THE RATIO QUESTION

H. SINHA AND J. C. SINHA.

The ratio question is undoubtedly one of the most controversial topics in Indian Economics. The consequences of a high and a low exchange rate have been considered by various writers from different points of view as affecting different classes in India. In the present paper, an attempt will be made to discuss a method for determining the correct exchange rate, and in particular to examine whether the Hilton Young Commission recommended in 1926 the proper rate for India.

INTERNAL AND EXTERNAL VALUES.

In the first place, we have to consider separately the internal value and the external value of the rupee and then find out their mutual relation so as to estimate the correct exchange rate. The expressions 'internal value' and 'external value' are used in different senses in different contexts by different writers. It is therefore necessary to state clearly their meanings for our present purposes. It stands to reason that for finding out the proper exchange rate between sterling and the rupee, we have to consider the price levels of goods and services in the sterling area which are exchanged with goods and services in the area where the rupee is the current money. In other words, we have to find out what Keynes has called the 'International Standard'[1] both for sterling and the rupee, the relative ratio between which gives 'the purchasing power parity'. Keynes has shown that in this view of the matter, the purchasing power parity becomes a mere truism. A deeper analysis is therefore necessary.

BASIS OF PARITY: CONSUMPTION STANDARD OR WHOLESALE STANDARD?

Keynes favours the Consumption Standard as the appropriate price level. He chose the cost of living index number for determining the purchasing power parity as early as 1923 when he wrote his *Tract on Monetary Report*, apparently because it formed a closer approximation to the Consumption Standard than the wholesale prices index number. On the other hand, Hawtrey even now is of opinion that the wholesale index number is not so unsuitable as Keynes thinks and has given a number of weighty reasons in support of his view. We are however inclined to agree more with Keynes than with Hawtrey.

ECONOMIC ADJUSTMENT, THE CRUX OF THE PROBLEM.

This controversy has unfortunately clouded one important issue. For whatever be the appropriate index number for calculating the parity, sufficient time must be given for the particular price level to have its effect on the exchange rate, and, in its turn, to be acted upon by the exchange rate. In other words, if the purchasing power parity is to have any significance we must not consider any transient price level, but what we may call for want of a better name an equilibrium price level,—a price level in adjustment with the level of costs, so far as internal conditions are concerned, and a price level at which foreign lending is in adjustment with foreign balance and calling for no abnormal gold movement, so far as external conditions are concerned. If the above analysis is

[1] Keynes: *Treatise on Money*, Vol. I, Book II.

correct, our first endeavour should be to find out the most stable periods in our recent economic history, in order to get the normal price and exchange relationship, with reference to which alone can any valid judgment be formed regarding the rate recommended by the Hilton Young Commission.

WHAT IS THE INDIAN INTERNAL PRICE LEVEL?

It has been stated above that internal equilibrium means a parity between the cost of production and price level. The particular price level which we have to take into account, is what is obtained by producers. In other words, the appropriate price level is measured by the index number of wholesale prices, for which we have a fairly satisfactory series, *viz.*, Calcutta wholesale index number. It is not of course implied that this index number is free from defects as regards the selection of the base year, the items of commodities included and so on. For example, July 1914, which is still the base year of all the recent wholesale index numbers in India including the Calcutta Index, appears to be out of date. A more satisfactory post-war base period should therefore be selected. It has also not been ascertained whether the relative importance of different articles included in Calcutta and other wholesale index numbers, has not changed in recent years as compared with the state of things in 1914. This is necessary, for in the case of countries like the United Kingdom where a census of production is frequently held, there are found large and substantial changes in net outputs, which define the relative weights. It is true that we have as yet no census of production to guide us in this matter, but in any case it appears that the number of articles quoted in Indian index numbers is rather too few.

It may however be pointed out that of all the wholesale index numbers so far published in India, Calcutta wholesale index number is the least unsatisfactory. With its 72 price relatives calculated for 45 different commodities, it is more representative than Bombay wholesale index which consists of 44 price relatives and refers to 30 different commodities. Karachi wholesale index number with 28 price relatives and comprising only 20 different commodities, is far less representative. Sir Purshottamdas Thakurdas in his Minute of Dissent to the Hilton Young Commission prefers Bombay wholesale index on the ground of "the predominance of jute and tea in the Calcutta index number". To this it may be said that the Bombay index is also heavily weighted with cotton and cotton manufactures. Our reason for using the Calcutta index rather than the Bombay index is based on the fact that jute, jute manufactures and tea figure more prominently in the export trade of India than cotton and cotton manufactures. Sir P. Thakurdas also mentions marked fluctuations in jute prices during 1925-26. This is by no means an unmixed evil. The price of a packing material like jute, even though fluctuating, has a far greater claim for inclusion in an index number of the international type,[2] apart from its importance in the national economy of India. The method of weighting followed is obscure in all the three cases. But the price quotations for the Calcutta index seem to be derived from a wider and more representative market than the others. Apart from these, both in the case of Bombay and Karachi index numbers, when the price quotation of a commodity is not available, the last available quotation is repeated, without any correction whatsoever. For example, in Bombay wholesale index number for September, 1936, quotations for April, 1935, October, 1935 and April, 1936 have been repeated in the case of some articles. But it is desirable that such quotations should be corrected

[2] It is true that for estimating the disparity between prices and costs in the country, we should have an index number which gives due weight to goods and services of internal importance. From this point of view also there is not much to choose between Calcutta and Bombay indices.

by allowing for them the same change in purchasing power which is found in the case of other articles forming the same group of commodities In case there is only a single quotation for a particular commodity, the latest available quotation should be corrected by adding to or subtracting from it, the same percentage change which is noticed in the case of all other commodities forming the index number. Such corrections are made in compiling Calcutta wholesale index number. For all these reasons, this index number alone has been used here for showing the general movement of wholesale prices in India. The Department of Statistics index number with its base year of 1873 is sadly out of date for serving any useful purpose.

The Cost Level in India.

