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# THE RELATION BETWEEN JAPAN PROPER AND KOREA AS SEEN FROM THE STAND- POINT OF THE RICE-SUPPLY

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## 1. PREFACE

It is rare for Japan to enjoy such a rich rice crop as it did last year owing to favourable weather conditions. As this country can hardly expect similar bumper crops every year, occasion for apprehension as regards a possible shortage of rice supplies still exists. No one can gainsay that Japan may again have seriously to consider in no distant future the question of a shortage of rice supplies. Even the rich rice harvest last year in Japan fell short of the total consumption of rice in the country. The surplus of rice for the present year is due to the plentiful importation into this country of rice from Korea and Formosa—from Korea especially, and this huge importation is attributable to the policy pursued in those countries of increasing the rice production. Korean and Formosan rice cannot, however, be imported into Japan proper in exactly the same way as foreign rice is imported under the zoll tariff. Herein lies the difficulty of the rice policy of this country. Rice producers in Japan are harassed by the increasing importation of Korean rice. Yet, so long as rice is not produced in

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Japan in sufficient quantities to meet the demand, importation of Korean rice is indispensable. This is especially so, when the rice crop in Japan falls below the average. Thus, the importation of Korean rice is imperative, though it is deemed injurious to the interests of rice producers in this country because it affects the price of rice. Indeed, the importation of Korean rice at once produces far-reaching effects on the rice problem in Japan and is vital to the solution of the food problem of the country. In the present article, I propose to examine the relation in which Japan stands to Korea in the matter of the rice supply from three angles, that is, as regards quantity, price and relative productivity.

## 2. KOREAN RICE AND JAPANESE RICE AS VIEWED FROM THE STANDPOINT OF QUANTITY

During the last fifteen years, the consumption of rice in Japan proper has been increasing at the rate of about 900,000 koku a year. Against this increase of consumption, the increase of rice production in Japan has been only 500,000 koku a year, on the average. That is to say, there is a progressive shortage of 400,000 koku every year in the supply. This shortage is adjusted by the average annual increase of imported Korean rice to the quantity of about 300,000 koku and of imported Formosan rice by about 100,000 koku. Thanks to this huge importation, the quantity of foreign rice imported has witnessed no marked increase; it has been practically stationary in recent years. From this point of view, the increased production of rice in Korea and Formosa is, if we take a long view of things, not a matter to be deprecated. It is certainly wrong to discourage this tendency.

It is, however, generally believed that the yearly importation of Korean rice to the amount of over 5,000,000 koku is depressing the price of rice in Japan by increasing the quantity of rice for supply. The extent of this depres-

sion of price depends upon (1) the season in which Korean rice is imported most abundantly and (2) whether this importation takes place irrespective of the state of the rice harvest in Japan.

In order to ascertain the first-mentioned point, I have worked out the index of seasonal variation in regard to the monthly importation of Korean rice into Japan during the period from January, 1921, to December, 1930, and compared it with that in respect of the quantity of Japanese rice brought to distribution centres from centres of production. This comparison is given in the following table:—<sup>1)</sup>

Table I.

Index of seasonal variation in regard to the quantity of Korean rice imported into Japan and that of Japanese rice conveyed from the production centres to the distribution centres.

Month	Korean rice	Japanese rice
October	57.4	112.5
November	137.9	131.6
December	210.2	159.6
January	146.3	125.0
February	116.7	84.7
March	120.0	91.8
April	110.7	89.1
May	86.5	88.9
June	77.8	82.3
July	51.6	75.5
August	42.5	72.6
September	42.4	86.4
Average	100.0	100.0

in January, 1930, for instance, contained one item urging

1) The index of seasonal variation has been worked out by W. M. Persons's link relatives method.

From the above table it may be seen that Korean rice is imported into Japan in large quantities between November, immediately following the harvest time, and March of the following year—during the three months following the harvest in particular. This phenomenon is ascribable to the fact that poor Korean farmers sell their rice soon after it is harvested, regardless of the market price ruling. This point has hitherto received much attention from those who dealt with the subject. The recommendations submitted to the Government by the Rice Commission

the Government-General of Korea to take appropriate measures quickly to regulate the monthly quantity of Korean rice exported to Japan so that there should be a certain uniformity. The Government-General of Korea has now a plan, as the initial stage of a programme to be spread over five years, to build warehouses capable of storing about 1,000,000 koku of excess rice during the season when exportation is most brisk. When these warehouses are completed, it is hoped the present situation will be somewhat improved.

To decide the second point, namely, in what year the importation of Korean rice is most abundant, we have to discover when harvests were rich and when poor in Japan and Korea in the past.<sup>2)</sup>

Table II.  
Rich or poor rice harvest in Korea and in Japan.

Year	Total yield of Korean rice (In 1,000,000 koku)	Relative deviations	State of harvest	Total yield of Japanese rice (In 1,000,000 koku)	Relative deviations	State of harvest
1915	12.84	— 1.7	mean	55.92	2.2	mean
1916	13.93	5.1	good	58.45	5.6	good
1917	13.68	1.8	mean	54.56	— 2.5	mean
1918	15.29	12.2	rich	54.70	— 3.3	mean
1919	12.70	— 8.2	bad	60.81	6.6	good
1920	14.88	6.1	good	63.20	9.8	good
1921	14.32	0.6	mean	55.18	— 4.8	bad
1922	15.01	3.9	mean	60.69	4.0	mean
1923	15.17	3.5	mean	55.44	— 5.6	bad
1924	13.21	— 11.0	poor	57.17	— 3.1	mean
1925	14.77	— 2.0	mean	59.70	0.8	mean
1926	15.30	0.1	mean	55.59	— 6.4	bad
1927	17.29	11.5	rich	62.10	4.3	good
1928	13.51	— 14.1	poor	60.30	1.2	mean
1929	13.70	— 14.2	poor	59.55	— 0.1	mean
1930	19.18	(18.2)	rich	66.88	(12.2)	rich

