CHAPTER VII
THE AGRICULTURAL COMMODITY MARKET

Introduction

Part I : Price: Trends and Fluctuations - Rice and Lac
   1.1 : Trends
   1.2 : Determination of Fluctuation of Price

Part II : Market for Commodities in Chotanagpur
   2.1 : Localisation of Market : In 19th Century
   2.2 : The Hat

Part III : Imports and Exports 1890 - 1920
   3.1 : Foodgrains
   3.2 : Non-Foodgrains
   3.3 : The Problem and the Explanation

Part IV : Structure of Market
   4.1 : Interlocked Markets
   4.2 : Cotton : The case of 19th century Forced Commerce
   4.3 : Rice : The Market for Staples
   4.4 : Lac : The World Market and the Tribal Economy

Part V : Supply Response to Price : Rice and Lac
   5.1 : Rice : The Subsistence Ethic
   5.2 : Lac : The Market Response

Conclusion
CHAPTER VII

Introduction

In many ways the forces of market had already begun to make their impact felt on the agrarian society of Chotanagpur, by the last quarter of the 19th century. In the last chapter, it was suggested that the rent offensive of the landlords during the late 19th century was triggered off by the slow but steady rise in the price level. By eroding the real value of rental income the rising price level had come to play an important role in the ensuing conflict between landlords and tenants. We shall thus begin our enquiry into the structure of commodity market from an analysis of the price trends. The history of prices shall provide us with a conspectus of the process of integration of the regional economy into the wider circuits of the colonial economy.

Part I: Price Trends and Fluctuations: Rice and Lac 1800-1950

1.1: Trends

Data on price of rice is available for the whole period. From 1861 to 1921 we have the data quoted in the Prices and Wages. From 1921 onwards, the only source of continuous annual price is from the Gazettes of Bihar and Orissa. The annual series is shown in Fig. 7.1. The five yearly moving average is superimposed on the annual series. There are clearly 5 phases in the series. Between 1861 and 79 there is no discernible trend, though there are two distinct peaks and two troughs to be seen. The second phase begins from 1880-84 quinquennium, when a sustained inflationary pressure lifted the
FIG : 7.1

ANNUAL RICE PRICE AND TREND - CHOTANAGPUR : 1861-1948
FIG 7.2

ANNUAL LAC PRICE AND TREND: 1873-1948
FIVE YEARLY MOVING AVERAGE OF LAC AND RICE PRICE
1861-1948

Rice (Rs/mi)

Lac (Rs/cwt)
price level to unprecedented heights. Between 1880 and 1920 (quinnqu&Mbeginning) the price of rice increased by 300 per cent or at an annual average rate of 7.5 per cent. The next phase between 1920-1929 shows a definite slump in the first five years followed by a short upsurge of prices peaking in 1929. The third phase, beginning from 1929 onwards is coincidental with the great slump. The trough is reached in the phase 1934-1938 after which the next phase of massive inflation takes place from 1939 onwards, covering the war years and rising further from 1943.

The delineation of rough chronology of phases is in no sense a substitute for explanation. But some clue to the explanation can be had if the trend of foodgrain prices is compared with the trend of a non-foodgrain price. We take the example of lac, a commodity which had become a major item of export from India by 1890's. Since 60 per cent of the total produce in India lac crop was grown in Chotanagpur the prices of lac had a direct bearing on the income of the peasant growers of Chotanagpur. The 5 yearly moving average of lac prices shows huge cycles of booms and depression for the whole period till the Great Depression These long cycles are markedly absent in the trend of rice prices. The contrasting trends of the two major commodities that were marketed in Chotanagpur represented broadly the differential impact of the trend of world market prices on the commodity structure of the region. As the staple grain, rice was meant for the internal market. Lac being a classic export crop, the booms and swings of the world market were directly transmitted to the remote interiors of Chotanagpur through the fluctuation in prices. The trend in lac prices was thus in the first phase (1873-1904) relatively independent of the general
trend of prices of the national and regional economy. But from 1914 onwards, the trend in prices of rice and lac progressively came to move in consonance with each other. The booms and depressions in both the price series take place during the 1st World War, reaching a peak in 1916-1920 after which both the series show a slump and a brief revival just before the Great Depression. The movement of lac prices after the Depression and during 1939-45 were similar to that of rice prices. From the 1st World War price trends of both the commodities reached a synchrony that was missing earlier. Internal and external prices of most commodities became integrated. The contrast with the pre-world war situation is revealing. Thus between 1873 to 1895, during the long depression in the world market, the Indian prices were not seriously affected by the European Depression. This was true mainly for the commodities which were mainly sold in the home market. One can compare the trend of rice prices with that of wheat. The prices of the former swung upward from 1880-84 in Bengal while the latter went up at a much later date, around 1900.