As regards costs, satisfactory data are not available even in western countries. In India such data are conspicuous by their absence. Taking profits as the excess of selling price over costs, the main elements of costs are (*a*) the cost of the raw material, (*b*) wages, (*c*) salaries, (*d*) cost of depreciation of plant, and (*e*) interest charges. An estimate based on the census of production of the United Kingdom (1930) shows that in conditions of economic equilibrium, about 50 per cent. of the cost of productin in Great Britain is due to the cost of raw materials. A corresponding figure for India cannot be estimated in the absence of a regular census of production. It is clear however that the ratio of the cost of raw materials to other costs varies widely in different types of industry. It is equally clear that the cost of raw materials does not move *pari passu* with the price of manufactures. In the case of wages also, the proportion they bear to the total cost of production differs from industry to industry even in the same country. Thus in coal mining, wages form a larger proportion of the total cost than in railway transport, where capital cost is proportionately larger. Not only this, on account of changes in organisation such as the extent of capitalisation, etc., even for the same industry the proportion of wages to total cost varies from time to time. This difficulty is enhanced when we remember that wages are not sufficiently flexible even in the countries with strong trade unions. There is no guarantee therefore that wages move in the same proportion either as the cost of production or as the price of finished goods.

Thus we are unable to neglect the effect of wages, which form one of the important elements of costs. Unfortunately, statistics of wages in India are meagre and very unsatisfactory. The report on "Prices and Wages in India" was discontinued from 1923 on the recommendation of the Inchcape Committee partly for reasons of economy and partly because the data were mostly incomplete and inaccurate. We have therefore to fall back upon the provincial factory administration reports, tariff board reports, and agricultural wage census reports. These cannot give us a full and accurate account of wages in India. Even for a province like Bengal administered by a regular staff of factory inspectors, statistics of wages are very unsatisfactory, to say the least. The following extracts from the *Annual Report of the Working of the Indian Factories Act in Bengal and Assam* for the year 1926 will reveal the situation :—

> "These figures can serve no useful purpose other than a comparison of wages earned by different classes of labourers and an indication of their level . . . The figures . . . . not being based on substantial and exhaustive information are of little value for comparison with previous years' figures. Moreover, no attempt has been made to value the free housing, medical attention and other amenities provided . . ." (p 4).

The situation has not improved since then. Even now we find the same wide disparity between the maximum and minimum wages of operatives not properly graded up, *e.g.*, Rs. 6 to Rs. 17-8a. in the case of carpenters employed in non-textile factories. The other elements of cost of production are equally elusive. It is therefore not possible

to judge directly how far the cost of production has moved *pari passu* with prices during the period of our study. At the Ottawa Conference 1932, Sir Henry Strakosch stated that "the cost of living index is a good index of the general cost of production in a country". His reasons were made clear in a subsequent memorandum on the "Road to Recovery", published in the *Economist*. In the first place, he showed that the proportion of flexible to rigid items was the same both in the cost of living index and in the cost of production. In the second place, he found out that the two had the same trend. He concluded therefore that although one was not a measure of the other, one could be utilised to show the general movement of the other with reasonable accuracy. Sir Henry Strakosch does not refer specifically to the case of India. Nor in the absence of a regular census of production has it been possible to calculate the cost of production for India, and study to what extent its fluctuations were similar to those of the cost of living index.

CALCUTTA WHOLESALE AND BOMBAY COST OF LIVING INDICES.

Bearing in mind this limitation, the movements of the Calcutta wholesale index number and of the Bombay cost of living index number are shown in Tables 1 and 2 and also in Chart 1 for the period 1919-20—1935-36. These broadly indicate the relation between costs and prices in India.

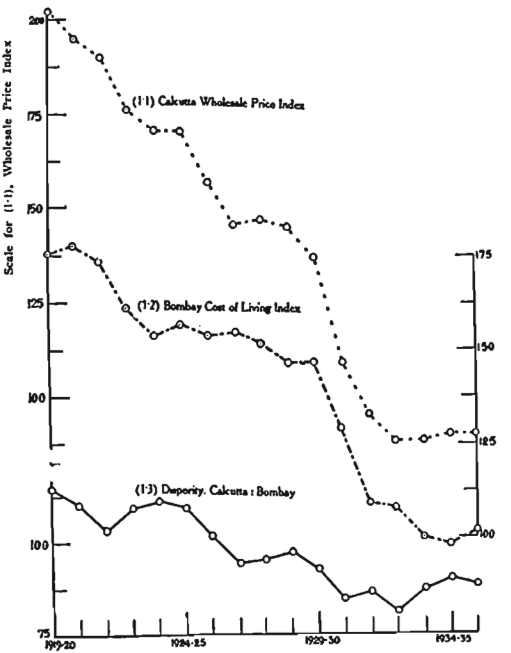
TABLE 1. INDEX NUMBERS OF WHOLESALE PRICES IN CALCUTTA.
PRICES IN JULY, 1914=100. DATA FROM THE *Indian Trade Journal*.

Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual.
1919-20	188	195	197	212	203	198	208	207	212	216	207	197	202
20-21	198	207	204	207	206	206	204	192	178	177	172	173	193
21-22	181	181	176	181	182	185	182	177	178	175	177	181	180
22-23	180	183	179	176	172	171	172	174	172	175	176	177	176
23-24	173	172	170	165	167	169	169	172	174	169	172	174	171
24-25	169	171	171	174	175	174	176	175	171	165	161	162	171
25-26	167	150	153	156	154	154	157	162	158	159	154	151	157
26-27	119	146	147	148	145	146	144	147	146	143	148	146	146
27-28	145	146	148	149	151	149	147	148	148	143	144	144	147
28-29	146	145	144	146	143	142	143	146	145	145	144	143	145
29-30	149	139	134	142	118	148	140	137	134	131	126	125	137
30-31	123	121	116	115	114	111	107	103	100	98	99	100	109
31-32	98	97	93	93	92	91	90	97	98	97	97	94	95
32-33	92	89	86	87	91	91	91	90	88	88	86	82	88
33-34	86	87	89	91	89	88	88	88	89	90	89	88	88
34-35	89	90	90	89	89	89	89	88	88	94	90	87	90
35-36	88	91	91	91	89	89	93	92	93	92	91	91	91

It will appear from these tables that the Bombay cost of living index was fairly steady during the three years 1926-27, 1927-28 and 1928-29, the annual averages respectively being 155, 152 and 147. It began to show a downward tendency from September, 1927 along with the fall in wholesale prices. The disparity between the two indices was the widest in July, 1926, since when it began to narrow down, minima having been attained in March, July and November, 1928. From that time it began to widen again and the disparity became considerable by the close of the year 1929. The reason is that the cost of living index remained practically steady up to the end of 1929, but the wholesale price index began to fall definitely from April, 1929. During that month, Calcutta wholesale index recorded a fall of 6 points as compared with the figure for the same month in 1928, and the fall became almost continuous from October, 1929.