2) (a) In finding the relative deviations of the Korean rice output, the normal value for each year (2) was first sought from  $\log y = 1.1532638 + 0.0062202x$ , representing the logarithmic line applied to the materials of the period from 1912 to 1930 by means of the least squares mean. Taking the original number value as (1), the relative deviations of the Korean rice output were worked out by the formula:  $\frac{(1)}{(2)} - 100\%$ . The same method was

The above table shows that there was a general, though not an exact, coincidence in the condition of harvest in both countries in all years, except 1919, 1928 and 1929, during the past sixteen years. The coefficient of correlation found from the relative deviations for both for a period from 1915 to 1929 is 0.071, and no positive relationship whatever is seen to exist between them. It was a rare thing for both Japan and Korea to have a rich harvest in the same year as in 1930. Nor is it possible to conclude that when there was a rich harvest in the one country there was invariably a poor harvest in the other, and vice versa, so that they were able to supply each other's deficiencies.

Table III.

The quantity of Korean rice imported into Japan and its relative deviations

Year	Quantity of Korean rice imported into Japan (In 100,000 koku)	Relative deviations	Year	Quantity of Korean rice imported into Japan (In 100,000 koku)	Relative deviations
1916	14.31	— 1.3	1924	44.82	15.7
1917	11.90	— 28.7	1925	44.21	3.2
1918	15.79	— 17.3	1926	52.03	10.4
1919	27.66	27.1	1927	58.24	13.0
1920	16.90	— 31.5	1928	70.38	25.4
1921	28.44	2.2	1929	53.86	— 11.4
1922	32.36	3.6	1930	52.19	— 20.4
1923	34.04	— 2.4			

used in working out the relative deviations of the Japanese rice output. They were found by means of  $\log y = 1.7322750 + 0.0058099x - 0.0001956x^2$ , representing the logarithmic second degree parabola fitted to the materials of the period from 1899 to 1930.

2) (b) A rich rice crop means a harvest of more than 10 per cent. over the average; a good crop, from 4.1 to 9.9 per cent. over the average; a mean crop, an increase over or a decrease from the average within the limits of four per cent.; a bad crop, a decrease of from 4.1 to 9.9 per cent.; and a poor crop, a decrease of over 10 per cent.

In what relation, then, does the Korean rice imported into Japan stand to the bumper, or the poor, harvests of the two countries?<sup>3)</sup>

I have examined, in the light of Tables II and III, the existence of the correlation between the quantity of Korean rice imported into Japan and the state of the rice harvest in Korea, during the fifteen years from 1916 to 1930, and found that there exists a positive correlation of 0.549. That is to say, when a rich harvest is experienced in Korea, there is a tendency for the importation of Korean rice into Japan to increase. This is in the natural order of things. Next, we see that there exists a negative correlation, though slight, of -0.32 between the state of the rice harvest in Japan and the importation of Korean rice. It means that when there is a poor harvest in Japan with the consequent high price of rice, the importation of Korean rice shows a tendency to increase, though very slightly. This is, perhaps, accounted for by the fact that as, in Korea, landowners hold a much larger percentage of the quantity of rice to be put on the market than in Japan, a fact to which reference will be made later on, the importation of Korean rice into Japan naturally increases when a high price of rice rules in Japan owing to a bad crop.

Lastly, what relation exists between the quantity of Korean rice imported and the price of rice ruling in Japan?<sup>4)</sup>

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3) The quantity of Korean rice imported into Japan was taken from the *Beikoku Yoran* (Rice Manual) for 1931. It represents the annual average for a year beginning in October and ending in September. The relative deviations were worked out by  $\log y = 1.5188264 + 0.0239505x - 0.0002734x^2$ , which represents the logarithmic second degree parabola fitted to the materials of the period from 1915 to 1930.

4) The Fukagawa rice quotations represent the average price of rice for a rice year beginning in October and ending in September. The Bank of Japan's index number of prices, utilised to deflate them, is the conversion of the standard of the previous year into a geometrical average. The relative deviations were worked out by the logarithmic line fitted to the materials of the period from 1901 to 1930:  $\log y = 1.1304955 + 0.0030804x$ .

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**Table IV.**  
The relative deviations of the Fukagawa market price of rice

Year	Fukagawa market price of rice	Deflated price of above	Relative deviations
1916	¥ 13.02	¥ 9.51	— 29.6
1917	17.71	10.19	— 25.1
1918	28.29	12.45	— 9.1
1919	43.32	15.74	14.0
1920	49.73	14.31	3.0
1921	29.00	11.45	— 18.2
1922	37.52	14.74	4.6
1923	31.33	12.83	— 9.6
1924	36.99	14.40	0.8
1925	41.81	16.15	12.2
1926	38.97	16.70	15.2
1927	36.14	17.10	17.1
1928	31.74	15.14	2.9
1929	29.13	13.84	— 6.5
1930	28.34	15.95	7.0

From Tables III and IV we see that there exists a positive correlation of 0.438 between the two. This shows that when the price of rice is high in Japan, the importation of Korean rice increases, though but slightly. This phenomenon is presumably due to the fact that in a year of high rice prices, Korean rice is consumed in larger quantities as a substitute for Japanese rice.