1.2: Determination of Fluctuations of Price

What determined the levels and fluctuations in prices? Here again apriori considerations suggest that they would be determined largely by the nature of integration with the wider

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1. In this context, the relative movement of prices of raw jute and manufactured jute provides an interesting contrast. While raw jute prices moved upwards from about 1885, the price of manufactured jute moved up only from about the end of the century. On the other hand, in case of cotton, prices of both raw cotton and manufactured cloth remained depressed from 1873 till the end of the century after which, both moved upwards. See Index Number of Average Prices in India 1861-1926, Table VI and Chart No. IV and V.

2. ibid
As a subsistence crop peripherally linked to the world market, rice was highly sensitive to fluctuations of production. The trend element between 1861 and 1880 was hardly discernible, with annual fluctuations dominating the price levels. But even with the strong secular trend element from 1880-84 onwards (more strongly after 1905) the fluctuations in price levels continued right till the depression. After which the trend elements, be it during the Depression or during the war and post-war inflation, almost smoothen the fluctuations.

It is my contention that these stages in price history broadly represented the degree and level of integration of the regional economy into the wider circuits of supra-local economy. In the first phase (1861-80) when the level of integration is weak, the price level is largely governed by the supply situation internal to the regional economy. This phase is marked by not just large fluctuations but also wide variations in prices within the region. In the second phase (1880-1928) the demand factor has a larger role to play as the integration of the region to the wider national and zonal economy is tightened. It mainly affects the trend. The fluctuations are still governed to a large extent by the fluctuations in supply. In the final phase, (1929-46) the prices seem to bear no relation with the internal supply situation, being governed largely by the trend element in which the upswings and downswings of world market have a much stronger role to play.

It would be possible to demonstrate the validity of the above scenario if we had the data about internal supply positions (i.e., mainly of harvests of rice and food grains) for the
FIG: 7.4 (a)

RICE: PRICE AND PRODUCTION (NORMALIZED), 1890-1927

Price

Prodn.
(lagged by one year)
FIG : 7.4 (b)

RICE : PRICE AND PRODUCTION (NORMALIZED), 1928-1948

Price

Prodn. (lagged by one year)
Fig.: 7.5

Lac: Relation Between Calcutta Price and London Stock
whole period. However we have figures of condition of harvest and total harvest of rice and food grains only for the period 1890-1946.

Between 1890-1928, then we see that the detrended price and the condition factor of rice with one year lag show a fairly strong correlation ($r = 0.60$). See fig (7.40). The fluctuations in price level around the trend thus is largely determined by the fluctuations of the harvest of the past year. But after 1928, as is evident from the graph, there is no visible correlation between movement of prices and the harvest any longer.

In the case of lac, we have said that the world demand for Shellac products was of crucial importance. The upswings and downswings of prices were largely independent of supply position in India and Chotanagpur. They were determined by the pattern of growth and fall in the demand of the consuming industries. Price cycles till the beginning of depression were dominated by these large 10-12 yearly business cycles. The nodal point of the world market lay in London, where the large importing firms stocked the Shellac exported from Calcutta. The price rated at Calcutta at any given time was largely determined by the amount of inventory accumulated at London Warehouses. The depletion in stocks at London Warehouses indicated a growth of demand in the consuming industries while accumulation of Shellac in London, indicated sluggish demand in the consuming industries. In fig (7.5), we have the prices of Shellac in Calcutta and the number of 'cases' of lac (in cases of 2 maunds each) in the London Warehouses. The inverse relation between the two is clear.
The differential movement of lac and rice prices thus showed the different levels of integration of Chotanagpur with the supra-local markets. The Depression of 1930s had a great levelling effect; it homogenized the differences between the two price structures to a great extent. Till the Depression the fluctuations in rice prices reflected the fluctuations of the harvest. This relation does not hold good after the onset of Depression.

This preliminary discussions can be better understood if we take up the structure of internal market of commodities in Chotanagpur.

