the above effective chain, the specializable production sections for each country are the following.

(4.3) $$\left(\begin{matrix}r:\ a\ \ b\ \ c \\ s:\ a\ \ b\ \ c\end{matrix}\right)$$

Therefore, in this case, each country can specialize on all production sections.

(b) $j = i \pm 1$ case.

In this case, we have to classify the *effective chain* into two cases, $i =$ odd and $i =$ even cases.

In $i =$ odd case, the effective chain is as follows:

$$\left(\begin{matrix}T_i^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+2}^s\end{matrix}\right)\left(\begin{matrix}T_{i+5}^r \\ T_{i+1}^s\end{matrix}\right),\ \text{for } j = i+1,$$

or $$\left(\begin{matrix}T_i^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+3}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+4}^s\end{matrix}\right)\left(\begin{matrix}T_{i+1}^r \\ T_{i+5}^s\end{matrix}\right),\ \text{for } j = i-1.$$

This may be interpreted into the following form;

$$\begin{pmatrix} a & \\ b & c \end{pmatrix}\begin{pmatrix} c & a \\ b & c \end{pmatrix}\begin{pmatrix} c & a \\ & b \end{pmatrix}\begin{pmatrix} c & a \\ a & b \end{pmatrix}, \text{ for } j=i+1,$$

or
$$\begin{pmatrix} a & \\ b & c \end{pmatrix}\begin{pmatrix} a & b \\ b & c \end{pmatrix}\begin{pmatrix} a & b \\ & c \end{pmatrix}\begin{pmatrix} a & b \\ c & a \end{pmatrix}, \text{ for } j=i-1.$$

Then the specializable production sections for each country are as follows:

(4.4)
$$\begin{pmatrix} r: & a & & c \\ s: & a & b & c \end{pmatrix} \text{ for } j=i+1,$$

$$\begin{pmatrix} r: & a & b & \\ s: & a & b & c \end{pmatrix} \text{ for } j=i-1.$$

Therefore, in this case, country r may be specialized for two sections and country s for three sections. And the unproducible commodity in country r is the commodity which is contained in country s and not in country r in

(4.5)
$$T^r_i=(a),\ T^s_j=(a\ b), \text{ for } j=i+1,$$
$$T^r_i=(a),\ T^s_j=(a\ c), \text{ for } j=i-1.$$

In $i=$ even case, the effective chain is as follows;

$$\begin{pmatrix} T^r_i \\ T^s_{i+2} \end{pmatrix}\begin{pmatrix} T^r_{i+5} \\ T^s_{i+2} \end{pmatrix}\begin{pmatrix} T^r_{i+4} \\ T^s_{i+2} \end{pmatrix}\begin{pmatrix} T^r_{i+4} \\ T^s_{i+1} \end{pmatrix}, \text{ for } j=i+1,$$

or
$$\begin{pmatrix} T^r_i \\ T^s_{i+4} \end{pmatrix}\begin{pmatrix} T^r_{i+1} \\ T^s_{i+4} \end{pmatrix}\begin{pmatrix} T^r_{i+2} \\ T^s_{i+4} \end{pmatrix}\begin{pmatrix} T^r_{i+2} \\ T^s_{i+5} \end{pmatrix}, \text{ for } j=i-1.$$

This may be interpreted into the following form;

$$\begin{pmatrix} a & b \\ b & c \end{pmatrix}\begin{pmatrix} a & \\ b & c \end{pmatrix}\begin{pmatrix} c & a \\ b & c \end{pmatrix}\begin{pmatrix} c & a \\ & b \end{pmatrix}, \text{ for } j=j+1,$$

or
$$\begin{pmatrix} a & b \\ c & a \end{pmatrix}\begin{pmatrix} b & \\ c & a \end{pmatrix}\begin{pmatrix} b & c \\ c & a \end{pmatrix}\begin{pmatrix} b & c \\ & a \end{pmatrix}, \text{ for } j=i-1.$$

Then the specializable production sections for each country are as follows:

(4.6)
$$\begin{pmatrix} r: & a & b & c \\ s: & & b & c \end{pmatrix} \text{ for } j=i+1,$$

$$\begin{pmatrix} r: & a & b & c \\ s: & a & & c \end{pmatrix} \text{ for } j=i-1.$$

Therefore, in this case, country r may be specialized for three sections and country s for two sections. And the nonproducible commodity in country s is the commodity which is contained in country r and not in country s in

(4.7)
$$T^r_i=(a\ b),\ T^s_i=(b) \text{ for } j=i+1,$$
$$T^r_i=(a\ b),\ T^s_j=(a) \text{ for } j=i-1.$$

(c) $j=i\pm2$ case.

In this case, we have to classify the effective chain into two cases, $i=$ odd and $i=$ even cases.

In $i=$ odd case, the effective chain is as follows:

$$\begin{pmatrix} T^r_i \\ T^s_{i+3} \end{pmatrix}\begin{pmatrix} T^r_{i+5} \\ T^s_{i+3} \end{pmatrix}\begin{pmatrix} T^r_{i+5} \\ T^s_{i+2} \end{pmatrix}, \text{ for } j=i+1,$$

or
$$\begin{pmatrix} T^r_i \\ T^r_{i+3} \end{pmatrix}\begin{pmatrix} T^r_{i+1} \\ T^s_{i+3} \end{pmatrix}\begin{pmatrix} T^r_{i+1} \\ T^s_{i+4} \end{pmatrix}, \text{ for } j=i-1.$$

This may be interpreted into the following form:

$$\begin{pmatrix} a \\ b\ c \end{pmatrix}\begin{pmatrix} c\ a \\ b\ c \end{pmatrix}\begin{pmatrix} c\ a \\ b \end{pmatrix}, \text{ for } j=i+1,$$

or
$$\begin{pmatrix} a \\ b\ c \end{pmatrix}\begin{pmatrix} a\ b \\ b\ c \end{pmatrix}\begin{pmatrix} a\ b \\ c \end{pmatrix}, \text{ for } j=i-1.$$

Then the specialized production sections for each country are as follows:

$$\begin{pmatrix} r: a & c \\ s: & b\ c \end{pmatrix}, \text{ for } j=i+2,$$

or
$$\begin{pmatrix} r: a\ b & \\ s: & b\ c \end{pmatrix}, \text{ for } j=i-2.$$

Therefore, in this case, both countries may be specialized for two sections respectively. And the producible commodity for each country is determined as follows. First, the completely specialized commodity for each country is shown in

(4.9) $\qquad T^r_i=(a),\ T^s_j=(b), \text{ for } j=i+2,$

$\qquad\qquad\qquad T^r_i=(a),\ T^s_j=(c), \text{ for } j=i-2.$

respectively. Second, both countries produce commonly the rest of the commodities which are not contained in (4.9).

In $i=$even case, the effective chain is as follows;

$$\begin{pmatrix} T^r_i \\ T^s_{i+2} \end{pmatrix}, \text{ for } j=i+2,$$

or
$$\begin{pmatrix} T^r_i \\ T^s_{i+4} \end{pmatrix}, \text{ for } j=i-2.$$

This may be interpreted into the following form:

$$\begin{pmatrix} c\ a \\ a\ b \end{pmatrix}, \text{ for } j=i+2,$$

or
$$\begin{pmatrix} c\ a \\ b\ c \end{pmatrix}, \text{ for } j=i-2.$$

Then the specialized production sections for each country are as follows:

(4.10) $\qquad\qquad \begin{pmatrix} r: a & c \\ s: a\ b & \end{pmatrix}, \text{ for } j=i+2,$

$$\begin{pmatrix} r: a & c \\ s: & b\ c \end{pmatrix}, \text{ for } j=i-2.$$

Therefore, in this case, both countries may be specialized for two sections respectively. And the producible commodities for each country are given by

(4.11) $\qquad T^r_i=(a\ c),\ T^s_j=(a\ b) \text{ for } j=i+2,$

$\qquad\qquad\qquad T^r_i=(a\ c),\ T^s_j=(b\ c) \text{ for } j=i-2.$

(d) $j=i\pm3$ case.

In this case, we have to classify the effective chain into two cases, $i=$odd and $i=$even cases.

In $i=$odd case, the effective chain is as follows;

$$\binom{T^r_i}{T^s_{i+3}}.$$

This may be interpreted as follows;

$$\binom{a}{b\ \ c}.$$

Then the specialized production sections for each country are as follows:

(4.12) $\begin{pmatrix} r: a \\ s: \quad b\ \ c \end{pmatrix}.$

Therefore, in this case, country r may be specialized only for one section and country s for the two remaining sections. And the producible commodities for each country are shown by

(4.13) $T^r_i=(a),\ T^s_j=(b\ \ c).$

In $i=$even case, the effective chain is as follows;

$$\binom{T^r_i}{T^s_{i+3}}.$$

This may be interpreted as follows;

$$\binom{a\ \ c}{b}.$$

Then, the specialized production sections for each country are as follows:

(4.14) $\begin{pmatrix} r: a \quad c \\ s: \quad b \end{pmatrix}.$

Therefore, in this case, country r may be specialized for two sections and country s for only one section. And the producible commodities for each country are shown by

(4.15) $T^r_i=(a\ \ c),\ T^s_j=(b).$

From these reasonings, we have the following Theorem for the international specialization of production for 2 countries and 3 commodities case.