Thus viewed, it can hardly be said that the opposite states of harvest always prevail in Japan and Korea, so that natural conditions in both countries are so favourably decreed that the demand and supply between them are spontaneously regulated. Such being the case, the necessity arises of controlling the movements of rice between the two countries either seasonally or according to the state of harvest.

### 3. KOREAN RICE AND JAPANESE RICE AS VIEWED FROM THE STANDPOINT OF PRICE

In former days, Korean rice was of poor quality, but thanks to the efforts made towards fostering its cultivation,



there has been considerable improvement of late years, so much so that in 1929, the area of land in which Korean rice of improved quality was produced exceeded 1,160,000 *cho* or 2,842,000 acres, and this constituted 73 per cent. of the total acreage of paddy fields. Owing to this amendment of quality, the margin in price between Japanese and Korean rice is being lessened every year. Table V shows the margin and its ratio between the third-grade Fusan rice and the third-grade Settsu rice in Osaka, the biggest consuming centre of Korean rice.

Table V.

The margin in price between Osaka rice price and Korean rice price

Year	Settsu Red, third-grade (1)	Fusan rice, third-grade (2)	Margin (3)	Ratio of above (3)÷(2)=(4)
1910	¥ 12.66	¥ 11.05	¥ 1.61	14.6%
1911	17.47	14.96	2.51	16.8
1912	20.57	17.06	3.51	20.6
1913	21.66	18.17	3.42	19.2
1914	15.96	12.96	3.00	23.1
1915	12.90	10.06	1.28	12.7
1916	13.91	11.72	2.19	18.7
1917	19.17	17.67	1.50	8.5
1918	28.84	27.15	1.69	6.2
1919	46.24	42.38	3.86	9.1
1920	45.29	40.52	4.77	11.8
1921	31.21	26.87	4.34	16.2
1922	36.59	31.64	4.95	15.6
1923	32.92	29.36	3.56	12.1
1924	39.73	35.35	4.38	12.4
1925	42.42	39.20	3.22	8.2
1926	39.05	35.53	3.52	9.9
1927	36.96	32.09	4.87	15.2
1928	30.80	27.83	2.97	10.7
1929	30.55	27.60	2.95	10.7
1930	26.40	24.49	1.91	7.8
1931	18.80	16.32	2.48	15.2

From the above table we see that (1) the ratio of margin between the two prices is, on the whole, being reduced every year, and that (2) this reduction was particularly marked in the years when the price of rice was high (that is, 1918, 1919, 1920 and 1925). This is due to the easy substitution of Korean rice for Japanese rice for general consumption. In this respect, Korean rice offers a singular contrast with foreign rice.

Because the transfer of consumption by substitution can easily be effected between Japanese and Korean rice, it is conceivable that the price of Korean rice which finds its way into the Japanese rice market is influenced by the price of Japanese rice so that it departs somewhat from its cost price (which here means the price which is determined by the cost of production). In order to make this relation clearer, it is necessary to examine the relation which exists between the Osaka market price of rice, the price of Korean rice in Osaka, and the prices of uncleaned and unhulled rice in Korea. The reason why I have chosen the price of unhulled rice among others is that Korean farmers' interests depend largely upon the price of unhulled rice because they (including landownere) sell rice in the unhulled state. With regard to the Japanese market price of rice, that of the Osaka rice market has been selected because of Osaka's most intimate relation with Korean rice; while as the representative prices of Korean rice, uncleaned and unhulled, those of the Fusan, the Taiku and the Mokpo markets in regard to uncleaned rice and those of the Taiku and the Mokpo markets in regard to unhulled rice have been selected. First, nine kinds of correlation between these market prices were found, as will be seen in Table VI, and then, with regard to each group of prices correlated, statistical lead and lag were inquired into by putting each price one month back, in order to discover which price led and which followed.

Table VI.

Coefficient of correlation between Osaka rice price and the prices of Korean rice, uncleaned and unhulled

Coefficient of correlation between Osaka rice price and price of uncleaned Fusan rice in Osaka.	When Osaka rice price was put one month back .....	0.5369
	Coefficient for same month .....	<b>0.8848</b>
	When price of uncleaned Fusan rice was put one month back .....	<b>0.7540</b>
Coefficient of correlation between price of uncleaned Fusan rice in Osaka and that in Fusan.	When Osaka price was put one month back .....	0.6206
	Coefficient for same month .....	<b>0.9091</b>
	When Fusan price was put one month back .....	<b>0.6950</b>
Coefficient of correlation between Osaka rice price and price of uncleaned Fusan rice in Fusan.	When Osaka price was put one month back .....	0.5221
	Coefficient for same month .....	<b>0.8690</b>
	When price of uncleaned rice in Fusan was put one month back .....	<b>0.7742</b>
Coefficient of correlation between price of uncleaned Taiku rice in Taiku and that of unhulled rice there.	When price of uncleaned Taiku rice was put one month back .....	0.3408
	Coefficient for same month .....	<b>0.5770</b>
	When price of unhulled Taiku rice was put one month back .....	<b>0.3798</b>
Coefficient of correlation between Osaka rice price and price of uncleaned Taiku rice in Taiku.	When Osaka rice price was put one month back .....	0.4493
	Coefficient for same month .....	<b>0.8776</b>
	When price of uncleaned Taiku rice was put one month back .....	<b>0.8208</b>
Coefficient of correlation between Osaka rice price and price of unhulled Taiku rice.	When Osaka rice price was put one month back .....	0.2629
	Coefficient for same month .....	<b>0.4912</b>
	When price of unhulled Taiku price was put one month back .....	<b>0.4686</b>
Coefficient of correlation between price of uncleaned Mokpo rice and that of unhulled Mokpo rice in Mokpo.	When price of uncleaned Mokpo rice was put one month back .....	0.3835
	Coefficient for same month .....	<b>0.7659</b>
	When price of unhulled Mokpo rice was put one month back .....	<b>0.7725</b>
Coefficient of correlation between price of uncleaned Mokpo rice and Osaka rice price.	When Osaka rice price was put one month back .....	0.5813
	Coefficient for same month .....	<b>0.8539</b>
	When price of uncleaned Mokpo rice was put one month back .....	<b>0.7028</b>
Coefficient of correlation between price of unhulled Mokpo rice and Osaka rice price.	When Osaka rice price was put one month back .....	0.2685
	Coefficient for same month .....	<b>0.6411</b>
	When price of unhulled Mokpo rice was put one month back .....	<b>0.7502</b>