Part II: Market for commodities in Chotanagpur

2.1: Localisation of Market: 19th Century

The regional market for commodities was for a large part of the 19th century very weakly integrated with the national market. Internally, it was fragmented and localized. The advent of railways from 1888 hastened the process of integration with the national market at a rapid pace. As trade centres developed along railheads and feeder roads developed to connect a larger part of the region, variation of prices within the region declined. In Table 7.1, have the coefficient of variation of prices of rice between the districts of Chotanagpur from 1861 to 1921, given as 5 yearly averages. The steady drop in the coefficient from 1890 onwards is noticeable.

The impact of extension of railways on price equalization is well known. But railways affected only a small portion of the region directly. Till 1897, the chief railway

Table 7.1.

Coefficient Variation of Price of Rice Across Chotanagpur (5 districts)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean</th>
<th>Coefficient of variation (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1861-65</td>
<td>1.71</td>
<td>28.5</td>
</tr>
<tr>
<td>1866-70</td>
<td>2.51</td>
<td>34.2</td>
</tr>
<tr>
<td>1871-75</td>
<td>1.84</td>
<td>16.0</td>
</tr>
<tr>
<td>1876-80</td>
<td>1.92</td>
<td>16.0</td>
</tr>
<tr>
<td>1881-85</td>
<td>1.77</td>
<td>24.2</td>
</tr>
<tr>
<td>1886-90</td>
<td>2.00</td>
<td>12.21</td>
</tr>
<tr>
<td>1891-95</td>
<td>2.60</td>
<td>8.02</td>
</tr>
<tr>
<td>1896-1900</td>
<td>3.07</td>
<td>7.43</td>
</tr>
<tr>
<td>1901-1905</td>
<td>3.01</td>
<td>6.40</td>
</tr>
<tr>
<td>1906-1910</td>
<td>4.47</td>
<td>5.18</td>
</tr>
<tr>
<td>1911-1915</td>
<td>4.55</td>
<td>5.08</td>
</tr>
<tr>
<td>1916-1920</td>
<td>5.83</td>
<td>4.08</td>
</tr>
</tbody>
</table>

Source: Calculated from *Prices and Wages* 1922.
route, that of Bengal Nagpur Railway passed through Manbhum, bisecting the district, thus bringing the whole of Manbhum district into the ambit of railways. Apart from this, only a few areas had been touched by railways. The great portion of internal trade was thus carried on by means of bullock-carts and pack-bullocks. While the former plied the few metalled roads that connected the district head-quarters, the latter was by far the most important means of carriage, in the hilly undulating terrain of Chotanagpur. Two of the largest markets of the plateau Chatra and Lohardagga in Hazaribagh and Ranchi district had their trade carried mainly by pack-bullocks. The elevated central plateau, of Ranchi was connected with the plains of Manbhum and the nearest railhead of Purulia by a metalled road, 75 miles in length. The average time taken to cover this distance by bullock-carts was 7 days in the fair weather and 10 to 14 days during the rainy season. The cost of transport was estimated in 1897 at 9 annas a maund, increasing to 13 annas during the 4 months of monsoon. In Ranchi, it was reported that bullock-carts were to be found plying goods only on the metalled roads connecting Ranchi and Hazaribagh and Ranchi and Purulia. In the rest of the district, it was practically non-existent in ordinary times. In Palamau, the situation was particularly bad. In 1880 Vincent Ball prefaced his account of communication facilities in Palamau with the following words:

"This section might almost be written in words, mutatis mutandis, of Alorvandius' famous chapter concerning owls of Iceland. Of pucka bridged roads there is not a single example. The few roads that do exist are little better than mere fair weather track..."

But few of the others are practicable for carts, and the remainder can only be used by pack cattle and elephants.\textsuperscript{3}

Even, pack-bullock transport was not easy. In summer fodder for bullocks were scarce; and in the rains, the roads intersected by streams, were impassable. During the famine of 1897, practically no imports could be brought into the district owing to shortage of carts and the difficult conditions of roads.\textsuperscript{4}

As a general rule, the more accessible and better connected a region was, the brisker was the trade. Thus, in spite of the considerable time taken to transport commodities from Purulia to Ranchi, it was a principal artery of the regional trade. During September 1889, around, 13,000 carts laden with commodities passed every week through this route.\textsuperscript{5} During the 1897 famine, the merchants of Lohardaga mart marshalled 1244 carts in a week in January to collect rice and other foodgrains from the interiors. Although 80 per cent of these returned empty, it nevertheless indicated the level of commercial transaction.\textsuperscript{6} On the other hand, in Palamau, ill connected by road, the Government failed miserably in persuading the merchants to hire carts and get imported grains into the worst affected tracts of the district. All that the generous bounty offered by the Government at Rs.1 per maund could produce was a measly

5. V. Ball cited in Palamau DG (1961) p.260


7. Report on Trade Carried by Rail and River in Bengal (1890) p.5.

11,000 maunds of rice. The internal trade network at the end of the century was thus characterised by high density traffic in certain favoured regions and low density but widespread traffic in the rest of the region. The former was the domain of bullock cart and large merchants located in a few selected marts and trade centres of the region. The latter was the domain of the pack-bullock and the peripatetic beopari, who dealt in everything from salt, lac, catechu, oilseeds, to mahua, rice and other foodgrains.