(Theorem) 6.

> *For the international specialization of production for 2 countries and 3 commodities, if we have initial conditions for each country, we can point out the specializable production sections for each country under any international relative prices.*
>
> *When we have*
>
> $$(P^{*s} \in T^r_i;\ P^{*r} \in T^s_j)$$
>
> *according to the initial conditions for each country, we can say that*
>
> (a) *$j=i$ case. In this case, each country can specialize in any one or two of three commodities production sections.*
>
> (b) *$j=i+1$ case. In this case, according to $i=$odd (or even), country r*

can specialize in any one or two of two (or three) commodity production sections, and country s for any one or two of three (or two) commodity production sections. The specializable commodities for each country is shown (4.5), in the case of $i=$odd, or (4.7), in the case of $i=$even.

(c)　$j=i\pm2$ case. In this case, both countries can specialize for any one or two of two commodity production sections. The specializable commodities for each country is shown (4.9), in the case of $i=$odd, or (4.11), in the case of $i=$even.

(d)　$j=i\pm3$ case. In this case, according to $i=$odd (or even), country r can specialize for one (or two) commodity production sections, and country s for two (or one) sections. The specializable commodities for each country is shown (4.13), in the case of $i=$odd, or (4.15), in the case of $i=$even.

5.　So far, for the case of 2 countries and 3 commodities, we show to what extent we can tell about the international specialization of production under given initial conditions. To complete the theory of international specialization of production, we must investigate the specialized situation for each country in the international equilibrium state. This problem, we will treat in the next paper.

REPLACEMENT COST AND LIFO COST

Susumu WATANABE

I

The Lifo method of inventory is a method of charging current costs against current sales. What do we then mean by 'charging current costs against current sales'? This method is often considered as equivalent to the replacement cost method, or a method of charging replacement costs against revenues from sales. Of course, the two methods show different costs of goods sold where ending inventories are smaller than beginning inventories. This is because the Lifo method includes historical costs of liquidated inventories in the costs of goods sold during the period. May we then say that, with this exception, Lifo uses replacement costs as costs of goods sold? No, that is not the case. Even where ending inventories are equal in quantity to beginning inventories, there is a difference between costs of goods sold measured by Lifo and those measured by the replacement cost method. These figures arrived at by the two methods have a different significance, too, in the profit and loss measurement. The difference between the two methods lies in the fact that Lifo costs are costs derived from actual costs, while replacement costs are costs measured by what is required for replacement at time of sales. The replacement cost method comes under the category of current price methods for pricing requisitions. But the costs Lifo purports to charge are not replacement costs in this sense. The costs Lifo purports to allocate are the total of costs of beginning inventories and those of goods purchased during the period (in this sense Lifo is based on the cost basis.) The said total of costs may be larger, or may be smaller, than the total of their replacement costs. The costs of

goods sold measured by Lifo are not replacement costs at time of sales, but are what is actually needed for replacement. In this sense the costs of goods sold by Lifo may be spoken of as 'actual' replacement costs, which can be evidenced by historical records. But for the fact that Lifo is thus based on actual costs, it would not have won general acceptance. It is because modern profit and loss determination founded on the cost allocation concept does not recognize such calculation as places costs of goods sold above or below actual acquisition costs. Must we then admit that Lifo is an imperfect replacement cost method, so to speak, which is prevented by the actual cost basis from achieving its real purpose of attaining costs of goods sold by the replacement cost method? It is not so. The Lifo method is grounded on the 'real capital maintenanecc' concept, not on the 'replacement cost' concept. In other words, Lifo considers business profit as surplus left after the maintenance of real capital (here only inventories are under consideration), and does not think that capital maintenance is attained by recovering replacement costs. This point will be made still clearer by reference to the points discussed below.

Lifo is a method of matching current revenues with current costs in terms of the accounting period, for costs of goods sold to be charged are not costs based on the price levels of preceding periods, but the very price level of the current period. This is true of a period as a whole, but what costs of goods sold does Lifo aim at charging in individual transactions against revenues? This question is important because the gross profit of an accounting period is not realized all at once at its end, but is the aggregation of profits derived from individual transactions. Now suppose that the individual sales prices (S) and the individual purchase costs (P) of the period are as follows:

Sales $S_1, S_2, S_3, S_4 \cdots\cdots\cdots S_{n-1}, S_n$

Purchases $P_0, P_1, P_2, P_3\cdots\cdots\cdots P_{n-1}, P_n$

In this case there are some people who believe Lifo pairs S_1 and P_n, S_2 and P_{n-1}, and so forth. This is not a proper interpretation, but one misled by the name last-in, first-out, for matching of costs and revenues on the same price level would show the result only for one period as a whole, but not for individual transactions.

II

The costs of goods sold determined by replacement costs for one accounting

period are the sum total $(\Sigma p'_i q'_i)$ of replacement prices at time of sales (p') multiplied by quantities sold (q'). The costs of goods sold determined by Lifo for one accounting period are the sum total $(\Sigma p_i q'_i)$ of unit prices based on Lifo (p) multiplied by quantities sold (q'). In the case of periodic Lifo the costs of goods sold during one period are generally determined for the period in question as a whole, for the quantitative determination of ending inventories is required for the determination of the costs of goods sold during the period.

The Lifo method that purports to charge current costs against current revenues must do the same for segments of a period (like months, individual issues etc.). For matching of revenues and costs on the same price level in terms of periods will be meaningless unless it is based on matching of revenues and costs on the same price level in terms of segments of periods.

What costs then is Lifo to be deemed to charge against each individual issue? As previously noted, the costs of goods sold for one period is not determined by Lifo until the quantitative determination of ending inventories. Individual issue prices during a period are not common to all cases (1) where ending inventories are equal in quantity to beginning inventories, (2) where the former are larger than the latter and (3) where the former are smaller than the latter. For simplicity's sake, let us assume that the ending quantity (q_s) is equal to the beginning quantity (q_0) and consider the difference between Lifo issue costs and replacement costs.

If $q_s = q_0$, the value of ending inventories is $p_0 q_0$ by the periodic Lifo method $(p_0$ is the unit price at the beginning of the period). In this case, the issue price of each lot at a certain point is determined by the relations of the quantity issued to the inventory in stock.

(1) Suppose that q'_1 is issued from the beginning inventory q_0 (its unit price is p_0), that q_2 is received afterwards by purchase or by production (its unit price is p_2), and that $q'_1 = q_0 = q_2$. The unit price to be assigned to q'_1 is p_2 instead of p_0. In other words, its issue price is $p_2 q'_1$. The replacement cost by the replacement cost method is $p'_1 q'_1$ obtained by applying the unit price p'_1 at time of issue to the quantity issued q'_1, and the Lifo cost is therefore larger than the replacement cost at the point of issue in case of rising prices $(p_0 < p'_1 < p_2)$.

(2) Suppose that the inventory in stock consists of q_0 (its unit price is

p_0) and q_1 (its unit price is p_1), that q'_2 is issued therefrom, that q_3 is received for replenishment, and that $q'_2 = q_1 = q_3$. Then the unit price to be assigned as Lifo cost to q'_2 is p_1 instead of p_3. As compared with the issue price by the replacement cost method ($p'_2 q'_2$), the Lifo cost is smaller than the replacement cost in case of rising prices ($p_0 < p_1 < p'_2 < p_3$).

(3) In case (1) above, a unit price at a point subsequent to the time of issue is applied as Lifo cost, and in case (2) a unit price at a point prior to the time of issue is applied. But, practically speaking, it will frequently happen that a unit price at a point prior to the time of issue is applied to some parts of one and the same lot, while a unit price at a subsequent point is applied to other parts of it. For instance, suppose that the inventory in stock consists of $p_0 q_0$ and $p_1 q_1$, that q'_2 is issued therefrom, that q_3 is later received for replenishment, that $q'_2 > q_1$, and that $q_3 \geqq (q'_2 - q_1)$. The Lifo cost is then $p_1 q_1 + p_3 (q'_2 - q_1)$. Compared with the issue price by the replacement cost method $p'_2 q'_2$, the Lifo cost will be smaller than the replacement cost with regard to q_1 out of the quantity issued q'_2 and larger with regard to the rest ($q'_2 - q_1$) in case of rising prices ($p_0 < p_1 < p'_2 < p_3$). It follows that we cannot talk in general terms of the relative size of the Lifo cost and the replacement cost with regard to the issued quantity in question. Which is the larger of the two depends on which is the larger of ($p'_2 - p_1$) q_1 and ($p_3 - p'_2$)($q'_2 - q_1$), or in more generalized terms, on which is the larger of ($p'_i - p_{i-1}$) Δq_i and ($p_{i+1} - p'_i$)($q_i' - \Delta q_i$). Here Δq_i stands for the excess of the inventory at time of issue over the beginning inventory, and ($q_i' - \Delta q_i$) for the excess of the quantity issued over Δq_i. (i standing for the time of issue.) For a period as a whole, therefore, the difference between $\Sigma p'_i q'_i$ (the total of issue prices measured by replacement costs for the period) and $\Sigma p_i q'_i$ (the total of issue prices determined by Lifo for the same period) may be represented by the following formula ($i = 1, 2, 3 \cdots, n$) :

$$\Sigma (p'_i - p_{i-1}) \Delta q_i - \Sigma (p_{i+1} - p'_i)(q'_i - \Delta q_i) = \Sigma p'_i q'_i - \Sigma p_i q'_i$$

The relative size of issue prices as measured by replacement costs and those determined by Lifo depends upon such factors as price fluctuations, inventories in stock and quantities issued. Generally speaking, however, in case of rising prices, replacement costs will be larger if Δq_i constantly exists in large quantities at each time of issue, while Lifo costs will be larger if it is of frequent occurence that q'_i exceeds Δq_i and that, therefore, the quantity ($q'_i - \Delta q_i$) is

received for replacement after issue. The reverse is the case when prices are falling.