The period under review covers (a) 120 months from January, 1921, to December, 1930, in regard to the Osaka rice and uncleaned Fusan rice prices, while in regard to the prices of uncleaned and unhulled rice in the Taiku and the Mokpo markets, it covers (b) 108 months from January, 1921, to December, 1929, because the figures for 1930 are not available at time of writing. The prices of the Osaka rice market with which these have been correlated cover, of course, the same period.

Then, taking the average price for each month as the original number, I have found the moving average for twelve months. Concerning the relative deviations of the original number based on this moving average value, I have worked out the coefficient of correlation existing between the different groups of prices.<sup>5)</sup>

From the 27 kinds of correlation mentioned in the table, the following conclusions can be drawn. (1) A very close positive correlation exists between the Osaka market price of rice and the price of uncleaned Korean rice. The highest coefficient of 0.8843 is shown when Osaka rice is correlated with uncleaned Fusan rice in Osaka, and the lowest coefficient of 0.8539 is shown when Osaka rice is correlated with uncleaned Korean rice at Mokpo. In so far as the relation between these two is concerned, the coefficient of correlation for the same month is always highest. That the coefficient is highest for the same month does not, however, mean that there exists no relation of sequence. It would rather seem that in these days of improved means of transportation and communication, the process of leading and following is gone through in a term far shorter than a

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5) Coefficients of correlation were worked out by the method which is found F. Mills, *Statistical Methods* p. 388. In finding the moving average for twelve months, the moving average for the months from January to December was first put between June and July and then the moving average for the period from February to January of the following year was put between July and August. The average of the value of these two moving averages was taken as the moving average value for July.

month. In order to prove this, it is necessary to compare daily quotations, but as it is difficult to obtain the requisite materials in regard to the uncleaned rice quotations at various places in Korea, I contented myself, in the present article, with the method of examining the relation of sequence by discovering in which case the coefficient of correlation between the two is greater, through putting the Osaka rice quotations and uncleaned Korean rice quotations one month back alternately. By this method I have found that the coefficient of correlation is always greater when Korean rice quotations were put one month back than when Osaka rice quotations were treated in the same way. From this it is clear that Osaka rice quotations lead and Korean rice quotations follow. (2) No such close relation as we see between Osaka rice quotations and uncleaned Korean rice quotations is noticeable between uncleaned Korean rice and unhulled Korean rice quotations. At Taiku, the coefficient of correlation between them is only 0.5770, while at Mokpo it is a little higher at 0.7659. With regard to the relation of sequence between uncleaned and unhulled rice quotations, it is obvious that the lead is taken by uncleaned rice quotations, as at Mokpo the coefficient of correlation is clearly greater when unhulled rice quotations are put one month back than the figures for the same month. At Taiku, the coefficient of correlation is greatest for the same month, but as the coefficient is much greater when unhulled rice quotations are put one month back than when uncleaned rice quotations are put one month back, there is no doubt that the uncleaned rice quotations lead the way. (3) The relation between Osaka rice quotations and unhulled Korean rice quotations is even less close than the relation between the quotations of uncleaned Korean rice and of unhulled Korean rice. Here again, it is clear that the Osaka rice quotations lead the way.

From the above-mentioned relations it has become clear that the uncleaned Korean rice quotations follow the lead of the Osaka rice quotations, and that the unhulled rice

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quotations follow that of the uncleaned rice quotations. If the Osaka rice quotations be likened to the sun, the uncleaned rice quotations are the earth, while the unhulled rice quotations are the moon. The unhulled rice quotations, which are attracted by the uncleaned rice quotations, are also attracted by the Osaka rice quotations. If, on the contrary, the price of Korean rice is regulated by the cost price, the quotations for the unhulled rice sold by Korean farmers ought to have the capacity to lead. That this is not so is due to the fact that Japanese rice constituting a large proportion of the rice supply in Japan proper, the price of Korean rice imported into Japan, and consequently the price of rice in the rice-distributing centres of Korea, are presumably influenced by the price of rice in Japan, with the result that they vary somewhat from the cost price in Korea.<sup>6)</sup> This phenomenon bears some resemblance to that which we witness in the relations existing between the respective prices of mulberry leaves, of cocoons, and of silk. The price of mulberry leaves is regulated, not by their cost of production, but by the price of cocoons, while the price of cocoons is determined by the price of silk.