The beopari was a man of small means owning only the pack-bullock, often financed by a merchant of the mart in Purulia, Lohardagga or Ranchi. His specialisation was what Forbes called 'door-to-door trade'. The timing of his wanderings had to coincide with the harvest since it was as a rule from the khalian or threshing floor that he bought up the goods, be it cotton or oilseeds in Palamau, or rice and pulses in rest of the region.10

The Hat

Geographers and anthropologists have tried to determine the factors that led to the rise of various forms of marketing in the near subsistence economies. The transition is usually described as one from the largely peddler based marketing to periodic markets and finally to the permanent market. This neat scheme of transition is triggered off at each stage by the

9. ibid para 62.

demographic variable. According to this scheme, till the population density is lower than a threshold, the major forms of marketing would be by the peddlers (in our case the peripatetic beopari). Once the density of population crosses the threshold, periodic markets come into being, where the buyers and sellers face each other. Finally after a higher threshold is reached the periodic market gives way to the permanent market. How far is this scheme applicable to that universal feature of the landscape of the tribal economy: the hat? It is difficult to say when the hats started dotting the landscape of Chotanagpur. Many were obviously of old standing; they had often grown round the villages of the ruling chiefs or the headquarter of a pir or patti. But there is evidence of steady rise in their numbers over our period of study. Many factors aided the growth of hat. Population density was obviously one of them, but not the only one. In Singhbhum, a geographer found the oldest hats to be ranged in the contour line of 1500 ft. Above it lived the largely hunting gathering tribes and below it, the settled agriculturist tribes. There was a necessity for periodic exchange between the two modes of tribal economy. The former supplied the latter with ropes made of the sturdy barks or creepers, baskets made from bamboos, charcoals made in the jungle which the tribal blacksmith

11. The pioneering work on periodic marketing is by Hodder who studied the distribution of markets in Yoruba land. He identified a critical threshold of 50 persons/sq mile above which periodic marketing becomes a regular phenomena, and below which they are absent. Other models of periodic markets take into account the reciprocal interaction between the buyers and sellers, in terms of modified demographical variables. See S. Wanmali, "Periodic Marketing and Rural Development in India" in Prasad ed. (1987), for a review of various geographical models. For a similar demographic model applied to China see G. Skinner (1964).

12. Wanmali (1987), see fn.11.
bought to fashion agricultural implements. They in turn received the agricultural products like rice, millets and pulses. Barter was the rule, monetary exchange having little to do with this most primitive of transactions. A more advanced level of transactions was carried out in hats located in the open cultivated area of the plateau. Here there was typically a larger congregation involving various types of functional castes: the weaver, the potter or the blacksmith catered here to a larger catchment area. In 1950, Surojit Sinha counted 63 caste groups that visited Bamni market in Barabhum. There the tribal economy was closer to the peasant pole, as far as regularity of exchange, diverse goods sold and the larger numbers of castes and tribes that congregated there was concerned. In 1885, in the central plateau of Ranchi, in Chotanagpur, the catchment area of a market was between 3 to 6 miles.

The clustering of hats here meant a greater regularity of exchange that was perhaps absent in the more

13. For the system of marketing of iron produced locally and trading practices associated with it. V. Ball "Auranga and Huttar Coal Fields and the Iron Ores of Palamau and Tori" in Memoirs of Geological Survey of India. Vol. XV (1880). See also D.P. Sinha (1962) for an interesting account of a market where the hunting-gathering Birhors sold their products to settled tribal cultivators.

14. Barter has persisted even till now in such inter-tribal transactions. Sinha (1962)


16. Calculated by averaging the distances between villages and the nearest market given in Appendix D, Chotanagpur SR.
inaccessible area of the plateau in the west and south western Ranchi.