Thus issue prices obtained by applying Lifo as a method of allocating actual costs are different from those obtained by the replacement cost method as a general rule, exceptions of which are confined to the following cases :

(1) Where there has been no price fluctuation all through the period. But this case is out of the question, since there is no benefit to be derived from applying the replacement cost method or Lifo.

(2) Where the quantity issued is replaced simultaneously with the issue at the replacement cost prevailing at that time.

(3) Where the following relation prevails when the time of issue and that of replacement are different :

$$(p'_i - p_{i-1}) \Delta q_i = (p_{i+1} - p'_i)(q_i' - \Delta q_i)$$

Since conditions (2) and (3) are seldom satisfied in practice, the two methods will generally present different issue prices.

Lifo costs are different from replacement costs because the former are replacement costs actually incurred, while the latter are replacement costs at time of issue. Lifo costs may be larger or may be smaller than replacement costs $p'_i q'_i$ that will be required if replacement is made at the same time as issue is made. In case of rising prices, Lifo costs are smaller than replacement costs if they consist of costs prior to p'_i. We may speak of this difference $p'_i q'_i - p_{i-1} q'_i$ as speculative profit, for this profit has been made by the care taken by the enterprise of the inventory in question in anticipation of production requirements. On the contrary, if replacement is made at a price higher than p'_i after issuance is made, a loss $p_{i+1} q'_i - p'_i q'_i$ will result, which may be called speculative loss, for it is an additional expense incurred due to deferred replacement, and could have been avoided, had replacement been made at the same time as issue is made. In the case of declining prices, speculative profit will arise from deferred replacement, and speculative loss will arise from purchase in advance.[1]

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(1) The base stock method will also give rise to speculative profit or loss in the same sense, and includes such profit or loss on the base stock in the gross profit or loss from sales. In other words, the actual replacement costs for the quantity issued are here cost of goods sold.

The term speculative profit or loss may have another meaning with regard to the base stock method. It may mean profit or loss on ' speculative holdings ', the excess of inventory

This concept of speculative profit or loss will throw additional light upon the nature of cost allocation of inventories by Lifo. In other words, it implies the inclusion of speculative profit or loss as described above in the gross profit or loss from sales that Lifo charges replacement costs actually incurred (hereinafter referred to as 'actual replacement costs') against revenues, instead of replacement costs that have in fact never been actually incurred. By the replacement cost method in the strict sense of the term, replacement costs at time of issue will be charged against revenues and speculative profit or loss will be excluded from the gross profit or loss from sales. That is, it is not 'speculative profit or loss' but 'inventory profit or loss' that Lifo aims at excluding from the profit and loss of the period. The concept of costs of goods sold are related to the concept of capital to be maintained. Lifo is based on the concept of real capital maintenance so far as inventories are concerned, and is to be distinguished from the concept of capital maintenance on the replacement cost basis.

III

Lifo so far as ending inventories (q_s) are equal in quantity to beginning inventories (q_0), intends to treat actual replacement costs of goods sold during the period by valuing ending inventories at the same prices as were assigned to beginning inventories. This means matching of current revenues and current costs. Costs of goods sold for the period by Lifo may be measured by the following formula $(i=1, 2, 3,\cdots\cdots, n)$:

$$p_0 q_0 + \Sigma p_i q_i - p_0 q_s$$

Here $\Sigma p_i q_i$ stands for the sum total of acquisition costs (by purchase or production) during the period. This formula show that q_s is valued at p_0 and costs of goods sold for the period are $\Sigma p_i q_i$ where $q_s = q_0$.

Some people maintain that such matching of revenues and costs on the same price level is attained by Lifo for a period as a whole, but, as a necessary corollary of matching of revenues and costs on the same price level for a period as a whole, such matching for segments of a period should also be considered

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holdings over the base stock. Here the speculative profit or loss is not the difference between actual replacement costs and current replacement costs not actually incurred, but the difference between actual acquisition costs and revenues from sales with regard to speculative holdings.

as what Lifo aims to attain.

Thus Lifo, founded on the concept of real capital maintenance, has its own reason for being, and is far more practicable than the replacement cost method, for the latter requires artifical replacement costs to be measured at each time of issue.

On the other hand, Lifo has its weakness by reason of the actual cost principle on which it is based. Where ending inventories are smaller in quantity than beginning inventories, the quantity liquidated is valued at p_0, and to this extent matching of revenues and costs on the same price level is disturbed. This is an unavoidable defect consequent on the actual cost principle that holds Lifo in its grip. The extent to which such matching is disturbed varies with the quantity liquidated and with price variances so far as the said quantity is concerned. This will not, however, be an adequate reason for criticizing Lifo, because Lifo presupposes a free market where materials may be freely acquired in quantities needed for business operations.

It may safely be asserted that Lifo has its theoretical foundations in the determination of proper periodic profit or loss not including inventory profit or loss by charging actual replacement costs against revenues.

SPATIAL PROBLEMS OF BUSINESS ACTIVITIES

Minoru BEIKA

I

Space and time problems in certain locations of a firm.

An industrial firm is a physical existence, and necessarily has a certain location and spatiality. Consequently, a firm faces space and time problems, more or less, in its business activities.

1) The problems in business activities due to spatiality, may be found in the external and internal relations of a firm.

(1) The external locational problems of a firm are found in the various business activities, that is, the financing, purchasing, manufacturing, selling, managing, providing of equipment and labour, and so on. These have been generally approached as the so-called theory of industrial location, by investigating the locational factors relating to those activities.

(2) But the internal spatial problems in a firm must also be taken into consideration, because most of the present-day industrial firms have shown some tendency toward physical branching out. At present many industrial firms have not only a considerable number of establishments, but also the principal office may often be situated, separated from other establishments of their own, and also these establishments that include selling offices, store houses, service stations, and so on, may be placed in spatially different positions. Occasionally, the principal office itself may be divided into different localities because of its functions.

In the early stages of the capitalistic economy, an industrial firm had been operated from one point, in one sense, and each function of its

business activities had not been spatially differentiated at all. The so-called theory of industrial location seems to be considered on the fundamental basis of such a one-point-situated firm. But now the size of a firm has grown larger and larger, the structure of such a business enterprise has become more and more complicated, and the formation of the organization for such complicated functions is perhaps, more or less, to be accompanied by the internal spatial differentiation of a firm. Rather, it is a general tendency that the business activities of a firm are spatially differentiated from each other to some extent.

Such internal differentiation (that is, physical decentralization) of a firm is realized by the adjustment between the factors affecting the size of the business (including both the firm and its constituent establishments) and the locational factors affecting the various business activities of the firm. The factors which affect the size of the business unit are the several activities of the firm such as, technical, purchasing and marketing, managerial, financing, and adaption to the changing conditions, external and internal. Moreover, the suitable size of the unit demanded by each factor often may not coincide, or sometimes conflict with each other. For instance, the technical factor may determine the minimum limit of the size of the plant, and tend relatively to enlarge its size for technical efficiency, while the managerial factor may restrict the maximum limit of the size, in spite of the means by several types of management organizations to be able to delegate authority and responsibility (that is divisional or functional decentralization). Furthermore, whil the optimum size of a manufacturing unit may be medium or not too large, the marketing factor may demand the enlargement of the size of the firm, and as a result, the firm may come to have several manufacturing units which are located respectively at different suitable sites. In short, the relations among the factors which are to affect the suitable size of a firm and its constituent establishments, are the fundamental condition that make up the internal spatial differentiation of the firm. Each internal establishment constituting the firm is respectively to be located actually at a certain point by the mutual relations of the locational factors affecting its business function. If, in a certain industrial firm, its plants are material-oriented, the selling establishments may be located in the center of the

markets, to offset the weakness for the sales competition of its plants. A certain vertically integrated firm may arrange its plants at each processing stage in their respective suitable locations. Therefore, the spatial problems of the business activities of the individual firm are not to be approached from the basis of a one-point-situation in the general locational theory, but these must be actually investigated from the mutual relations between the internal spatial differentiation and the external locational factors of the firm.