Although, as already mentioned, the improvement in the quality of Korean rice has considerably reduced the margin between its price and that of Japanese rice, Korean rice is still, on the average, somewhat lower in price. It is, therefore, more profitable for Korean farmers to sell their rice at the price of uncleaned rice, which closely follows the lead of the price of Japanese uncleaned rice, than to sell it at the price of unhulled rice, which is far less influenced by the price of Japanese rice. As a matter of fact, however, Korean farmers sell their rice unhulled, a fact which proves very disadvantageous to them. Moreover, the sale of unhulled rice by farmers necessitates the existence

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6) If Korean rice price varies from its cost price in Korea, it is another question altogether whether it redounds to the advantage of Korean farmers who are the real producers of rice.

of the hulling industry in Korea, which is apt to disturb the relation of price between unhulled and uncleaned rice, as can be proved by the fact that the relation between the price of uncleaned rice and that of unhulled rice is less intimate than that existing between Osaka rice price and uncleaned rice price.

The disadvantages accruing to Korean farmers from the sale of unhulled rice can be seen more clearly by comparing the indices of the seasonal variations of uncleaned and unhulled rice quotations in Korea. In order to prove this, I have found, by the moving average method<sup>7)</sup> for twelve months, the indices of the seasonal variations of uncleaned and unhulled rice quotations at Taiku and Mokpo respectively for a period of 96 months from July, 1921, to June, 1930.

Table VII.  
Indices of seasonal variations of uncleaned and unhulled  
Korean rice quotations

Month	Uncleaned Taiku rice	Unhulled Taiku rice	Uncleaned Mokpo rice	Unhulled Mokpo rice
January	95.8	95.0	96.7	96.8
February	98.2	97.2	96.4	95.4
March	95.8	99.0	97.2	102.7
April	99.3	100.2	97.9	102.2
May	97.5	100.4	97.5	103.0
June	106.2	106.2	103.6	108.2
July	107.1	113.3	105.9	107.0
August	104.2	104.5	103.8	101.5
September	104.4	101.4	102.4	99.4
October	98.4	96.3	103.5	99.4
November	98.1	95.8	98.0	93.2
December	95.0	90.7	97.1	91.2
Average	100.0	100.0	100.0	100.0

7) By this method the moving average of the real quantity for twelve months is first sought, and then the ratio of the real quantity of each month to the moving average value is found. From this ratio the median for each month is sought. Conversion is next made so that the total of one year may become 1200.

The above table shows that whereas uncleaned rice quotations are low in a period from November, immediately after the harvest time, to about April, unhulled rice quotations are even lower in November and December and show a tendency to rise by degrees after March. There are no statistics available to find the month by which Korean farmers have usually disposed of their rice. But seeing that in Japan proper, farmers (other than landowners) put about 44 per cent. of the commodity rice on the market during the three months from November inclusive, it is conceivable that the percentage is larger in the case of the Korean farmer who is generally poor. It is probable that practically the whole stock of rice is disposed of by the New Year of the old calendar. For small farmers consume very little of the unhulled rice of their own harvesting for their own families. They either sell it for cash or barter it for Manchurian millet or foreign rice.

Table VIII.

The quantity of rice and millet consumed per head in Korea

Year.	Quantity of rice consumed per head	Index number in which the quantity consumed in 1912 is taken as 100	Quantity of millet consumed per head	Index number in which the quantity consumed in 1912 is taken as 100
	koku		koku	
1912	0.689	100	0.234	100
1914	0.675	98	0.294	126
1916	0.655	95	0.269	115
1918	0.672	98	0.324	139
1920	0.625	91	0.273	117
1922	0.623	90	0.385	165
1924	0.592	86	0.378	162
1926	0.518	75	0.373	159
1928	0.525	76	0.373	159
1929	0.428	62	0.363	155

If Koreans consumed rice at the same rate as the Japanese do, there would be no over-production of rice in



Korea. In fact, there would rather be under-production.<sup>8)</sup> Koreans sell the rice they produce and buy millet, which is lower in price, for their own consumption. In this respect, they are highly economic men. On the other hand, they show themselves very uneconomic in regard to their sale of the unhulled rice of their production. Who are then profiting by the exploitation of the seasonal variations of the unhulled rice quotations?

#### 4. KOREAN RICE AND JAPANESE RICE AS VIEWED FROM THE STANDPOINT OF RELATIVE PRODUCTIVITY

I have, in previous chapters, dealt with the relation between Korean and Japanese rice, as seen from the points of view both of quantity and of price, and now I must proceed to discuss the relations of agricultural productions in Korea. It is believed that Japanese rice producers generally have in recent years felt keenly the disadvantage which they suffer from the depreciative influence exerted by Korean rice with low cost of production on the price of rice ruling in Japan. What disparity is there, then, between the cost of producing rice respectively in Japan and in Korea?

A wide disparity such as is shown in the above tables has existed and still exists between the costs of production in the two countries. The price of Japanese rice is not, however, affected by that of Korean rice to the full extent of this disparity. For, the cost of transportation to Japan must be taken into due consideration. Nor can it be left out of account that the price of the Korean rice imported into Japan being influenced by the price of Japanese rice,

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8) The total population of Korea was 19,331,061 at the end of 1929. If rice were consumed at the rate of 1.1 koku per head in Korea as in Japan proper, the total consumption would be 21,264,167 koku. There would have been a shortage of 2,081,032 koku in rice supply at this rate of consumption in Korea in 1930 when there was a very rich rice crop of 19,183,135 koku.

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Table IX.