Accessibility determined by terrain conditions, density of population, the number of the functional castes, and the diversity of goods produced, all determined the number and density of hats in a region. Where hats were scarce, as in large areas of Palamau, it was the beopari and his pack bullock that served as the link with the outer-world.

The hat, then, was the nodal point of exchange between groups of villages as well as with the wider world. Its supplies were largely drawn from a small catchment area not more than 7-10 miles in radius. But it was also supplied by chains of beoparis and the pack bullock traders. During the harvest season, the hat would be teeming with these hucksters while in lean season, it is evident the supplies dropped and the beopari appeared mainly as a seller of goods. It is through the connection that these beoparis maintained with larger marts as well as with the railheads that the price signals were transmitted to the interiors. It is from the information from the prices prevailing in these remote hats that the shrewd officials in the district headquarters kept their fingers on the pulse of the rural areas as regards food supply.

The method was simple and was described by the Commissioner:

"However, high prices may be, so long as grain is procurable at these interior hats at a lower rate than at the large trade centres, we may safely assume that there is still sufficient supply of food in the country (the difference in prices representing the cost of

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17. For instance, south west of the open cultivated plateau near the Ranchi town, for a tract of about 100 square miles there was not a single weekly market to be found in 1897. See letter of H.C. Streatfield, DC, Ranchi to Commissioner, Chotanagpur dt. 12th November, 1897, GOB, Rev (Agri), 44-45, August 1898.
carriage from the interior to the trade market); but immediately prices in the interior begin to level up to those at the large marts, we may accept it as a sign that supplies throughout the country are running out, and that at least a portion of the population will soon have to depend upon imports for their support*. 

The seasonality of supply in the hats of the interior were so marked that any deviation in the timing of succession of crops could be taken as a warning of disturbances in the supply position of the hinterland*. 

The hat was thus an important point in the network of trade. But we should not overestimate the importance or ability of the network that tied the hats to each other as well as to the large centres. It was a fragile system largely dependent on the hinterland for its supply, bulk of which came not from the traders or beoparis but from the hinterland population who brought their products for exchange. And any dislocation of supplies in the hinterland could lead to a breakdown of the tenuous trade links through the train of pack bullocks, as happened during the famines of the late 19th century. The fragility of the trade network, paucity of good

18. Letter of Commissioner of Chotanagpur, dt. 8th January, 1898, to Secretary, Rev: Dept. GOB, Rev(Agri), 44-45, August 1898, para 18.

19. ibid.

20. It was considered impossible to provision Ranchi district solely by means of the existing traffic of bullock carts and pack bullocks through the major trade route of Ranchi-Purulia road in 1897. It was calculated that the maximum carrying capacity of the traffic on that route was only 1 md/month per 100 population of the district, grossly inadequate for a real famine supply. See letter of H.C. Streatfield, D.C. Ranchi, dt. 12th Nov. 1897, GOB Rev(Agri) 44-45, August 1898.
communication, and the comparatively high cost of cartage remained a feature of the market structure of large parts of Chotanagpur. It indicated a lower level of commercialization and a greater localisation of trade than was usual in the plains of Bengal and Bihar.

Nevertheless, signs of closer integration with the wider market of the eastern region were in evidence over the 19th century. The famines of the late 19th century also helped in integrating the market structure tighter. This is evident from the correlation of average prices of Chotanagpur with the prices prevailing in Calcutta (Table 7.2).

Table 7.2.
Relation between price of rice of Calcutta and Chotanagpur:
1871-1920

<table>
<thead>
<tr>
<th>Period</th>
<th>Coefficient of correlation</th>
<th>Mean Annual price in Chotanagpur</th>
<th>Mean Annual price in Calcutta</th>
<th>Col 3 as % of Col 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1871-1880</td>
<td>0.66</td>
<td>1.71</td>
<td>2.93</td>
<td>58</td>
</tr>
<tr>
<td>1881-1890</td>
<td>0.57</td>
<td>1.73</td>
<td>2.74</td>
<td>63</td>
</tr>
<tr>
<td>1891-1900</td>
<td>0.83</td>
<td>2.73</td>
<td>3.69</td>
<td>74</td>
</tr>
<tr>
<td>1901-1910</td>
<td>0.97</td>
<td>3.54</td>
<td>4.80</td>
<td>74</td>
</tr>
<tr>
<td>1911-1920</td>
<td>0.97</td>
<td>4.92</td>
<td>6.13</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: For Col 3 and 4 Prices and Wages in India 1900 and 1922

The growing consonance of rice price prevailing at Calcutta and Chotanagpur is evident from the stronger decade wise correlation between them. Another fact that is evident from the table is that the price of rice in Chotanagpur rose higher than in Calcutta, being 58 per cent of the former in 1861-1870,
rising to 80 percent in 1911-1920. If the higher
 correlations suggested tighter integration of Chotanagpur to the
 wider regional economy, the rising trend of Chotanagpur price (as
 % of Calcutta price) gives us a clue to the nature of that
 integration. It was mainly by the transformation of Chotanagpur
 into a food grain deficit zone by the early 20th century that
 the integration of Chotanagpur market with the regional and
 national market took place.