2) A firm, moreover, is confronted by time problems, as it is a physical existence. Originally, the locational problems of a firm, have been given attention in the industrial world, as the size of business enterprises has grown larger and larger through the remarkable industrial development since the last half of the 19th century. The present large plants are very difficult to move from their localities for improvement of their locational conditions, because of the heavy stationary equipment. Consequently, industrial firms need to give careful consideration in choosing the locations of their establishments. But on the other hand, owing to the same reason, the firm is bound to adapt internal and external changing conditions, as much as possible, technically, economically and socially on the basis of a certain fixed locational construction of its constituent establishments. Thus a firm confronts time problems relating to its spatiality. Such time problems may be solved by the active improvement of the existential conditions of a firm and the passive adaptation of the internal conditions of a firm.

The economic spatial phenomena in general has been formed by the accumulation of various activities of many industrial firms which have adopted individual spatial business policies, characteristically. Therefore, a static observation in general for the economic spatial phenomena is possible, since respective specialities of various economic activities in individual firms considerably offset each other as a whole. But it is of less value to investigate statically the spatial problems of individual firms, because it is substantially an indispensable theme for an individual going concern to confront time problems relating to its spatiality.

Thus, the spatial problems of an individual firm, are not to be studied on the basis of the " one-point-situation " which seems to be the assumption of the so-called location theory, but must be investigated by considering the relations

between the external locational factors and internal spatial differentiation of an individual firm, and the time problems which the firm confronts in certain locations of its various constituent establishments. Therefore, such spatial problems of an individual firm cannot be solved by the idea of the " most " suitable location, but the idea of possibility or limitation of the suitability for the location tends to become more important for the actual establishment of an individual firm. These spatial considerations are necessarily related to the speciality of the business features, which are formed by the characteristic combination of the several existential factors of the firm. Namely, the reference to the relations with the business features of an individual firm is an important theme for the study of the spatial problems of an individual firm.

II

A study of the spatial problems relating to the business feature of a firm.

A considerable part of the locational factors for a certain firm is represented in the cost structure of the products in the concerned manufacturing establishment. So far as it is limited to such scope, the spatial problems may be grasped by practical calculative considerations, and so the analysis of the transfer (procuring and selling) cost and the processing (manufacturing) cost, may be the principal theme of the study in choosing the most suitable location for a certain establishment of a firm. Such a program is a static research, on the assumption that the internal and external situations of the concerned firm and its establishments, the business features of the firm, do not change. But as stated before, the spatial theme of the business activities of an industrial firm, essentially consists of space and time problems, and has a close relation to the internal and external situations of a firm. Therefore, a mere static research by practical calculative considerations will be too difficult to clear up the actual spatial problems which an individual firm confronts under complicated conditions by internal differentiation, and internal and external changing factors. In other words, the firm confronts such problems by an appropriate modification of a combination of the existential factors relating to its spatial feature.

The problem for the optimum combination of the existential factors of a firm is ideally the theme for calculative consideration, in the case of the spatial problems stated here. But the physical business features are even now too complicated to grasp the points of the actual spatial problems in general only

by a mere calculative consideration, in spite of the recent remarkable development of mathematical methods for the investigation of business activities. Thus a realistic analysis of the characteristic business features of an individual firm is a significant approach to spatial problems. A calculative consideration of locational factors should also answer the purpose with the help of such a research relating to the business features.

An industrial firm is operated for attaining its economic purpose, based on a certain technical system and depending on certain economic, especially marketing conditions, both of which are chosen by the firm and affect the firm. Accordingly, the spatial problems of a certain firm are also one of the representations of the characteristic business features formed by the concerned firm. Thus, in short, the spatial problems of a firm (including its constituent establishments) relate directly not only to the so-called locational factors of the technical and economic (especially marketing) existential forces, but also indirectly to the business features which are characteristically formed by these technical and economic forces. Such an approach to the business features relating to the spatiality of the firm, consists of three phases, which are directly and indirectly technical, economic, and structural characteristics of the firm, as follows :—

(1) The technical characteristics of a firm relating to its spatial problems.

The technical characteristics of a certain firm are found in two phases. The one relates to the characteristics about the materials used and the products manufactured in the firm, and the other relates to the technological characteristics in manufacturing processes, which the concerned firm adopts. A considerable number of the technical characteristics of a firm are also directly regarded as locational factors which affect the location of its establishments. These are, for instance, climate, geology, weather, motive power, technical nature and relative weight of materials and products, transportability, quality and quantity of required labour, the extent of progress of a technical method to overcome natural restrictions, and so on. These factors affect the spatial feature of a firm not only as technical characteristics themselves, but more remarkably through the filter of economic consideration. Those problems were in general, under consideration by the usual locational study. But the technical characteristics, especially the technological in manufacturing processes have often formed

the structural specialities of a firm, and moreover these specialities relate to the spatial business featuress of a concerned firm to a considerable extent. Namely, one point of such specialities is whether the technological characteristics of a certain firm depend on mechanical industry, or apparatus industry, and the other point is the physical divisibility of manufacturing processes. Although these features do not always affect directly the locational factors, these form the structural characteristics of a firm, and are actually found in the size of its establishment, the internal spatial differentiation etc. within the firm. The size of the operative unit and the internal differentiation also give the firm a speciality on spatial problems. These points have often been overlooked by the usual locational study.

The technical characteristics of a firm are directly and indirectly different in respective kinds of industries and even in individual firms. Especially in the case of their indirect effect, in Japanese industries, the representative firms of the cotton spinning industries have respectively a considerable number of middle-sized plants, manufacturing relatively the same kinds of products, the large mechanical engineering industrial firms have several large plants, each of which are manufacturing different products, and the considerably large chemical firms have a small number of excessively large-sized plants. These facts are related characteristically to their spatial problems.

(2)   The economic characteristics of a firm relating to its spatial problems.

The marketing nature of materials and products as the object for business activities of a firm is directly found as some of the locational factors for an industrial firm. The industries are generally divided from the viewpoint of the transported weight and its transfer cost into several kinds, such as material-oriented, market-oriented, and other-factors-oriented. Of course, " the transfer cost " in these cases must be considered as including the problems about the kinds of transportation means, freight rates, extent of freight absorption by buyers or sellers, and so on.

Moreover, transportation factors for industrial location do not only relate to cost problems, but also to time problems, that is the timing of the transportation of raw materials, products and persons concerning the transactions, and communication for business use. The time element is fairly

difficult to grasp directry by cost calculations, so that it tends often to be overlooked. But this too is one of the essential factors for severe competition in the present industrial world. Such time elements relate to the forms of transactions. It must be suggested that the scope of the market area is considerably different according to the forms of transactions carried on as real goods, samples, standard goods, or branded goods. By the result of the consideration on the transfer cost as above stated, a firm may modify the combination of the kinds of raw materials used or of products manufactured.

Apart from the direct spatial effect by the economic characteristics stated above, these may specialize the structural features of a firm and its establishments, and as a result, indirectly may characterize the spatial problems of a firm. In other words, they are the problems relating to the economic environment affecting the business activities, which are found, limitedly as establishment-community relations, and broadly as the effects on a firm by the specialities of national economy. The special structure of the national economy has more or less characterized the business features of industrial firms and as a result, firms will have spatial problems different from those in the other countries to some extent. Such indirect effects on spatial business features by the national economy can be actually understood by comparing the spatial features of industrial firms in the same kind of industries among several similarly-industrialized countries, for instance, in the cotton textile industry, the iron and steel industry, or the electric machinery industry. The approach to these points is not usually treated by the so-called locational study, and yet it must be attached to the study aimed here, without setting it aside, due to the proper nature of the spatial problems which an individual firm confronts.

(3) The structural characteristics of a firm relating to its spatial problems.

As said before, considerable parts of the technical and economic characteristics of a firm are not only the locational factors directly, but also those that determine the type of the structural features of a firm, and indirectly such effects tend to characterize the spatial feature of a firm. The structural characteristics which indirectly form the spatial features of a firm more or less, mean actually the form of the operating establishments which constitute a firm, the sizes of the establishments, the type of the

internal spatial differentiation, and the spatial mutual relations between the concerned firm and its associated industrial firms. The external problems of a firm as the spatial mutual relations stated above, are found in the physical types of centralization and decentralization, or vertical, horizontal and synthetic integration among the firms. Conversely, these structural characteristics of a firm also determine the technical and economic characteristics to some extent and as a result, indirectly relate to the spatial features. It could be generally said that when the size of a firm is larger and a firm has more establishments, the concerned firm will have more adaptability to changing conditions, (in other words to the time problems) externally and internally.

In short, if an individual firm confronts space and time problems due to its physical existence, it must be the substantial theme for its spatial problems to investigate actually and synthetically the interaction among the technical, economic, and structural characteristics relating to the spatiality which form certain business features of the firm.

III
Attenda

(1) Program of approach

The program of these approaches to the spatial problems can not remain in a stage of general observation, but it is forced to step forward to an observation of several types which can be grasped by kinds of industries, and by the types of certain industries, and more minutely by individual firms. Because the business features are not only specialized by the kinds of industries, but also by the types of firms even in the same industry. Moreover, as a result of the growing development of industrial enterprises, a simple classification by the kinds of industries is often very difficult because of the fact that present firms have not only several integrated industries, related or non-related, but also the manufacturing establishment of the firm itself has also often included several industries on the same sites. Therefore, the general conception for the study of the spatial problems relating to the business features of a firm tends to be insufficient in definiteness, but this means the real feature of the spatial problems which the individual firms confront.