In order to show better the divergence between the Calcutta wholesale price index and the Bombay cost of living index, the former has been divided by the latter and the quotient multiplied by 100, and the result is given in Table 3, which therefore shows the percentage rise or fall of the wholesale index above or below the

CHART 1. CALCUTTA WHOLESALE PRICE INDEX (1·1), BOMBAY COST OF LIVING INDEX (1·2), DISPARITY, CALCUTTA : BOMBAY (1·3).



cost of living index for the past few years. If we consider the quinquennium 1924-25 to 1928-29, it will be apparent that the disparity was the least in 1925-26 and in 1928-29 and that it was less in 1927-28 than in 1926-27, the year in which our currency was stabilised. The average disparity indices for these five years were 108.9, 102.0, 94.2, 96.7

TABLE 2. INDEX NUMBERS OF COST OF LIVING (BOMBAY)

BASE: JULY, 1914 = 100. DATA FROM *Bombay Labour Gazette*.

Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Annual
1919-20	167	168	174	186	179	172	174	178	174	183	181	177	176
20-21	172	178	181	190	191	192	193	186	181	169	162	160	179
21-22	160	167	173	177	180	185	183	182	179	173	165	165	174
22-23	162	163	163	165	164	165	162	160	161	156	155	154	161
23-24	156	153	152	153	151	154	152	153	157	159	156	154	154
24-25	150	150	153	157	161	161	161	161	160	157	157	150	157
25-26	158	156	154	157	152	151	153	153	155	155	154	155	154
26-27	153	153	155	157	155	155	153	154	156	156	155	153	155
27-28	153	152	154	156	157	154	151	150	151	151	148	145	152
28-29	144	147	146	147	146	145	146	147	148	149	148	149	147
29-30	148	147	147	148	149	149	149	150	150	147	144	141	147
30-31	140	139	140	139	136	136	131	127	121	117	113	111	129
31-32	111	110	107	108	108	108	108	108	109	110	110	111	109
32-33	108	107	107	109	109	109	109	110	110	109	106	106	108
33-34	101	100	104	103	103	102	100	101	98	96	96	94	100
34-35	93	94	95	97	97	100	100	101	99	98	99	96	98
35-36	98	100	101	101	103	103	103	104	103	103	102	102	102

TABLE 3. DISPARITY BETWEEN WHOLESALE PRICE AND COST OF LIVING INDICES.

$$\text{Disparity} = \frac{\text{Calcutta Wholesale Price Index}}{\text{Bombay Cost of Living Index}} \times 100$$

Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
1919-20	112·6	116·1	113·2	114·0	113·4	115·1	116·7	119·6	121·8	116·0	114·4	111·3	114·8
20-21	115·1	119·6	112·7	108·9	107·9	107·3	105·7	103·2	98·3	104·7	106·2	108·1	108·9
21-22	113·1	108·4	101·7	102·8	101·1	100·0	99·4	97·8	99·4	101·2	107·8	109·7	103·4
22-23	111·1	112·2	109·8	106·7	104·9	103·6	106·2	108·8	106·8	112·2	113·6	114·9	109·8
23-24	110·9	112·4	111·8	107·8	108·4	109·7	111·2	112·4	110·8	106·3	110·8	113·0	111·0
24-25	112·7	114·0	111·6	110·8	108·7	108·1	109·8	108·7	106·0	105·1	104·5	101·9	108·9
25-26	105·7	101·9	99·4	99·6	101·8	102·0	102·6	103·9	101·9	102·6	100·0	97·4	102·0
26-27	97·4	93·4	94·8	91·1	93·6	91·7	92·9	93·5	93·6	92·9	93·5	94·2	94·2
27-28	94·8	96·1	96·1	95·5	96·2	96·8	97·4	98·7	98·0	94·2	97·8	99·3	96·7
28-29	101·4	98·6	98·6	99·3	97·9	97·9	97·9	99·3	98·0	97·3	97·3	96·0	98·6
29-30	94·6	94·6	93·9	96·0	96·0	96·0	94·9	91·3	89·8	89·1	87·5	88·7	93·2
30-31	87·9	87·6	87·9	87·7	83·8	81·6	81·7	81·1	82·6	83·8	87·6	90·1	84·3
31-32	88·3	88·7	85·0	86·1	83·7	84·3	88·0	89·8	89·9	88·2	88·2	84·7	87·2
32-33	83·2	83·2	80·4	79·8	83·5	83·5	83·5	81·8	80·0	80·7	81·1	77·4	81·5
33-34	82·4	87·0	85·6	88·4	86·4	86·8	88·0	87·1	90·8	93·8	93·7	93·6	88·0
34-35	93·7	95·8	94·8	91·6	91·8	89·0	89·0	87·1	89·9	93·0	90·9	88·7	91·8
35-36	89·8	91·0	90·1	90·1	89·4	86·4	90·3	88·5	88·6	89·3	89·2	89·2	89·2

and 98.6, respectively. But the year 1925-26 cannot be taken as the period of stability because the amplitude of fluctuations that year was wider than in 1927-28 and 1928-29 as shown below:—

BOMBAY COST OF LIVING INDEX.

Fiscal Year	Highest Value	Lowest Value	Difference.
1925-26	... 105·7	97·4	8·3
1927-28	... 99·3	94·8	4·5
1928-29	... 101·4	96·0	5·4

Movement of Price *inter se*.

Although the movement of the cost of living index in relation to the wholesale price index has been described in much detail, it should be recalled that the cost of living does not measure the cost of production. It has therefore been thought necessary to test the correspondence in an indirect manner through a study of the possible effects of disparity between the two.

For instance, if there is a violent upward and downward oscillation of prices *inter se*, we should suspect economic disequilibrium, even though the general price level remains fairly steady. Let us therefore see how the prices of different groups of commodities behaved during the period of our enquiry. Two broad groups of commodities are, (*a*) food stuffs and raw materials, and (*b*) manufactured goods. These behave differently during different phases of the trade cycle—strain, crisis, depression, revival and prosperity. Agriculture all the world over, is less organised and hence less able to adjust its production to demand than manufacture. In other words, the supply of agricultural goods is less flexible: the demand for agricultural goods is more inelastic. These peculiarities are broadly true in the case of raw materials as well, which explains why foodstuffs and raw materias fall much more in price at the beginning of a depression. For the same reasons they are also the first to rise in price when a trade revival sets in. If therefore the movement of prices of both raw materials and finished goods is substantially similar during any period, it may be reasonably inferred that the period is one of comparative economic stability.