Part III: Imports and Exports: 1890 - 1920

3.1 Food Grains

This significant transformation in the nature of
Chotanagpur's relation with the regional economy is brought out by
the comparison of trend of exports and imports of food grains for
the period 1890-1921 from Chotanagpur trade block, carried by
railways. There were 3 significant points of time in which major
extension of railways took place in Chotanagpur. Before 1891,
there were two main railway lines which passed through
Chotanagpur. First was the BNR line connecting Asansol with the
main Bengal-Nagpur line that passed through Singhbhum. The second
line was a feeder line of Eastern Indian Railways connecting
Giridih to Madhupur in Bihar. Both these lines were essentially
built to open up the growing coalfields in Hazaribagh and Jharia.
The next important connection came in 1902 when Barun junction of
East Indian Railways was connected with Daltonganj thus bringing
Palamau into the railway network. Finally in 1907-08, Purulia
and Ranchi were connected by railways. Predictably the imports
and exports carried out by railways got a boost on each of these
dates, as railways displaced the traditional means of carriage by
bullock-carts. The jump in exports and imports figure in these years should be thus interpreted with caution.

Table 7.3

Annual Average Food grain Imports and Exports for Chotanagpur

<table>
<thead>
<tr>
<th>Years</th>
<th>Food grain imports (in '000 mds)</th>
<th>Food grain exports (in '000 mds)</th>
<th>Balance (in '000 mds) (+/-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890-92</td>
<td>108</td>
<td>223</td>
<td>+115</td>
</tr>
<tr>
<td>1893-95</td>
<td>216</td>
<td>49</td>
<td>-167</td>
</tr>
<tr>
<td>1896-98</td>
<td>164</td>
<td>73</td>
<td>-94</td>
</tr>
<tr>
<td>1899-01</td>
<td>255</td>
<td>409</td>
<td>+154</td>
</tr>
<tr>
<td>1902-04</td>
<td>975</td>
<td>278</td>
<td>-697</td>
</tr>
<tr>
<td>1905-07</td>
<td>1322</td>
<td>653</td>
<td>-669</td>
</tr>
<tr>
<td>1908-10</td>
<td>1654</td>
<td>237</td>
<td>-1417</td>
</tr>
<tr>
<td>1911-13</td>
<td>1488</td>
<td>407</td>
<td>-1081</td>
</tr>
<tr>
<td>1914-16</td>
<td>2182</td>
<td>147</td>
<td>-2035</td>
</tr>
<tr>
<td>1917-19</td>
<td>2874</td>
<td>248</td>
<td>-2626</td>
</tr>
<tr>
<td>1920-21</td>
<td>2098</td>
<td>159</td>
<td>-1939</td>
</tr>
</tbody>
</table>

Source: (1) Report on Trade carried by Rail and River in Bengal 1890 - 1911.

(2) Report Trade carried by Rail and River in Bihar and Orissa 1912 - 1921.

In Table 7.3 we have the imports and exports of foodgrains in Chotanagpur trade block for the period 1890 to 1921. It shows clearly the massive deficit in foodgrain trade in Chotanagpur, by the turn of the century. The major items of food grain imports were rice, gram and pulses, wheat flour and wheat, in descending order of value. The major item of food grain export remained rice.
It was in fact a paradoxical situation. In Chapter IV, we have shown that in terms of food grain production, the period 1890-1921 was one of rising trend. How do we explain the contrary results shown up in the net food grain imports?