(2) Land use competition

In addition, the study of spatial problems must be supplemented by further investigation in view of the land use competition. The spatial characteristics of an industrial firm may be not only given by its own business features, but also may be relatively affected by the mutual relations for land use competition among many operating establishments of the independent firms belonging to the various kinds of industries in a certain district.

The present large plants are not regarded as being of one point in locality, but as of having some extent in themselves, and moreover, the growing tendency of spatial concentration by many plants has increased the necessity of the regional approach to industrial districts. Land has originally the utilities of quality and locational value for business activities. Accordingly, land can be regarded as having some possibilities and limitations to the existence of an industrial firm, which differ according to the kinds of industries, in the specialities of their individual business features, and in the mutual relations among the concerned establishments of independent firms. The approach in view of the qualities and locational values of the land, and of the land use competion, could be helpful to the study of the spatial problems of an individual firm.

(3) Spatial business policy.

The spatial problems will necessarily be confronted by the spatial business policy of the firm. The spatial business policy is thought to be divided into two phases, which are the problems of the locational decision-making by choosing the relatively more suitable locality, and of the locational adaptation to the changing conditions (the time problems) in a certain location. The policy of the locational adaptation, the latter theme,consists of the external and internal policies. The external policy of the locational adaptation is chiefly the problem of community-relations and the active formation of more suitable conditions. The internal policy is chiefly the managerial problem of the coordination and communication among the spatial differentiated establishments in an individual firm, and the problem of the passive adaptation within the firm to the changing conditions. The latter, the passive adaptation, means the problems of changing the technical process, the market, and price policy and so on.

THE NATURE OF THE MORGAN CONTROL

Tadakatsu INOUE

Much has been written about the concentrated control of American business in the hand of John Pierpont Morgan, but the nature of his control has never been made very clear. What we have tried to do in the following paper, therefore, has been to show by what means he acquired such power in so many large corporations; what circumstances were favorable for his aquisition of power and why he acquried and used his power in a number of important corporations.

I

An investigation of the Pujo Committee in 1912—13 shows the degree of power that Morgan obtained in banks, trust companies, transportation systems, and public-service and industrial corporations. It appears there that a group composed of J. P. Morgan & Co., the First National Bank, the National City Bank, and the Bankers' and Guaranty Trust Cos. together held 341 directorships in 112 corporations having aggregate resources or capitalization of over 22 billion dollars. Of these 341 directorships, the members of the firm of J. P. Morgan & Co., the recognized leader of the group, held 72 in 57 of the greater corporations.

In acquiring power in these corporations stock ownership was not essential to Morgan. Morgan's strength by which he extended his influence in these corporations was based fundamentally upon his strategic position as an investment banker.

Backed by his father's strong position with English investors, John Pierpont Morgan entered upon his banking business in New York in 1860 or 1861. Henceforth he played an active rôle in furnishing capital to the government, railroads and industrial corporations. Morgan's first large operation in government finance was in the sale of the refunding loans of the United States in the period from 1876 to 1879. It was in the refunding operations that Morgan won his first recognition as the ranking investment banker in the United States. Thereafter Morgan continued to advance in government finance. In 1895 the Morgan-Belmont Syndicate succeeded in selling gold bonds to protect the dwindling gold reserves of the United States, In 1899 Morgan participated in a large Mexican loan offered in Europe. And in 1901—02 Morgan subscribed to British government loans in connection with the Boer War financing.

Morgan played a more important part in railroad finance. In 1879 he sold in London a large part of the holdings of W. H. Vanderbilt in the New York Central. The affair was regarded as a grand financial operation and it gave Morgan a strong position of leadership in railroad finance. In 1880 Morgan arranged for the underwriting of $40,000,000 bonds of the Northern Pacific by a syndicate composed of several of the best known bankers in the United States as well as in Europe. In the late eighties Morgan took the leading hand in reorganizing and refinancing some of the tottering railroads. These were the Philadelphia & Reading, the Baltimore & Ohio, and the Chesapeake & Ohio. The most spectacular operation in railroad finance, however, was the large scale reorganization of the leading American railroads in the nineties. Morgan had charge of the reorganization of the Richmond & West Point Terminal, the Reading, the Erie, and the Northern Pacific and was concerned in the reorganization of the Baltimore & Ohio and the Atchison.

Morgan also furnished much financial service for American industry at the time when the over-rapid expansion and the resulting destructive competition had to be curbed. In 1892 he helped organize the General Electric Co. by combining several concerns. In 1898 he financed the organization of the

Federal Steel Co. in which three large companies were combined. In 1901 he directed and financed the formation of the United States Steel Corporation, a holding company with a capitalization of $1,400,000,000. And in 1902 he organized the International Harvester Co.

While Morgan rose to outstanding leadership through his own activities in reorganizations and combinations and in underwriting and wholesaling securities, he also succeeded in gaining the active coöperation of financial institutions. Morgan and George F. Baker, head officer and dominant power in the First National Bank, had been close friends and business associates from almost the time they began business. And this bond was strengthened when Baker invited Morgan to make a considerable investment in the stock of the First National Bank. Morgan likewise acquired an interest in the National Bank of Commerce and in the National City Bank of New York. Morgan also developed close relations with two trust companies. In 1903 the Bankers' Trust Co. was organized and a Morgan partner became one of the three members of its voting trust. And in 1909 Morgan acquired an interest in the stock of the Guaranty Trust Co. with representation upon its board of directors. About the same time Morgan and his associates aquired a majority of the capital stock of the Equitable Life Assurance Society.

By establishing close relations with these institutions which ranked high among banks of the country, Morgan further strengthened his own position as an investment banker. The community of interest among these individuals and institutions resulted in the growing concentration of the control of investable funds in the hands of a few leaders, among whom Morgan was the dominant figure. It seems fair to say that one of the most important sources of Morgan's strength was his strong control over the channels of supply of fund and financial services.

II

In examining how Morgan acquired his power in a number of important corporations, we must take into account not only his strong control over the channels of supply of financial services but also the conditions of demand for those services. It was in the period between 1879 and the beginning of the 20th century that Morgan played a dominant part in railroad and industrial financing. Although it is seldom safe to generalize about characteristics of that

period in American business history, the period was firstly characterized by severe and disastrous competition between specialized firms. Accordingly, the period was also marked by bankruptcy or near bankruptcy in many of these firms. Reorganization became the great issue and it was done in two ways. In some firms, by great efforts business was reorganized from within. In other cases there was no alternative but to disperse or to be reorganized by someone from the outside, especially by investment and commercial bankers. Both ways were used, but generally speaking the latter was more common. Lastly the period was marked by the movement toward combinations. The combination movement, both horizontal and vertical, was well under way by 1897. From 1898 to 1903 there was a real mania for combination. Great combinations were organized in every field where large-scale business was possible. Like reorganization, the support of bankers and financiers was almost essential to the formation of combinations, though some firms needed no outsiders in doing this. In all, an unprecedented demand for the services of bankers marked the decades following 1879 when Morgan initiated railroad financing on a public scale. Thus the demand factor in the capital market was also favorable for the extension of Morgan's influence.

In practice, certain occasions were particularly favorable for the aquisition of power by Morgan. In the first place, as has already been suggested, he acquired power in the case of a reorganization. Reorganization was one of the most fruitful occasions for the extension of Morgan's control. This was particularly true of the railroad reorganizations during the nineties.

The earliest of Morgan's reorganizations at that time was the creation from the ruins of the Richmond Terminal system of the Southern Railway. In 1893 a reorganization committee drew up a plan for the rehabilitation of about 6,000 miles of track, excluding the Central of Georgia, one of four members of the Terminal system. The first problem which arose was that of the cash requirement occasioned both by the physical and the financial conditions of the system. The necessary cash was to be provided by the assessments levied on the stockholders and by the sale of new securities. The more important problem, however, was that of the reduction in fixed charges. The new company was to issue stock and bonds which would replace the old securities. The result would be an immediate reduction in fixed charges from $9,500,000 to $6,789,000. The syndicate, headed by Drexel,

Morgan & Co., would guarantee the sale of the new securities and succeed to the rights and privileges of any former stockholders not wishing to pay the assessments. And the stock was to be placed under a Morgan voting trust. In 1894 the reorganization was finally completed and the Southern became the strongest system in the South.

Likewise, by taking the leading hand in its reorganization Morgan gained control over the Erie. He also entrenched himself in the Reading, the Northern Pacific, and the Baltimore & Ohio.

Another type of situation in which Morgan often acquired power occurred in the case of a combination. This was true, for example, in the formation of the United States Steel Corporation in 1901, and also of other combinations at that time.

When the steel trust was formed by acquiring ten large companies, Morgan and his partners and associates were placed at the head of the giant organization. The testimony of Morgan before the Pujo Committee made it apparent that the board of directors was under the strong control of the banker who was also the member of the board. Beside Morgan himself, Robert Bacon was the chairman of the finance committee and was succeeded by George W. Perkins, another partner of J. P. Morgan & Co. Elbert H. Gary, the chief executive officer of the corporation, was also close to Morgan.