Unfortunately the index numbers of prices of these two groups are not available in Government of India publications. Fairly reliable index numbers of export and import prices in India may however be obtained from the *Review of Trade of India*. As the bulk of our imports consists of manufactured goods and by far the largest proportion of our exports comprise agricultural goods and raw materials, these two index numbers (given in Table 4) may be regarded as reasonably valid substitutes for the index numbers of the above two groups of commodities. It appears from Table 4 and also from Chart 2 that both import and export price indices fell in 1925-26, the former by 22 points and the latter by 2 points, as compared with the respective indices in 1924-25. In 1926-27, the export index fell by 20 points and the import index by 10 points as compared with the indices of the previous year. During the next financial year, the oscillations of the two indices were different, the export index fell by only 2 points while the import index by as much as 12 points. Thus though the movements of the two indices were by no means uniform the average export and import prices during the two years 1927-28 and 1928-29 were fairly steady; import index in 1928-29 recorded a fall of 3 points as compared with 1927-28. A similar fall is recorded in the export index also. This lends support to the contention that the years 1927-28 and 1928-29 were of comparative stability.

In order to show the relative movement better, export prices have been expressed as percentage of import prices in Table No. 4 above. This is really the same as the net barter term of trade.[1] It will be seen that the figure was the same in 1928-29 as in 1927-28, marking these two years out as a period of equilibrium.

[1] Taussig calls the reciprocal of this the net barter term. It has been thought advisable to follow the English terminology specially as this has been adopted also in the League of Nations publications such as the annual *Review of World Trade*.

CHART 2. EXPORT PRICE INDICES (2·1), IMPORT PRICE INDICES (2·2), NET TERM OF TRADE (2·3).

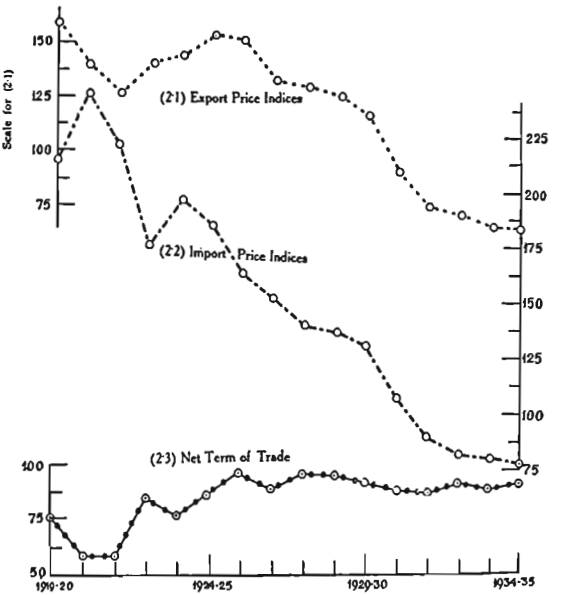


TABLE 4. EXPORT AND IMPORT PRICES IN INDIA. DATA FROM THE *Review of Trade*.

YEAR	PRICE LEVEL OF		Net term of Trade $= \frac{\text{Export}}{\text{Import}} \times 100$	YEAR	PRICE LEVEL OF		Net term of Trade $= \frac{\text{Export}}{\text{Import}} \times 100$
	Exports	Imports			Exports	Imports	
1913-14	100	100	100	1927-28	130	136	95·6
				1928-29	127	133	95·5
1919-20	158	206	76·7				
1920-21	140	237	59·1	29-30	118	128	92·2
21-22	127	214	59·3	30-31	94	105	89·5
22-23	140	169	82·8	31-32	78	88	88·6
23-24	145	190	76·3	32-33	75	82	91·5
24-25	154	180	85·6	33-34	70	79	88·6
25-26	152	158	96·2	34-35	70	77	90·9
26-27	182	148	89·2				

Other Indices of Disequilibrium.

Any disparity between prices and costs will also be revealed by inflated or reduced profits, which must result in company promotions and liquidations. An attempt was made to study this incidence of disparity between costs and prices, but it proved abortive. In the first place, insolvent companies are not quickly dissolved; they sometimes drag on for five or six years before the Registrar of Joint Stock Companies is able to remove them from the register. As regards incorporations also there are two difficulties. There may be started some companies which have been reconstructed out of defunct companies. Secondly, only authorised capital may be shown in the return, although it is notorious to what extent the authorised capital differs from the subscribed,—not to speak of the paid-up capital.

In these circumstances, it has been thought advisable to scrutinise the evidence of disparity in an indirect manner. If the gap between prices and costs is widened, there is a greater profit, attracting more and more long-term capital to industries and leaving less and less long-term funds for investment in Government securities. It follows therefore that the steadiness in the price of 3½ per cent Government paper roughly indicates steadiness in profits, in employment and in economic activity generally, provided other factors such as the credit of Government remain the same. The following Table 5 and Chart 3.1 will show the situation.

Table 5. Index Number of the Price of 3½% Government Paper.
Base: July, 1914=100. Data from the *Indian Trade Journal*.

Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
1919-20	74	74	73	72	71	71	71	69	67	65	64	62	72
20-21	62	61	61	—	—	—	59	54	55	61	58	56	58
21-22	—	—	—	62	63	62	62	62	62	58	58	58	61
22-23	58	61	60	60	59	60	60	60	60	60	60	62	60
23-24	65	67	67	67	68	68	67	65	65	67	69	69	67
24-25	70	70	71	70	70	70	67	69	69	70	69	70	69
25-26	70	71	72	72	72	72	71	71	71	73	74	76	71
26-27	79	81	81	81	81	81	81	81	82	81	81	82	80
27-28	82	82	81	81	80	79	79	79	78	79	79	79	81
28-29	79	79	79	79	77	77	76	76	76	76	76	75	78
29-30	75	75	73	71	71	72	71	71	70	69	67	69	72
30-31	71	67	68	67	66	67	67	68	67	65	65	65	66
31-32	65	65	63	63	61	58	54	57	54	55	58	64	63
32-33	64	65	65	72	72	72	76	77	76	81	85	88	70
33-34	91	88	84	87	89	88	86	86	86	87	88	92	87
34-35	92	92	92	93	93	93	95	97	101	102	101	99	94
35-36	95	98	98	99	96	93	94	99	100	100	101	102	98

Conditions of External Equilibrium.