It must be noticed that, this phase in which the food grain imports shot up saw two significant developments. First was the massive expansion in the coalfields, and the rise of Jamshedpur as an urban complex. The total labour force employed in Jharia coalfields increased 5 times between 1895 and 1921. In case of Jamshedpur the total population in 1911 was 5672, by 1921 the population had increased to 57,360. The rapid growth in these two urban industrial complexes, in our period, largely explains the rise in the total imports of food grain into Chotanagpur. Apart from this, the traditionally deficient district of Palamau also accounted for a substantial proportion of imports of food grain. We cannot however, estimate, the internal distribution of imported food grains since they were not given district wise. But it is more than probable that though Chotanagpur was far better connected with the wider markets outside through the railways, the internal distribution network remained largely unchanged from the late 19th century. It was reported that both Southern Manbhum and Ranchi were large exporters of rice while Palamau and Hazaribagh and the Northern Manbhum where Jharia coalfields was located, were net importers21.

21. The average export of rice from Ranchi district was estimated to be normally around 1,60,000 mds per year. Palamau and Hazaribagh drew most of their supplies from Ranchi and additionally imported quantities of other foodgrains from Bihar. Letter of A.H. Forbes, Commissioner, Chotanagpur to Secretary, Rev, Dept. in GOB, Rev(Agri), 44-45, August 1898.
The Table 7.3 on the import and export of food grains shows that, while imports registered a great increase, the exports declined between 1900 to 1921. There were of course fluctuations from year to year. The high export figures of 3 years of 1905-07 were largely due to a large export of rice that took place in 1906-07, and which was one of the reasons for serious depletion of stocks leading to the famine of 1907-08. But the decline, however marginal, of the export of food grains (mainly rice) suggests a certain change in the direction of trade towards internal market of the urban centres of Jharia and Jamshedpur.

3.2 Non Food Grains

There were 2 major items of non food grains exports. The most important of all was the export of lac and shellac which had emerged as a valuable export commodity of Chotanagpur from 1900 onwards. We shall deal with lac in a separate section. The other major export item was oilseeds.

Table 7.4

Exports of Lac and Oilseeds from Chotanagpur
Trade Block: 1902-1921

<table>
<thead>
<tr>
<th>Years</th>
<th>Lac</th>
<th>Oilseeds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qty in '000 mds</td>
<td>Value in '000 Rs</td>
</tr>
<tr>
<td>1902-04</td>
<td>109</td>
<td>5724</td>
</tr>
<tr>
<td>1905-07</td>
<td>247</td>
<td>15321</td>
</tr>
<tr>
<td>1908-10</td>
<td>371</td>
<td>15624</td>
</tr>
<tr>
<td>1911-13</td>
<td>326</td>
<td>8783</td>
</tr>
<tr>
<td>1914-16</td>
<td>320</td>
<td>6182</td>
</tr>
<tr>
<td>1917-19</td>
<td>231</td>
<td>13559</td>
</tr>
<tr>
<td>1920-21</td>
<td>289</td>
<td>27170</td>
</tr>
</tbody>
</table>

Source: Same as Table 7.3.
In the Table 1.4, the figures of oilseeds and lac exports are given.

There seems to have been definite stagnation in the export of oilseeds over time if we take the figures of 1903-04 as representing the normal level of oilseeds exports from Chotanagpur (the earlier years could not have taken into account the normally large export from Palamau). The trend of exports from 1900 to 1922 thus shows a stagnation of the major traditional export items like rice and oilseeds which of course was more than compensated by the large high-value export of lac and Shellac. Most of the oilseeds was exported to Calcutta, as were other export items like hides and skins, dyes and tans and raw silk. Exports of rice were directed to different regions depending on the relative prices prevailing between Chotanagpur and other region.

3.3 The Problem and the Explanation

The figures of export and import from Chotanagpur, unfortunately do not continue up to the end of our period. The revived Annual rail-borne trade statistics from 1938 onwards give only province wise figures. The figures for the limited years, show certain trends;

(a) The relative decline of food grain exports compared to the massive increase of imports of food grains.

(b) The relative stagnation in the export of oilseeds.

(c) The rising trend of value of exports of lac and shellac.

The problem is how do we reconcile the decline in the trend of food grain exports and a rise in the food grain imports with the data on positive trend in food grain production within
FIG: 7.6

RELATIONSHIP BETWEEN FOOD GRAINS IMPORT AND EMPLOYMENT IN COALFIELDS: CHOTANAGPUR (1902-22)

[Graph showing trends of imports and employment over time from 1902 to 1922.]
FOOD GRAINS - PRODUCTION AND IMPORTS: CHOTANAGPUR
1902-22

(in 000 mds)