The cost of producing rice by peasant proprietors in Korea and in Japan  
(The figures are those of 1926)

Items of cost	Japan	Korea
Seeds	¥ 0.78	¥ 0.90
Fertiliser	15.92	6.63
Various materials	1.47	—
Labour	29.30	11.67
Animal labour	2.87	—
Agricultural implements	2.48	} 2.00
Farming barns	1.94	
Public imposts	10.48	1.62
Interest on land capital	28.11	13.27
Rent	(4% per annum)	(8% per annum)
Total	93.35	37.03
Yield	2,553 koku (uncleaned rice)	3.00 koku (unhulled rice)

Table X.

The cost of producing one koku of unhulled rice  
(The figures are those of 1926)

Province	For peasant proprietors	For tenant farmers
Keiki	—	—
North Chusei	¥ 9.57	¥ 10.12
South Chusei	13.04	15.36
North Zenza	10.88	10.19
South Zenza	11.22	10.89
North Keisho	13.19	12.93
South Keisho	11.95	14.27
Kokai	10.94	11.93
South Heian	13.53	14.82
North Heian	9.92	10.21
Kogen	9.18	11.00
North Kankyo	12.82	13.21
South Kankyo	7.11	6.60
Average	11.11	11.79

Cost of producing one koku of uncleaned rice in Japan:

About ¥ 40 (average for the period from 1922 to 1924)

About ¥ 34 (for 1926)

Cost of producing one koku of uncleaned rice in Korea:

¥ 26 to ¥ 29 (for 1923)

¥ 24 to ¥ 26 (for 1926)

varies somewhat from the cost price in Korea. But it seems likely that as in these days Korean rice is treated as the same commodity as Japanese rice, the price of Japanese rice is determined by the cost of producing Korean rice, which is lower than in the case of Japanese rice, through the operation of the minimum producing cost principle, when there is an over-supply of rice. This consideration presents an interesting question, if only from the point of view of the price theory, but no complete inquiries into the cost of production have so far been carried out to enable us to make this point clear by figures. It is conceivable that while the price of Japanese rice falls somewhat below the cost price in Japan owing to the imported Korean rice, the price of the Korean rice imported into this country varies from the cost price in Korea to a certain extent. Whether the price of Japanese rice approaches the cost of producing Korean rice or whether the price of Korean rice approaches the cost of producing Japanese rice may depend on the over-supply or the under-supply of rice in Japan. The advantages of rice production in Korea lie in low value of land, low wages and low public imposts. These will continue to operate for a long time to come as chief factors for depressing the price of Japanese rice.

Let me, now, proceed to examine how agriculture is operated in Korea. Table XI shows the whole arable land in Korea as classified into peasant proprietors' land and rented land.

Table XI.

Percentage of peasant proprietors' land and rented land

Year	Land in Korea Peasant proprietors' land		Rented land	
	(paddy-field)	(farm)	(paddy-field)	(farm)
1916	34.42	53.96	65.58	46.04
1924	35.27	57.52	64.73	42.48
1925	35.06	57.51	64.94	42.49

1926	34.92	57.30	65.08	42.70
1927	37.35	53.32	62.65	46.68
1928	34.43	52.40	65.57	47.60
Average for the five years from 1924 to 1928	35.40	55.60	64.60	44.40

According to the above table, 44.4 per cent. of farm (*hata*) and 64.6 per cent. of paddy fields in Korea constituted the average percentage of tenant land for the last five years. Assuming that Korean rice is grown in paddy fields exclusively, that the rice harvested is divided in equal proportions between landowners and tenant farmers and that productivity is the same for peasant proprietors land and for tenant land, the distribution of rice for all these classes averaged as follows for 1924—1928 inclusive:—

Table XII.

Total yield	Peasant proprietors	Tenant farmers	Landowners' share
15,153,332 koku	5,364,280 koku	9,789,052 koku	4,894,526 koku

Of the total rice yield, rice to be marketed may be assumed to form the following percentage:—

Table XIII.

The quantity of rice to be marketed  
(Average for five years, 1924—1928)

Farming population	{ Japanese Korean	41,256 14,696,653
Quantity of rice consumed by farmers	{ Japanese Korean	49,507 koku 7,803,922 koku
Quantity of rice marketed		7,299,903 koku
Total rice yield		15,153,332 koku
Percentage of rice marketed to total rice yield		48.2 %

According to the above figures, 43 per cent. of the total production of rice is marketed. The percentage is fairly equal to that in respect of Japanese rice. What portion of the quantity to be marketed, then, belongs to landowners?

Table XIV.  
Distribution of production of rice and the amount sold  
(Average for five years, 1924—1928)

District	Kinds	Distribution of rice		Amount sold		Percentage of amount sold to amount distributed
		Actual quantity	Percentage	Actual quantity	Percentage	
Korea	Rice made over as rent	4,894,526	32.3%	4,226,770	57.9%	86.4%
	Other rice	10,258,806	67.7	3,073,133	42.1	30.0
	Total (total yield)	15,153,332	100.0	7,299,903	100.0	48.2
Japan	Rice made over as rent	15,207,000	25.4	12,409,000	37.9	81.6
	Other rice	44,597,000	74.6	20,304,000	62.1	45.5
	Total (total yield)	59,804,000	100.0	32,713,000	100.0	54.7

From the above table it will be seen that of the total rice yield of 15,153,000 koku, the share of landowners constitutes 32 per cent., while their share in the total rice marketed, viz. 7,300,000 koku, is 57 per cent. As compared with landowners in Japan, the share of the landowners in Korea is extremely large. What percentage of the total farming families in Korea do the landowners' families in that country form, then?