Let us now proceed to consider the conditions of external equilibrium, for which, to use Keynes's phrasecology, foreign balance must equal foreign lending and there should be neither import nor export of gold, including 'ear-marked' gold. In the peculiar conditions of India, there is normally an import of gold which should therefore be treated in the same way as an import of ordinary merchandise. It is only when a large change in such import persists for some time, one may suspect external disequilibrium. The other condition requires approximately the same yield of interest in the country concerned and outside, after making allowance for risks of transfer and investment. In the next place, there should be approximately the same price level of internationally traded

goods at home and abroad after making allowance for changes in tariff and transport charges. It is only this last condition that has been examined by the Hilton Young Commission.

GOLD MOVEMENTS.

As regards gold movements, the necessary data have been compiled from the annual reports of the Controller of Currency in Table 6 and illustrated in Chart 4. It will be apparent that during the years 1927-28 and 1928-29, gold imports were practically on the same scale as the pre-war average, which again did not differ materially from the average for the decade 1919-20 to 1928-29.

CHART 3. 3½ P. C. GOVERNMENT PAPER (3·1), SHIPPING FREIGHT INDEX NUMBER.

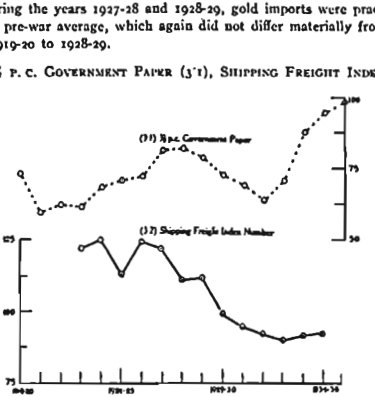


Chart 3.2 is otherwise interesting. It will be seen that the whole aspect of the situation was altered after 1930-31,—to be more exact, after the suspension of the gold

TABLE 6. GOLD MOVEMENTS. PRIVATE GOLD.
DATA FROM *Report of the Controller of Currency.*

Year	Value (in lakhs of rupees)	Year	Value (in lakhs of rupees)	Quantity (in lakhs of ounces)
Average of 10 pre-war years ending 1918-14	−2087	1925-26	−8485	−61·6
		26-27	−1940	−83·9
Average of 10 years ending 1928-29	−2372	27-28	−1810	−81·8
		28-29	−2120	−87·9
		29-30	−1422	−25·2
1919-20	−1097	30-31	−1275	−22·4
20-21	+ 858	31-32	+5797	+76·8
21-22	+ 279	32-33	+6552	+85·3
22-23	−4118	33-34	+5705	+67·0
23-24	−2919	34-35	+8254	+56·9
24-25	−7303	35-36	+8750	—

standard in England. The small exports during 1920-21 and 1921-22 pale into insignificance when compared with the exports after 1930-31, still more so when comparison is made, as it should be, with our normal pre-war or post-war imports.

Movements of Interest Rates.

For studying the second condition of equilibrium, it has been thought advisable to compare the bank rate in India with that in the U. S. A., for both are large agricultural countries, with decentralised banking systems and rapidly growing manufactures. It will be evident from Table 7 and Chart 5 that the Indian rate was in greater adjustment

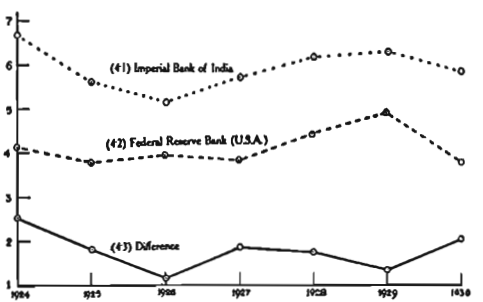
Table 7. Bank Rate in India and the United States of America.
Data from the *Statistical Year Book* of the League of Nations (1930-31).

Year	Imperial Bank of India	Federal Reserve Bank (U.S.A.)*	Difference
1924	6·68	4·14	2·54
1925	5·64	3·81	1·83
1926	5·17	3·99	1·18
1927	3·73	3·85	1·88
1928	6·20	4·42	1·78
1929	6·83	4·94	1·89
1930	5·89	3·82	2·07

* Figures published in the subsequent issues of the Year Book have been slightly different.

with the American rate during the two years under consideration than at any period of two years before or after. For it must be remembered that on account of different risks and different taxes in the two countries, the rates cannot be exactly equal. All that

Chart 4. Imperial Bank of India (4·1), Federal Reserve Bank (U. S. A.) (4·2), Difference (4·3).



is necessary is that the two should show the same trend. The difference between the two rates is shown in Chart (3.3), which it will be noticed was practically horizontal during 1927—1929.

Another indication of external equilibrium is the adjustment of long-term rates of interest in India and abroad. That it was not attained in 1926-27, is clear from the following extract from the Budget Speech of the late Sir Basil Blackett on the 28th of February, 1927—"during the year 1926-27 (there) has undoubtedly been the movement of capital from India to London due to the higher rates for both long-term and short-term money which have prevailed in London for the greater part of the financial year". By the end of February, 1928, as the late Sir Basil Blackett observed in his Budget Speech for 1928-29, the disparity between the prices of 3½ per cent rupee stock in India and India 3½ per cent. sterling stock, became much less than it was a year ago and this unusual movement of funds from a debtor to a creditor country slackened, indicating a return to a more normal condition. Sir Basil hailed this transfer of funds from India to London "as the first step towards India's becoming a creditor nation". As a matter of fact, it only indicates our external disequilibrium which must have been partly due to the speculative transfer of funds to London, in order to take advantage of the possible stabilisation of the rupee at 1s. 4d. in March, 1927. This is another additional reason why the year 1926-27 cannot be taken as a period of stability.

BARTER TERMS OF TRADE.

Let us now go into some of the deeper signs of external equilibrium. In the first place, the barter term of trade, whether gross or net, reflects external disequilibrium to some extent. It is true that changes in these terms may arise in any or all of the following cases:—(*a*) changes in demand conditions; (*b*) changes in supply conditions; (*c*) import duties, export duties and export bounties; (*d*) changes in transport costs; (*e*) changes in the volume of one-sided payments.