Morgan's domination over the United States Steel Corporation was acquired, not through stock ownership, but through his financial services in backing the organization of the company. The support of bankers and financiers was almost essential to the combination which was intended to absorb ten large companies with an aggregate capitalization of about $867,550,000. A syndicate, headed by J. P. Morgan & Co., was formed to subscribe sufficient cash to back an arrangement for exchanging the new corporation's stock for that of constituent companies. The syndicate members then entered into an agreement with the corporation by which they undertook to secure at least 51 per cent of the stock of the constituent companies and immediately to furnish $25,000,000 in cash. On its part, the corporation agreed to purchase the stock and to issue its own securities in certain specified amounts. The result can best be shown by quoting from Arundel Cotter's United States Steel : A Corporation With A Soul (1921).

" Practically all the stockholders of the old companies, satisfied that with Morgan backing the new company its success was fairly well assured, took

advantage of the exchange offer, with the result that at the end of the first
nine months of its existence less than one per cent of the old securities were
still held in the hand of the public and of the Corporation's capital as
authorized $1,319,229,000 had been issued."

The United States Steel Corporation, thus, stands as a striking example of
Morgan's control which was extended through consolidation.

There were also other circumstances in which Morgan extended his influ-
ence in particular companies. For instance, he established intimate relations
with a firm when the nearly monopolistic owner of its stock sought to transfer
his ownership to the public. Such was the case in the sale of the New York
Central stock in 1879. When William H. Vanderbilt succeeded his father in
the absolute control of the New York Central in 1876, public opinion was
aroused against him and the legislature began to impose heavy taxation.
Then Vanderbilt asked Morgan to sell $25,000,000 of his stock. Only a
powerful banking house could possibly handle the sale of so large a block of
stock without upsetting the market. The sale was made in London with ease
and netted Morgan a profit of about $3,000,000, in addition to inaugurating
an alliance between the Vanderbilt and Morgan interests. Not only was
Morgan made a director of the New York Central and his firm the company's
financial agents, but Morgan found it easy to maintain his influence subsequently
as a result of the weakening of the control power of Vanderbilt through the
diffusion of ownership.

The affair of the New York Central shows us that the power of Morgan
was more easily acquired and used when the strength of owners have declined
with the diffusion of ownership. Similar factors entered in the case of combi-
nations. On the contrary, Morgan met difficulties in retaining his control
when the relative strength of owners was strong. This was true, for example,
in the financial readjustment of the Baltimore & Ohio in the late eighties.
In 1887—88 Morgan undertook to place the road on a sound financial basis
and organized a syndicate to furnish the money. In return the syndicate
made three demands : the company's statement must be verified ; the manage-
ment must be placed in competent hands'acceptable to the syndicate ; and
agreements must be made with other trunk lines about the New York traffic.
At the request of the Syndicate Samuel Spencer was made president of the
road, replacing the younger Garrett, and a thorough reform of the system was

initiated. As part of this program an investigating committee began a careful investigation of the past management. But this was more than would be permitted by the Garrett family. At that time the Grarrett holding amounted to from 50,000 to 60,000 shares out of a total of 150,000 shares, or, deducting the 32,500 shares held by the city of Baltimore, which had no voting power, to about one-half of a total of 117,500 shares. This gave them undisputed control. The family interests elected their own candidate president and Spencer was ousted. Of course the syndicate refused to go ahead with the refinancing scheme and Morgan's efforts were in vain.

The experience in the Baltimore & Ohio, and also in the organization of the Philadelphia & Reading in 1886—87 taught Morgan an important lesson for the future: the work in financial readjustment and reorganization may prove to be in vain if control is still exercised by the stockholders before the company is firmly established. Thus, in the railroad reorganization of the nineties which we have already described, Morgan perpetuated his control by means of voting trusts and even after the voting trusts had expired his representatives were usually found on the boards.

III

In the last section of this paper, we shall attempt to get some understanding of why Morgan acquired and used his power in a number of corporations whose securities he offered to sale. Although Morgan had charge of a certain department of the business of the commercial bank, his first concern was the investment banking business. From 1902 to 1912, for example, his firm was directly responsible for leading in the marketing of corporated issues totaling almost two billion dollars.

In order to carry on a successful investment banking business, it is especially neccssary for a banker to get the trust of his clients. By winning the reliance of his customers, an investment banker is more easily able to sell a large amount of securites which he purchases at his own risk, or to guarantee the sale of these securities. The basis of that reliance is the investment quality of the securities which he offers or offered in the past. On the part of the investment banker, here arises the necessity of protecting his clients' interests against loss. In doing this he will resort to every means : he may undertake the work of reorganizing bankrupt companies whose securities he has sold, so that they may again be

put upon a solvent basis; he may take the leadiag hand in combining rival firms, one of which he has financed; he may play a leading part in selecting the directors and chief executive officer who are to head a new company whose securities he offers to sale; and he may create a voting trust with himself or his associates as voting trustees in the reorganizations dominated by him.

As an investment banker Morgan went ahead in just the same way. As to the relations between Morgan and his clients, the Wall Street Journal (April 1, 1913) reported as follows:

"······ Mr. Morgan would go to the extreme in protecting any clients or banking house which had been in close and honorable association with him, and he expected from them the same loyal support in times of stress and financial trouble."

Morgan himself testified as follows in the Money Trust Investigation on the question why he acquired his influence in the corporations whose securities he sold

"······ Many questions were asked as to the wisdom in having representatives of private banking houses sit upon the boards of corporations, whose securities the same bankers frequently offer for sale. This practice ······ has arisen not from a desire on the part of the banker to manage the daily affairs of the corporation or to purchase its securities more cheaply than he otherwise could; but rather because of his moral responsibility as sponsor for the corporation's securities, to keep an eye upon its policies and to protect the interests of investors in the securities of that corporation. For a private banker to sit upon such a directorate is in most instances a duty, not a privilege."

Though there will be a difference of opinion as to the validity of the testimony of Morgan, there is probable no question that one of his principal purposes of acquiring power in such corporations was the protection of his clients which would result in putting him into a strong position among those investors. It should be noted that one source of Morgan's strength was his intimate relations with his clients.

ON THE EFFECT OF ACCELERATED
AMORTIZATION FOR TAX PURPOSES

Nobuko NOSÉ

I. Preface

During World War II and the post-war period, the accelerated amortization for capital assets was introduced into the tax system of many nations to encourage private investment. The Japanese government also, enacted a new tax law in 1951 which contained an act for accelerated amortization.

Lately, a greater intensification of this system is expected, because the Japanese government and business men believe that accelerated amortization is a suitable weapon for encouraging investment and consider this a substitute for subsidies. Thus, we have need to analyse the effect of accelerated amortization on economy as a whole. We shall examine this taking special notice of its distribution effect and effect on the industrial concentration in Japan. Our steps of analyzation are as follows.

1. Theoretical view of accelerated amortization for tax purposes.
2. A survey of its function in Japanese economy.
3. Conclusion.

II. Theoretical view of accelerated amortization for tax purposes.

In the early work by Mr. Brawn[1], the effect of corporation tax on private investment is investigated. His idea is represented by Prof. Goode[2], who shows that tax savings produced by accelerated amortization encourage private investment through (i) decreasing the uncertainty and (ii) increasing

the availability of funds to invest. Prof. Domar(3) and Mr. Eisner(4) try
to generalize the above idea, and they show that the benefit of tax savings is
not uniformally given to all firms and that the growing firm receives the most
benefits through the famous Domar-Eisner model. Moreover, they analyse the
effect of accelerated amortization to economy as a whole. Mr. Domar shows
that the induced private investment and the rising rate of growth of invest-
ment raise the level of the national income and the rate of growth of
economy. But contrary to Domar's optimistic view, Eisner takes the redistri-
bution effect of tax savings seriously, and suggests that the depressive effect
on consumption demand is so large that the induced investment by accelerated
amortization would soon be absorbed and the level of national income and its
rate of growth would not be raised.

Obviously, these discussions improved the matter. But, we yet have some
questions unsolved. These are as follows;

i   Does accelerated amortization encourage concentration among firms and
industries or not?

ii   Does the redistribution effect caused by accelerated amortization effect
the recipients of dividend and the laborers indifferently or only the laborers?

iii   How can the private investment induced by accelerated amortization
be realized in an underdeveloped economy?

These questions should be solved in order to investigate the function of
accelerated amortization in Japan. So we investigate these as follows.

(1)   The effect on firms.

To analyse whether accelerated amortization promotes concentration or
not, first we need to see what firms have the conditions to utilize this tax
system. The conditions are as follows.

a. The power to prepare a fund to invest.

The point by which accelerated amortization is distinguished from the other
tax benefits, i. e. reduction of corporation tax, is that this is realized only when
the firm acquires capital equipment. To acquire a capital asset a firm must
have a certain fund for purchasing. Of course, accelerated amortization
immediately brings back the fund (equal to tax saving) to the entrepreneur's
hand, so the firm only need a fund for a certain short period as compared
with a case without such a benefit. At any rate, a firm must have some
fund to invest. If not, he would be disqualified from receiving such a tax

benefit.

b. Capacity to absorb high cost.