Table XV.  
Percentage of farming families in Japan and in Korea

Year	Landowners		Peasant proprietors		Semi-peasant proprietors		Tenant farmers		Other farmers (Die Brandwirtschaften)
	Japan	Korea	Japan	Korea	Japan	Korea	Japan	Korea	
1916	14.5	2.5	26.6	20.1	35.0	40.6	23.9	36.8	—
1920	14.5	3.3	26.2	19.5	35.0	37.4	24.3	39.8	—
1925	14.7	3.8	26.5	19.9	35.3	33.2	23.5	43.1	—
1927	14.5	3.8	26.7	18.7	35.8	32.7	23.0	43.8	1.0
1928	—	3.7	—	18.3	—	32.0	—	44.9	1.1

The above table shows that the households of landowners represent less than four per cent. of the total farming families, a fact which testifies to the great inequality in the distribution of gains among the farmers. The inequality is more pronounced in Korea than in Japan. Moreover, in Korea there is a yearly increase in the number of landowners, while the number of peasant proprietors and semi-peasant proprietors is decreasing every year. As regards tenant farmers, their number is increasing considerably year after year.

The state of the distribution of landownership I have already shown in Table XI. So far as paddy fields are concerned, 65 per cent. of the total acreage of arable land is tenant land, and everybody will be surprised to learn that the families of landowners to whom this tenant land belongs constitute only 3.74 per cent. of the total number of farming families. This circumstance is particularly marked in the southern part of the peninsula, which is looked upon as the treasurehouse of Korean agriculture, as the following figures indicate:—

Southern part of Korea	
(Provinces of Chusei, Zenra and Keisho)	
Paddy field of peasant proprietors .....	33.72%
Paddy fields cultivated by tenant farmers .....	66.28%
Farming families:	
Landowners.....	2.32%
Peasant proprietors .....	14.05%
Semi-peasant proprietors.....	33.58%
Tenant farmers .....	49.90%
Other farmers.....	0.15%

It will be seen from the above that the landowners, whose households represent only 2.32 per cent. of the total farming households, own 66.3 per cent. of the whole area of paddy fields. And yet, "Most of the bigger landowners live in Seoul or other towns in the provinces, leaving the supervision over their land to their land agents..... Consequently, not only do they feel little attachment to their

land, but they have little kindly consideration for their tenant farmers."<sup>9)</sup> There is a growing tendency for landowners to acquire more land and for peasant proprietors to be relegated to the position of tenant farmers. The tenant farmers, whose number is making an yearly increase in this way, are by no means assured of a hopeful future in respect of their family finance. Even for tenant farmers, there is the minimum standard of their economic existence in their agricultural management and in case agricultural economy cannot make both ends meet below that limit, or, in other words, agricultural economy either suffers losses below it or becomes impossible, to what class will they revert?<sup>10)</sup> Some scholars may attempt to emphasise the tenacity of the small Korean farmers, on the basis of Tschajanow's peculiar psychological considerations.<sup>11)</sup> Let them put forward whatever arguments they please, but nobody can assert that they are right.

Table XVI.

Incomes and outlays of tenant farmers per household

	Big	Medium-sized	Small	Indigent
Incomes	¥ 824	¥ 591	¥ 333	¥ 215
Outlays	808	596	353	227
Surplus	16	— 5	— 20	— 12

I will next proceed to examine the investments of Japanese capital in Korea in the light of landownership. Sufficient materials are here lacking, but a general idea

9) The Government of Korea, *Agricultural situation in Korea* (in Japanese), p. 30.

10) About 150,000 farmers change their occupation in a year. Of the total, 69,000 are said to become labourers or other employees. (From the *Chosen Kosaku Kanshu*, or the "Korean Farm Tenancy Usage" p. 38.)

11) Vgl. A. Tschajanow, *Die Lehre von der bäuerlichen Wirtschaft, Versuch einer Theorie der Familienwirtschaft im Landbau*, Berlin 1923, s. 35.

may be formed by the number of land-tax payers and the areas of land owned by them as given in the following table:—

Table XVII.

Land-tax payers and the areas owned by them

Year	Over 100 cho		Over 50 cho & less than 100 cho		Over 20 cho & less than 50 cho	
	Japanese	Korean	Japanese	Korean	Japanese	Korean
1921	490	426	519	1,650	1,420	14,438
1924	521	356	614	1,507	1,976	13,601
1928	553	335	683	1,617	2,335	15,346
	Over 5 cho & less than 20 cho		Over one cho & less than 5 cho		Total	
	Japanese	Korean	Japanese	Korean	Japanese	Korean
1921	4,099	140,974	11,551	968,116	18,079	1,125,604
1924	5,859	146,538	15,847	1,000,962	24,817	1,162,964
1928	6,857	150,187	18,767	1,024,771	29,195	1,192,256

Note. One cho is equivalent to 2.45 acres.

The above table shows that, in regard to the owners of arable land of over 100 cho, Japanese far exceed Koreans in number and, moreover, their number is yearly increasing, while the number of Korean owners of such wide areas is gradually decreasing. As regards the owners of over 50 cho also, the rate of increase of Japanese owners is much higher than that of Korean owners. This is a clear evidence of the influx of Japanese capital. Among the Japanese owners of arable land, there is a marked tendency for landownership to pass into the hands of a few.

The principal Japanese owners of paddy fields are given in the following table:—<sup>12)</sup>

12) The areas of land owned by these eleven owners aggregate 69,000 cho, or 48% of the total areas owned by Japanese.



Table XVIII.