It will be readily seen that there was no great change in any of these factors during 1927-28 and 1928-29. It is true that both demand and supply factors were modified considerably during war and post-war periods, but conditions had settled down by 1927. Similarly, whatever might have been done earlier or later on, there was no violent disturbance in the tariff level during the two years under consideration, and there was no bounty. Nor was there any great change in shipping freight as shown by the *Economist* index number quoted below, in Table 8, provided allowance is made for the short and sharp rise in rates due to the General Strike in England.

TABLE 8. SHIPPING FREIGHTS INDEX NUMBER (1898—1913=100).
Index Composed of (1) South Wales—Bombay; (2) South Wales—Colombo; and (3) Bombay—U. K. (Continent). Dead Weight Rates, A. M. of Freight both ways. Data from *Economist*.

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1923	120·2	117·8	125·4	133·8	127·0	125·5	122·4	117·7	117·8	119·4	122·7	124·4	122·8
24	124·9	129·8	132·1	127·4	127·7	129·5	120·1	119·0	124·0	126·6	120·5	119·8	125·1
25	123·8	122·0	117·0	116·0	108·4	105·5	106·2	112·2	113·4	106·5	109·0	110·1	112·6
26	119·6	118·5	114·6	100·2	107·9	120·4	119·8	119·6	121·7	141·7	138·0	132·9	123·5
27	122·7	130·4	132·1	124·4	130·9	117·6	113·6	121·4	119·8	116·4	117·6	114·2	121·9
28	113·6	112·4	106·7	103·9	110·1	104·0	99·4	108·4	109·0	116·0	117·8	126·8	111·2
29	123·7	117·9	112·2	106·8	100·0	104·0	106·8	117·0	115·8	117·4	110·7	109·0	113·4
30	99·8	93·4	94·2	91·8	94·2	95·7	102·8	104·5	103·7	101·8	99·8	103·8	99·0
31	101·8	96·0	99·2	94·0	94·8	91·8	87·6	88·4	86·1	97·6	90·1	98·1	93·4
32	90·0	87·4	87·7	90·8	93·5	98·1	90·8	90·7	92·5	94·5	94·7	96·0	91·9
33	94·5	90·7	87·0	85·0	84·2	86·5	90·5	96·0	92·7	92·4	92·7	93·6	90·2
34	92·4	93·0	91·4	90·1	86·8	88·0	88·8	96·1	98·6	96·3	94·5	96·0	92·0
1935	94·3	94·5	92·8	90·6	88·6	86·5	83·4	85·8	88·8	110·0	109·7	107·1	93·2

Balances of Payments.

As regards balance of payments, figures are necessarily rough all the world over. In the case of India they are largely conjectural. As pointed out in the *Report of the Controller of Currency* for 1929-30 (pp. 6-7), the items which are perfectly dependable are those relating to Government remittances and to transfer of Government securities between London and Indian registers. As regards trade figures, the value of exports is fairly reliable, for they are mostly staple agricultural products. The same cannot be said of imports, some of which may be undervalued because of the duties. Other items also lend themselves to risks of error the possibility of which cannot be ignored.

The following Table 9 is extracted from the *Balances of Payments, 1934*, issued by the League of Nations, for what it is worth. The large change in long-term capital item looks suspicious for reasons explained below. It will be seen from Table 10 that the gross and net barter terms of trade are nearly the same during 1927-28 and 1928-29, indicating that there was no abnormal capital movement during the period.

Table 9. Balance of Payments in Rupees in Millions.

Data from *Balances of Payments, 1934* (League of Nations).

Year	Goods, Service and Gold					Capital Items		
	Merchandise	Interest & Dividends	Other Services	Gold	Total	Long Term	Short Term *	Total
1923-24	+1105·8	−823·7	−433·0	−292·1	+ 56·5	+221·0	−277·5	− 56·5
24-25	+1176·6	−817·8	−333·7	−738·8	−218·7	−122·5	+336·2	+213·7
25-26	+1100·5	−289·9	−364·8	−848·6	+187·2	−165·8	− 21·9	−187·2
26-27	+ 851·0	−297·8	−317·2	−194·0	−488·0	+383·8	+104·2	+488·0
27-28	+ 813·4	−814·4	−347·0	−181·0	−329·0	+146·8	+182·2	+329·0
28-29	+ 665·0	−824·7	−312·2	−212·0	−183·9	+ 5·2	+178·7	+183·9
29-30	+ 538·1	−316·0	−180·1	−142·2	−100·2	+183·2	− 83·0	+100·2
30-31	+ 371·3	−333·8	−159·1	−127·6	−251·2	+432·2	−181·0	+251·2
31-32	+ 222·6	−317·6	−179·4	+579·7	+275·3	+117·6	−392·1	−275·3
32-33	− 34·7	−344·1	−161·6	+653·2	+ 94·8	− 65·0	− 29·8	− 94·8
33-34	+ 270·0	−339·2	−121·9	+570·5	+380·3	−215·5	−164·8	−380·3
34-35	+ 112·6	−825·1	−139·4	+525·4	+173·5	− 86·7	− 86·8	−173·5

* Interpolated as balancing accounts.

Plus indicates export from and *minus* indicates import into British India.

Gross and Net Barter Terms.

The figures for the gross and net barter terms of trade given in Table No. 10 have been calculated on the basis of the data published in the *Review of Trade* and referred to above. It has rightly been pointed out in the *Review of World Trade*, 1934 (League of Nations), p. 75, that both "price and quantum indices are likely to be misleading if comparison is made over long periods of time". To meet this objection, Table 10 has been divided into two sections, Section B giving price and quantum indicase from 1913-14 to 1934-35 with 1913-14 as the base, and Section A giving the same figures from 1927-28 with 1927-28 as the base period. Relevant figures are also graphically shown in Charts 5 and 6.

CHART 5. EXPORT (5·1), IMPORT (5·2), GROSS BARTER (5·3), NET BARTER (5·4). 1927-28 = 100.