To carry accelerated amortization, a firm must have the capacity of profit to absorb the abnormally high cost which consists of normal cost plus the difference of the accelerated depreciation cost and normal depreciation cost. Defining that (1) the depreciation cost by accelerated amortization is the normal depreciation cost D multiplied by acceleration multiplier a, and (2) the current profit is the difference of sales price p and current cost c which contains normal depreciation cost per quantity multiplied by quantity x, this condition is noted as follows;

$$(p-c)x \geqq D(a-1) \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots(1)$$

c. The average rate of profit after accelerated amortization.

In a capitalistic economy, capital funds flow from unprofitable firms that fail in getting an average rate of profit to very profitable firms. Marx called this 'the law of the average rate of profit'. In the real world, there are many firms in different conditions. And the firm that has the capacity to absorb abnormal costs and is able to carry on accelerated amortization must maintain its rate of profit after accelerated depreciation at the level of the average rate of profit in economy. If it fails to do so the fund flows out and flows into other firms which can maintain a level above or equal to such a rate of profit.

Defining the rate of profit after accelerated depreciation and the average economy as μ and $\bar{\mu}$ respectively and the degree of utilization of capital per quantity and normal depreciation cost per quantity as k and d respectively, this condition is represented as follows.

$$\mu \geqq \bar{\mu} \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots(2)$$

$$\mu = \frac{p-(c+d(\alpha+1))}{k} \cdots\cdots\cdots\cdots\cdots\cdots(3)$$

Now we shall reexamine the above three conditions. As for the first, it depends upon the other two conditions because the fund to invest would increase as good expectations about the other two are given. Next, the second condition is satisfied when a firm minimizes cost and/or increases quantity to sell and/or maintains the most profitable price. This condition is relieved to some extent by the system of carrying over the loss[5]. As for the third condition, the matter is not the amount of profit but its rate. Then, for

example, if the profit maximization to absorb the accelerated depreciation
were accompanied by an unproportional increase of capital, the third condition
could not be satisfied. So, to satisfy it, a firm has to (i) maintain the monopoly
price and/or (ii) apply a method of production that minimizes the cost per
quantity *and* lessens the degree of capital utilization below a certain level at
the same time. A firm would use one or both of them according to its ability.
Under free competition, a competitive firm is oblige to sell at the price determined
on the market and only introduce (ii). On the contrary, under a perfect
monopoly, the monopolistic firm can use both of them.

From the above consideration, we can see that the tax benefit by
accelerated amortization is not given to all firms in general, but to a special
firm, i. e. a firm that is able to satisfy the above conditions. Then, we return
to the problem of growing firms, brought forward by Domar and Eisner.

Does the profitability of a growing firm mean that of all growing firms?
We cannot agree with this. First, a growing firm is defined (by Domar) as
a firm that acquires a capital asset at a constant (positive) rate. This firm
is a firm that has continuously the power of preparing an investment fund,
that is, it has continuously to satisfy the above first condition. Moreover,
to be able to carry on accelerated amortization, a firm must satisfy the above
conditions 2 and 3 continuously. To say it repeatedly, this growing firm is
a firm that continuously maintains a profit to absorb the cost of accelerated
depreciation and average rate of profit after such depreciation.

In a growing firm, the hump of accelerated cost with the constant rate
of growth is considerably high in the initial years. So, only such a growing
firm as being able to satisfy the above conditions even in the early stage can enjoy
the benefit of accelerated amortization. This means that the firm to benefit
the most is not a growing firm but a special one, i. e. a growing big business.

Next, we advance to the effect of accelerated amortization. As for its
effect on a firm that can carry accelerated amortization, we agree with
Eisner, Goode, etc., that is the encouragement of private investment. An
investment induced by accelerated depreciation affects the firm in two ways;
i. e. (i) unchanged method of production and (ii) introduction of a new
method. Both methods increase profit and the rate of profit. (When the
new method is still not prevalent, the latter case, brings extra-profit to a firm.)
Then, the firm that cannot utilize this system is obliged to lessen its profit

and the rate of profit relatively and sustains a capital loss. Therefore, we understand that accelerated amortization is of advantage only in growing bigger and intensifies the tendency toward concentration among the firms.

(II)   The effect on income distribution.

Mr. Eisner says that accelerated amortization makes the firm pay less to his interest groups, i. e. wage earners and dividend recipients. But we must note that the dividend recipient can decide choice the firm to supply his fund and in doing so his measure is the average rate of dividend in the economy. There are certain minimum levels of dividends paid by firms. So it is hardly possible that the distribution effect caused by accelerated amortization to recipients of dividend is so large. Still more, the depressive effect on consumption by this is negligible.

The distribution effect on wage earners is, on the contrary more serious. When an investment induced by accelerated amortization does not change the old method of production, whether the reduction of profit (resulting from deductions of abnormal high cost) brings reduction of wages or not, depends on (i) the relation between a firm and its trade union and (ii) the level of unemployment in economy as a whole. When an investment introduces a new method of production, the firm substitutes capital for labour, as Eisner pointed out, so the wage tends to go down.

(III)   The effect on the economy as a whole.

i   Uneven impact on industrial structures.

Mr. Eisner is right in so far as he points out that accelerated amortization has an uneven impact on economy. But his opinion that all consumption industry is less favorable than all investment industry is not so exact. The wage earner suffers from the distribution effect but the recipient of dividends is exempted. Then, the consumption industry which is unfavorable is only the wage-good industry. On the other side, Mr. Domar suggests that investments induced by accelerated amortization bring an increment of national income through a multiplier chain. But this effect is not so large, because in the less advanced economy the investment demand is not met by home investment goods but by foreign investment goods. Even in the investment industry, a considerable part cannot enjoy the increase of investment demand. So, even for a short period, the investment multiplier is not so large as Domar suggests.

ii   Uneven impact caused by government's depreciation policy.

Adding to the above, the government's policy brings a more uneven impact to economy. The present governments regulate the rate of acceleration and differentiate it in every industries. Limiting the kind of capital asset for accelerated amortization, the Japanese government gives an uneven impact among the industries which possess much authorized capital assets and industries which possess little or none[6].

Then, we can conclude that accelerated amortization accentuates business and industrial concentration and makes the problem of income distribution more serious. This is the negative side of this system.

III.   A survey of the function of accelerated amortization in Japanese economy.

Now we return to the Japanese economy in 1950—55 with the above viewpoint.

The Japanese government enacted, three kinds of accelerated amortization. These are (i) 50% increase of normal amortization in three years, (ii) initial allowance and (iii) the accelerated amortization to capital assets for research purposes. These methods are applied to capital assets and tunnels for mining and ships to encourage investments in them. Now let us investigate the former two. Tables 'I' and 'II' show the industries which applied the 50% increase of normal amortization in three years and initial allowances respectively. The fact that tax savings are exclusively given to these industries implies that this system gives an uneven impact to the industrial structure in Japan.

Next, we take its effect on firms. Table III shows the rates of depreciation in these industries. Comparing with prewar rates, we see that postwar rates are considerably higher, specially in the steel and communication equipment industry. So, we can understand that accelerated amortization raises the rate of depreciation and makes depreciation the main source of funds in these industries. A firm which can absorb such a high rate of depreciation would not be a firm, or a growing firm in general, but a growing big business. Now we shall examine whether the concentration in business has been intensified by accelerated amortization or not in Japan[7]. Table 'IV' shows the movement of the degree of concentration in these industries. In communication equipment, in pulp and cement industries,

business are deconcentrated, but in other industries they are concentrated, and as a whole, they show a slight tendency toward concentration[8].

Next, we shall examine the distribution effect. From table ' V ', we see that the rate of dividend in these industries are slightly higher than the average rate of manufacturing and of all other industries. Moreover, comparing with the rates of growth in table ' VI ', we see that the rate of growth of wages is lower than the rate of the growth of dividends and slightly lower than the rate of national income since 1954. So we can understand that the distribution effect of this system is sustained by the labourer, and not by the dividend recipient. Lastly we return to the effect of accelerated amortization on economy as a whole. Table ' VII ' shows that since 1951 the import of machine is very large, the import from the U. S. A. amounting to 60—70%. The introduction of accelerated amortization for tax purposes in Japan was accompanied by the imports from U. S. economy. The Japanese white paper[9] reports on this as follows; ' the import of machine and technique has increased in steel, petroleum and electric power industies but on the other side machinery is relatively dull.' In Japan the industry to benefit most from this tax law is the iron and steel industries as table ' VIII ' shows. In the prewar period, this industry was unprofitable and its rate of dividend and depreciation was considerably low. The cause of the recent growth of steel is partly attributable to accelerated amortization. Moreover, we must notice that in this industry the concentration in business tends to become intensified. Then, we can conclude that the firms most to benefit are the growing big businesses in the iron and steel industry.

IV. Conclusion

The survey of Japanese economy in the previous section proves our theoretical viewpoint in § 2.

Now we can summarize it as follows;

i The accelerated amortization being utilized by special firms —— growing big business —— only, the industrial concentration is intensified.

ii Its effect on distribution is limited to the laborers and the recipients of dividend are exempted.

iii This system gives an uneven impact to the industries. The most to benefit in Japan is steel. On the contrary, a few investment goods industries,

i. e. machinery, are not so prosperous and the demand on them are consi-
derably absorbed by their competitor in foreign economy.   This means a
leakage in the investment multiplier chain.