Japanese owners of paddy fields in Korea  
(In July, 1929)

Owners	Areas owned
Toyo Takushoku Kaisha (Oriental Colonisation Co.)	37,892 cho
Fuji Kogyo Kaisha	4,340
Fuji Nogyo Kaisha	4,127
Senman Kaitaku Kaisha	3,881
Chosen Kogyo Kaisha	3,744
Chosen Jitsugyo Kaisha	3,215
Higashiyama Noji Kaisha	2,931
Kumamoto Nojo (plantation)	2,750
Taki Nojo	2,455
Kato Nojo	2,289
Ukon Shoji Kaisha	2,013
Total	69,637

Note. This table has been prepared from facts mentioned on page 167 and subsequent pages of the book, "Chosen no Nogyo" (Agriculture in Korea).

Needless to say, large funds in the possession of Japanese are a most decisive factor in bringing about the tendency for the areas owned by Japanese to increase. How is it, then, that much Japanese capital is invested in land in Korea? The reason may be found in the profits accruing from arable land in that country.

Let me first examine the farm-rent in Korea, which forms the basis of calculating such profits.

The farm-rent in regard to the unhulled rice produced by paddy fields ranges from 47.7 to 49.9 per cent. on the average. Besides, tenant farmers have to bear rates of various kinds imposed on the land they rent. For instance, they are called upon to bear either the whole or part of land levies, charges on irrigation water and water-utilisation association rate, the whole or part of the cost of seeds, fertiliser and land improvement works, the remuneration for land agents, the inspection fee, the cost of entertaining

landowners and their land agents and their farm officials, etc. etc. Indeed, the burdens of various kinds under which they are groaning are surprisingly heavy. "The attitude of the large majority of landowners and their agents towards their tenant farmers is simply arrogant. They are bent on exactions. In any case, it is easy to imagine the great hardships which tenant farmers suffer from heavy burdens."<sup>13)</sup> Moreover, "the percentage of the areas of arable land is very low as against the number of farming families. In South Korea where there are many people desirous of doing farm work, there is a tendency for farm-rent to become higher every time the tenancy contract is renewed."<sup>14)</sup> In such adverse circumstances, tenant farmers in Korea have to pay a land-rent of 50 per cent of the rice produced. If they try to reduce this high percentage in land-rent through the improvement of the intensive organic art of producing rice, their efforts are frustrated by a steady rise, on the other hand, of the percentage of land-rent at each renewal of the tenancy contract, say, from 50 per cent. to 53 and then to 55 per cent. Thus, "it is undeniable that tenant farmers get very paltry incomes after working in their fields all the year round, though, on account of their natural indolence and traditional habit of recklessness, their industry may not be very great at the best of times."<sup>15)</sup> The smallness of their income, coupled with the low value of land, tend to make the landowners' profits accruing from paddy fields great.

In the circumstances as given above, it is no wonder that investors in agriculture should turn their attention to Korean agriculture, instead of to Japanese agriculture which brings in little profit and holds out no promise for the future. Korean landowners, however, put all their arable land under tenancy, and the rice-growing business in Korea

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13) The Government of Korea, *The Korean Farm Tenancy Usage* (in Japanese) p. 230.

14) *ibid.* p. 214.

15) *ibid.* p. 220.

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RELATION OF RICE-SUPPLY BETWEEN JAPAN PROPER AND KOREA 111

The yield of profit from land-rent  
in Japan

Good fields	5.36 %
Ordinary fields	5.72 %
Inferior fields	6.42 %

The yield of profit from the rent  
of paddy fields in Korea

South Korea	8.1 %
Central Korea	8.8 %
West Korea	8.0 %
North Korea	9.5 %
Average	8.4 %

is operated in a more careless manner than in Japan. No large-scale scientific method of operation exists there. Thus, the gradual annexation of land by big landowners tends to put more marketable rice in their hands. The improvement of the quality of Korean rice of late years has contributed to greater uniformity in quality, and large quantities of Korean rice of uniform quality are put on the rice markets in Japan by these big landowners. On the other hand, the quality of Japanese rice still varies according to prefectures; there is no nation-wide uniformity. Moreover, the marketable rice in the possession of landowners and tenant farmers is more widely distributed in Japan than in Korea. The result is the pressure of Korean rice on Japanese rice.

## 5. CONCLUSION

In the preceding chapters I have dealt with the relation between Japan and Korea as regards rice supply, approaching the matter from the various viewpoints of the quantity, price and relative productivity of rice, and made clear the true cause of the pressure which Korean rice exercises on Japanese rice. So long as the population of Japan increases at the present rate, the necessity of importing Korean rice into Japan will not diminish. It may even be found necessary to increase the production of Korean rice. From this point of view, no objection can reasonably be raised to the programme of encouraging rice production in Korea. It was originally intended as a colonial policy based on human love. It is because the interests of farmers or

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actual rice producers have often been sacrificed in the whole processes of production, trade and distribution that the policy has sometimes disappointed public expectation. It would be far from effectual to try to improve the lot of Korean tenant farmers through the execution of the scheme to convert tenant farmers into peasant proprietors, such as is in operation in Japan. The imperative need of the moment is rather to promulgate a sound farm tenancy law. By stabilising the livelihood of tenant farmers and enabling them to follow the plough with an easy mind, through the reform of the terms of farm tenancy, a valuable contribution could be made towards the increase of rice production and the intensification of Korean agriculture. The increased establishment of agricultural warehouses, the equalisation of the quantity of Korean rice imported monthly, the control of the importation of Korean rice, monopoly of rice and other measures will surely claim earnest attention in future. No matter what policy may be adopted, it is important that it should aim at the promotion of the true interests of the Korean farmer.

YOSHINOSUKE YAGI.

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