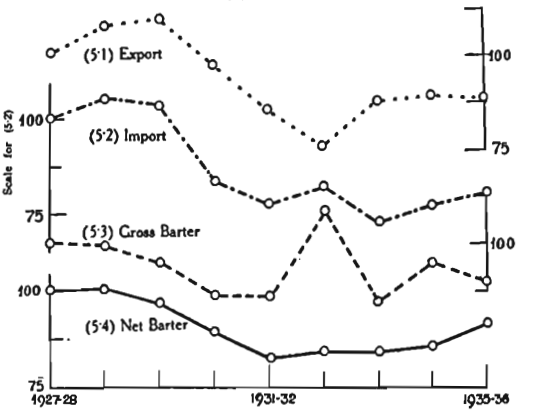


TABLE 10. GROSS AND NET BARTER TERMS OF TRADE.

SECTION A. 1927-28 = 100.

Fiscal Year (April—March)	Base 1927-28 = 100		Term of Trade	
	Export	Import	Gross *	Net †
(1)	(2)	(3)	(4)	(5)
1927-28	100·0	100·0	100·0	100·0
28-29	106	105	99·6	101·1
29-30	104	103	95·4	99·8
30-31	97	83	85·6	89·4
31-32	83	71	85·5	82·6
32-33	75	81	108·0	84·8
33-34	86	73	84·9	84·8
34-35	88	84	95·5	85·9
35-36	88	87	99·9	91·6

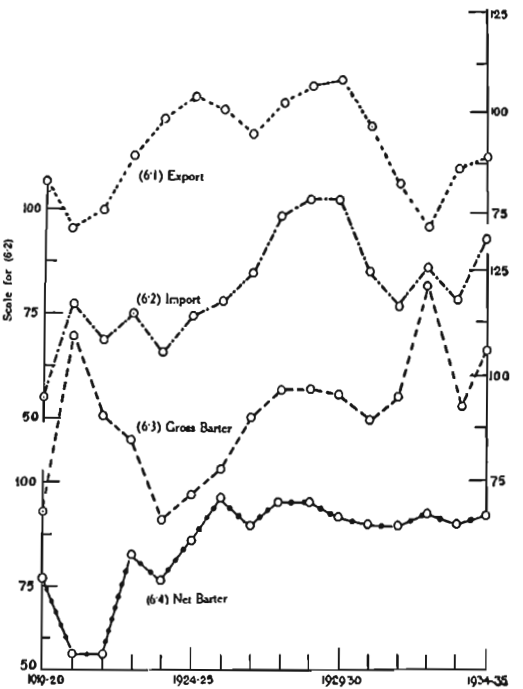
SECTION B. 1913-14 = 100.

Fiscal Year (April—March)	Base 1913-14 = 100		Term of Trade	
	Export	Import	Gross *	Net †
(1)	(2)	(3)	(4)	(5)
1913-14	100·0	100·0	100·0	100·0
19-20	81·1	55·2	68·0	76·9
20-21	70·5	77·6	110·1	59·2
21-22	74·0	67·8	90·9	59·2
22-23	87·7	75·4	86·0	92·6
23-24	96·4	65·6	66·7	76·3
24-25	102·0	74·9	72·8	85·5
25-26	100·8	78·1	77·5	90·7
26-27	93·4	85·2	91·2	89·8
27-28	101·6	98·9	97·3	93·2
28-29	106·6	103·8	97·4	93·2
29-30	107·8	103·8	95·8	91·7
30-31	96·8	85·8	89·1	89·8
31-32	92·0	78·1	85·2	86·8
32-33	72·1	88·5	122·7	91·7
33-34	85·7	79·8	93·1	88·5
34-35	88·5	94·0	106·2	90·9

* Gross = 100 × [(3) ÷ (2)].
† Net = 100 × [(Export Price Index) ÷ (Import Price Index].

It is interesting to note in this connection that the quantum of export and import trade practically reached the level of 1913-14 during the year 1927-28. It may also be

CHART 6. EXPORT (6·1), IMPORT (6·2), GROSS BARTER (6·3), NET BARTER (6·4). 1913-14 = 100.



noted that both gross and net barter terms of trade of India in 1927-28 and 1928-29 were nearer to the 1913-14 level than in any other post-war year. It is true that in 1925-26 our net barter term of trade was closer to the 1913-14 level, but the gross barter term that year was farther away.

These Charts No. 5 and 6 are otherwise interesting. It will be seen that the gross and net barter terms of trade exhibit similar trends from 1927-28 to 1930-31, both rising and falling together although not exactly to the same extent. Since then there is lack of parity between the two. From 1930-31 to 1931-32, the net term fell by 0.8 but the gross term rose by as much as 5.9. During the year following, the former rose by 3.2 and the latter by 26.8. The figures for the subsequent years show an equally erratic movement. The gross barter term was affected by the considerable gold outflow, for it not only met our foreign obligations but also paid for a substantial part of imports. It is no wonder therefore that our imports rose proportionately higher than exports, recording an increase in gross barter term.

Even the net barter term figures are not free from irregularities, but not to the same extent. It should be remembered that in calculating the net barter term declared values of exports and imports were utilised and the effect of customs duties which were heavy and variable was eliminated to some extent.

The disparity between the quanta of exports and imports is equally noticeable. From 1921-22, the gap between the two continued to widen and began to narrow down only after 1926-27. There was again a fairly wide disparity after 1931-32. The lack of balance in the quanta of exports and imports and in the gross and net barter terms point to disturbances in economic conditions.

It is readily conceded that all the above tables and diagrams do not give any irrefutable proof that the fiscal years 1927-28 and 1928-29 were of comparative stability. But there can be no gainsaying the fact that the data which are more dependable lead to that conclusion. In any case, there is no doubt whatsoever that the statistics presented from different fields of economic activity tend to show that adjustment was more complete during those two years than at any time before or after, whether economic stability as enunciated by economic theory was attained or not. It follows that all index numbers, whether of wholesale prices or of cost of living or of other items of economic statistics, should be reconverted to this basis in our official publications.

THE HILTON YOUNG RATIO.

The question of overvaluation and undervaluation of the rupee as fixed by the Hilton Young Commission has been examined by many economists, businessmen and administrators from different points of view. Instead of considering their views, it has been thought advisable to look into the statistics of the period in question as given in Table Table II.

TABLE II. TERMS OF TRADE, COST OF LIVING AND WHOLESALE INDEX NUMBERS.