The above points are the negative side of accelerated amortization, and
have been overlooked by analysts.   We must notice these points and give a
more general aspect to the theory of accelerated amortization.

Note (1)   E. C. Brawn, 'Income tax and Investment Motive,' in 'The Essays in Honor of Mr.
            A. Hansen.'
     (2)   R. Goode, 'Accelerated Depreciation Allowance as A Stimulus to Investment,' Q. J.
            E., Vol LXIX, May, 1955.
     (3)   E. Domar, 'Depreciation, Replacement and Growth,' A. E. J., Vol. LXIII, Mar.,
            1953, 'The Case for Accelerated Amortization,' Q. J. E., Vol. LXII, Nov., 1953.
            'Accelerated Depreciation : A Rejoinder,' Q. J. E., Vol. LXIX, May, 1955.
     (4)   R. Eisner, 'Depreciation Allowance, Replacement Requirement and Growth,' A. E.
            J., Vol. LXIII, Mar., 1933, 'Accelerated Amortization, Growth and Net Profit,' Q.
            J. E., Vol. LXVI, Nov., 1952. 'Accelerated Depreciation : Some Further Thought,'
            Q. J. E., Vol. LXIX, May, 1955.
     (5)   The Japanese government stimulates the carry over period as four years.
     (6)   The ratios of the investment of capital assets authorized for accelerated amortization
            to the whole investment of capital ssets are not uniform.   The ratios in steel, cement
            and motor vehicles are 42%, 18% and 38% respectively.   Source ; 'The White
            Paper on the Rationalization of Industry,' published by Ministry of International
            Trade and Industry. p. 83.
     (7)   The effect on industrial concentration is naturally realized after some lag. So, our
            investigation is a portion of the whole effect.
     (8)   After the end of the war, Japan gradually returned to free economy and tended to
            deconcentrate up to 1953.   From 1955, she has the tendency to concentrate.
     (9)   'The white paper on the Japanese economy in 1957,' published by the Economic
            Planning Board in Japan. p. 102.

Supplementary Data

Table 1. Industries authorized to 50% increase in three years.

100 million yen

Industry	Amount
Textile Products	39,023
Machinery	14,691
Pulp Products	9,999
Chemical Products	9,796
Iron and Steel	6,644
Mining	2,524
Others	13,332

Source; 'White Paper on the Rationalization of Industry,' published by the Minister of International Trade and Industry. pp. 86–7.

Table II. Industries authorized an initial allowance   100 million yen

Industry	Amount
Iron and Steel	35,816
Petroleum Products	9,160
Dyeing	6,877
Cement	6,290
Ship Building	—
Coal	14,852
Motor Vihicles	4,688
Cable and Wire	4,087
Construction	3,194
Tin Product	1,621
Alloying of Ferroas Metals	1,492
Rolling of Non-ferrous Metals	1,439
Fertilizer	1,269
Communication Equipment	1,209
Bearing	1,138
Metal Machine Tools	1,108

Sourece; 'White Paper on Rationalization of Industry'; ibid. pp. 88–91.

Table III. Ratio of depreciation

	1955	Prewar
Manufacturing	11.7	5.7
Cotten Products	9.49	6.1
Synthetic Fiber Products	16.08	7.5
Pulp and Paper Products	9.37	6.5
Fertilizer	12.58	4.9
Petrdleum Products	16.38	6.6
Cement	11.78	6.8
Iron and Steel	11.79	3.6
Non-Ferrous Metals	9.18	3.0
Machinery	10.89	5.3
Communication Equipment	11.08	1.6
Ship Building	10.12	4.3
Motor Vehicle	18.71	—
Mining	12.77	4.4
Construction	20.04	—

Source ; 'Analysis of Finacial Statements of Main Industrial Corporations in Japan,' published by Stasistics Department of The Bank of Japan.

Table IV. The tendency to concentration in Japan

Industrise		1954	1955	remarks
Cotten Products		54.1	54.6	
Synthetic Fiber Products		98.8	99.9	
Pulp, Paper Products		64.8	62.6	△
Fertilizers		87.3	87.8	
Petroleum Products		99.4	97.9	△
Cement		88.9	85.2	△
Iron		94.3	97.9	
Steel		74.5	77.3	
Alloys of Ferrous Metals		81.1	83.7	
Nor-ferrous.	Copper	85.8	87.6	
	Alminum	100	100	
	Zinc	63.0	65.5	
	Tin	—	—	
Machinery	Engines	64.9	73.8	
	Bearings	96.4	97.1	
	Tools	—	—	

Source ; 'White Paper on National Income,' published by Economic Planning Board in Japan.

Communication Equipment	87.1	84.8	△
Cable and Wire	80.9	78.9	△
Ship Building	67.8	81.6	
Motor Vihicles {large-siged	96.5	96.3	
Motor Vihicles {midget	90.3	98.3	
Coal	55.2	56.1	
Construction	—	—	

Note ; △ Indicates deconsentration.
Source ; ' The Report on the Industrial Concentration in Japan,' published by the Fair Trade
Mission. pp. 31–41.

Table V. Ratio of dividend in Japan

	1955	Prewar
All Industry	13.68	8.4
Manufacturing	15.07	9.5
Cotten Products	18.82	12.9
Synthetic Fiber Products	19.3	11.0
Pulp and Paper Product	19.4	9.5
Fertilizer	15.71	9.2
Petroleum Products	20.63	7.7
Cement	20.78	6.7
Iron and Steel	9.95	7.5
Non Ferrous	10.7	10.0
Machinery	9.16	9.7
Communication Equipment	19.03	11.5
Ship Building	10.35	6.1
Motor Vehicles	15.39	—
Mining	14.01	9,9
Construction	15.96	—

Source ; ' Analysis of Financial Statements of Main Industrial Corporations in Japan,' published
by Statistics Department of The Bank of Japan.

Table VI. Rate of growth in Japan

	National Income	Wage Income	Dividend
1950	21	23	99
1951	30	29	46
1952	17	18	32
1953	15	19	31
1954	4	3	22
1955	9	7	18

Table VII.   Import of machine induced by accelerated amortization.

1,000$

	Sum of Imported Machine	Imported from U. S. A.
1949	1,245.6	——
1950	5,786.6	——
1951	57,330	36,678 (5 8 %)
1952	90,470	55,847 (61.5%)
1953	190,742	116,184 (72.5%)
1954	177,074	123,177 (69.5%)
1955	132,402	89,312 (67.4%)
1956	161,168	111,244 (69.1%)

Source ; As for the amounts in 1949 and 1950, we derived them from 'Monthly Return of The Foreign Trade of Japan, Dec. 1950,' published by the Ministry of Finance. The amounts after 1951 were derived from 'White Paper on Foreign Trade', published by the Ministry of International Trade and Industry.
% is estimated by setting Sum of Import=100.

Table VIII.   Accelerated amortization utilized in giant corporations

100 million Yen.

	Iron and Steel	Mining	Textile	Fertilizer	Pulp	Bank
Accelerated Amortization	28.2%	10.7%	7.5%	0.9%	0.1%	0.4%
Taxable Income	43.5	69.8	66.5	54.4	53.9	57.1

Note ; % is estimated by setting taxable income = 100.
Source ; 'Report by the Research Mission for Tax System,' published by the Ministry of Finance, p. 74.

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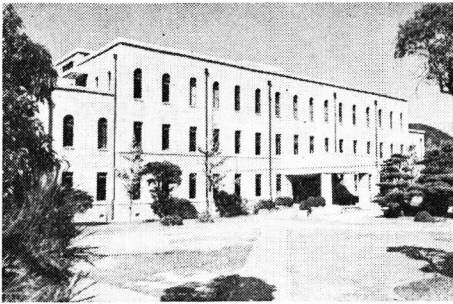
The Institute was founded in 1919 and attached to Kobe University (the Kobe Higher Commercial School at that time) with an endowment fund from F. Kanematsu & Co., Ltd., the pioneer firm in Japan-Australia trade. This fund provided the school with a building and the means to carry on research work. In 1949, the Institute became an official organization attached to Kobe University, maintained by the national treasury.

The aim of the Institute is to carry on scientific and synthetic study of Industrial economy in its two teams of research work, namely, the Research Team of International Economy and the Research Team of Business Administration. The former comprises five sections, each taking charge of research work on International Trade, Marine Economy, International Finance, International Rules and Agreements on Commerce and Regional Study on Latin-America; the latter comprises four sections, each of which undertakes to do research work on Business Administration, Accounting, International Management and Industrial Relations.

Besides these regular research sections, we have horizontal study groups closely related to the regular reasearch sections to carry on special research work by a Committee of Specialists. In the field of international economy, two committees for special study, the Committee on Asian Economy and the Committee on Latin American Economy, have been organized; and in the field of business administration the Committee on Company Accounting has been formed. The said sdecial research work is carried on by the faculty of the Institute and by extra-Institute and extra-University research workers.

The results of the research work are published in the Kobe Economic & Business Review, the Kobe University Intenational Economic Review and the Kobe University Business Review (each published annually) and in the monthly journal "Koknmin keizai Zasshi" (Journal of Economics and Business Administration), and sometimes in book from on specific themes.

The Institute has a research staff of 23 members and a secretariate of 11 clerks.