Fiscal Year (April—Mar.)	INDIA				ENGLAND	
	Net Barter Term of Trade 1913-14=100	Gross Barter Term of Trade 1913-14=100	Calcutta Wholesale Index Number July 1914=100	Bombay Cost of Living Index July 1914=100	Board of Trade Wholesale Index Number 1913=100	Ministry of Labour Cost of Living Index Number 1914=100
1925-26	96·2	77·5	157	154	154	172
27-28	93·2	97·1	147	152	140	160
28-29	95·2	97·1	145	147	139	166
Average for 1927-29	93·2	97·1	146	140·5	139·5	167·5

* During the two years 1927-28 and 1928-29, the observed exchange rate was 17.97, which represents the average of the weekly quotation for the T. T. selling rate published in the Indian Trade Journal.

If we apply the theory of the purchasing power parity in its usual form, with index numbers of wholesale price, we find the proper exchange rate for 1925-26 on the assumption of there being normal conditions during the years 1927-28 and 1928-29 to be

$$17.97 \times \tfrac{4}{4}\tfrac{1}{4} \times \tfrac{4}{1}\tfrac{4}{0}\tfrac{4}{0} = 18.5.$$

If on the other hand we proceed on the basis of the pre-war equilibrium period when the exchange rate was 16*d.* approximately the parity rate for 1925-26 $= 16 \times \tfrac{4}{4}\tfrac{4}{1} = 15.7$.

This wide discrepancy is partly due to the fact that the index numbers chosen do not accurately represent the purchasing power of money in India and in England. Keynes however points out (*Money*, Book II, Ch. V, p. 73) that "there is no justification, even in the long run, for any precise, necessary or immediate relationship between changes in the rate of exchange of the currencies of two countries and the changes in their Consumption Standards relatively to one another. To suppose that there is, overlooks the possibility of a change in the Terms of Trade." From the Table No. 11, it will be seen that the net term of trade in 1925-26 was practically the same as that in 1927-29 and not materially different from that in the pre-war year.

The question now remains how best to measure the purchasing power of money in India and in England. Carl Snyder has suggested that for England it is measured by a composite made up as follows:—

> Board of Trade wholesale prices 2: Ministry of Labour cost of living 3½: Bowley's wages index 3½: Rent ½.

For the correction of clearing figures in the *Economist* index of business activity for variation in the purchasing power of money, the following composite has been used:—

> "*Economist*" wholesale prices 1: Ministry of Labour Cost of Living 2: Ministry of Labour Wages 2.

It is not possible to examine here fully the question of a Consumption Standard for India which has been done elsewhere by both of us. For the present, we may only suggest that the Bombay cost of living index gives a better idea of it than the Calcutta wholesale prices index. In order that the manner of the construction of the index for the United Kingdom may be as similar as possible to the method of construction followed in India, we have thought it advisable to take the Ministry of Labour cost of living index for the United Kingdom. If that is done, the parity rate for 1925-26 can be calculated in the following way.

(*a*) On the assumption of there being a normal period during 1927 to 1929,

$$17.97 \times \tfrac{1}{1}\tfrac{4}{6}\tfrac{8}{4} \times \tfrac{1}{1}\tfrac{7}{0}\tfrac{5}{5} = 17.92.$$

(*b*) On the assumption of there being a normal period in the pre-war years,

$$16 \times \tfrac{1}{1}\tfrac{1}{0}\tfrac{4}{4} = 17.87.$$

These two are not so much apart as those obtained above on the basis of wholesale indices.

We have now to test whether there was in fact a proper adjustment between exchange and prices during the two years 1927-28 and 1928-29 which we have sought to establish as an equilibrium period, largely on *a priori* grounds. In other words, we should be able to derive a parity rate for 1927-29 on the basis of the actual rate in 1913-14. If that is done, the parity rate becomes on the basis of cost of living indices $16 \times \tfrac{1}{1}\tfrac{7}{0}\tfrac{7}{8}$ or 17·26 which does not appreciably differ from the observed exchange rate of 17·97,

TABLE 12. INDIA'S VISIBLE BALANCE OF ACCOUNTS (IN CRORES OF RUPEES).
DATA FROM THE *Report of the Controller of Currency.*

	Average of 5 Years Ending					
	1913-14	1918-19	1923-24	1924-25	1925-26	1926-27
Balance of trade in merchandise on private accounts	+78	+76	+52	+1,53	+1,61	+70
Gold on private account and entering into balance of trade	−29	− 8	−14	− 74	− 85	−19
Silver ditto	− 7	− 8	−12	− 20	− 17	−20
Total Visible Balance of Trade	+42	+65	+26	+ 61	+1,09	+40
Council sales, Sterling purchases and similar transfers	−41	−53	−15	− 50	− 61	− 8
Reserve Councils and similar transfers ...	—	+ 6	+ 9	—	—	+ 2
Transfers of Government Securities and remittances through interest drafts on securities	− 1	− 1	—	− 1	− 2	—
Balance of remittances of funds ...	−42	−50	− 6	− 57	− 63	− 1
Total Visible Balance of Accounts ...	—	+83	+20	+ 4	+ 46	+39

specially when we remember that the barter term of trade was then 95·2 in place of the pre-war figure of 100.

It appears from the above analysis that the exchange rate was not put at an unduly high level by the Hilton Young Commission. Their mistake lay in the fact that they stabilised the exchange at a time when the time was not ripe for stabilisation. It is well known how unsettled the world conditions were at the time. In India also there was great instability. On reference to Table 10 it will be seen that the net term of trade rose from 85·5 in 1924-25 to 96·2 in 1925-26 and fell to 89·3 in the next year. The gross barter terms of trade during these three years were respectively 73·0, 77·5 and 90·9. How seriously out of joint India's balance of accounts was, will also appear from the following Table (No. 12) summarised from the *Report of the Controller of Currency* for 1926-27. During 1926-27, the export surplus was small, nor could remittance to London be effected. Apart from these, the visible balance of accounts was very unsteady as shown in the last line of the table, calling for large capital movements.

At this distance of time, things can be seen at a proper perspective. The relative values of economic events have also considerably changed. Even when these are conceded, it is rather unfortunate that the rupee was sought to be stabilised in such a troubled period. The strain for the maintenance of exchange began to be felt almost immediately, not because the exchange rate was fixed too high as popularly supposed, but because there were great economic disorders to be reckoned with both at home and abroad.

[*Paper received, June 1937.*]