Production

Imports

(in 000 mt)
Chotanagpur for the period 1890-1920. The explanation seems to lie in three factors. First, the growing trend of foodgrain production 1890-1920 was accompanied by a high degree of fluctuation. The imports in bad years thus became a structural necessity. The pattern of agrarian demand was relatively elastic with respect to harvest but the demand pattern of foodgrain of these industrial and mining centres were inflexible. Thus imports of foodgrains were necessitated not only in bad years when there was a shortfall in supply from the hinterlands, but also in relatively good years when the increased consumption in the rural hinterland would reduce supplies to the urban centres. It was easier to organise imports to the industrial city from across the borders, than to get the foodgrains brought by the pack bullocks from remote areas of the region which were far from rail heads. It was precisely in bad years that the internal network of trade tended to be dislocated; a large increase in urban demand had to be met mainly by imports. The trends of that of foodgrain production both were upwards during the period 1890-1919 (See fig. 7.6). The imports of foodgrain were usually below the trend value when foodgrain production in the hinterland was above the trend value and vice versa. But the negative relation is weakened because of rise in imports even in good years. The strong relation of imports of foodgrain with the level of employment in the mining centre is evident from fig. 7.7. Infact a comparison of fig. 7.7 and 7.6 clearly show that the level of imports of food grains was more strongly linked to the level of employment in the coalfields than to the internal deficit in food grain production. A bountiful harvest in the hinterland notwithstanding, whenever there was #
large increase employment level the level of imports of foodgrain increased correspondingly.

The stagnation of oilseeds as an export item, thus, has to be considered in the context of rising dependence on lac for cash income as well as the substitution of oilseeds by rice in the crop composition.

Part IV: Structure of Market : Rice, Lac and Cotton

4.1 Interlocked Markets

The degree and extent of commercialization varied between regions. It also varied with the crops grown. Many of the crops grown on uplands viz gondli, marua and maize were much less commercialised, most of these being consumed by the producer himself. On the other hand a crop like oilseed, was very heavily commercialised, with most of it being sold for cash needs of the peasant producers. A crop like lac (though not strictly agricultural) was almost wholly sold and, although low in bulk, it was of a very high value. Rice (even if a miniscule proportion of the total production was sold), constituted the bulk of marketed crops. The structure of marketing and the degree of involvement of the peasant producer in the market also varied with the crops. In some of them, the merchants and traders controlled the production through various systems of advances.

In others a more or less free market situation prevailed. An important formulation of the market participation of peasants in a backward economy has been that of 'forced commercialisation'. According to this thesis the majority of

22. Roughly 35 to 40 per cent of the crop of oilseed was exported by railways. See Table 7, and Table 12, Appendix I. rough The total amount of oilseed which was sold would be higher than this figure.

peasantry participated in the market under the burden of indebtedness. Unlike the 'free commercialisation' process where the peasant participate largely for 'gains of trade', the peasant reeling under debt burden is forced to sell his produce not because he anticipates profits from it, but because he has to make interest payments. Thus he often sells his produce under the most adverse price conditions. The market for produce and the credit market being interlocked, the peasant often sells his produce to his own creditor. It is thus that the participation of peasants in market was explained in Orissa and Bengal. There have been attempts also to generalise the model and to extend its application to the highly commercialised districts of Punjab.

The 'forced commerce' model is successful in explaining the almost universal phenomena of seasonal pattern of marketing of produce. The indebted peasant usually sold bulk of his output immediately after the harvest when the prices are the lowest, and he was forced to buy back the produce in the lean season when the prices were the highest in the season. There is no doubt that historically a major form of market penetration had taken place in the manner described by the model. In this the payment of rent or revenue in terms of cash has often had a major role to play. Structurally, peasant economies once integrated with the market become subject to seasonal pressures of cash needs. The difference between 'production time' and working time has been used by Amin to explain endemic indebtedness of the

eastern UP sugar-cane growers*. There are two aspects to the question. First, the level of market dependence of the peasants, not only for production needs but also for consumption needs. Secondly, the extent of produce which was sold under the compulsion of debt or other coercive mechanisms like ‘dadan,’ or in short, the extent of interlocking of the produce market and the credit market. We shall in this context take up 3 crops namely, cotton, rice and lac and investigate the process of marketing of these crops.

4.2 Cotton: A 19th century case of 'Forced Commerce'

Around the 1860's, cotton cultivation was at its peak in Chotanagpur. Cotton was mainly cultivated in Palamau district, largely by a form of jhuming called daha. In 1864 an impressionistic account of cotton cultivation is all that has survived of this once important crop. From it we know that cotton along with 'oilseeds' had emerged as a major cash crops of the district. The Palamau raiyat habitually referred to his cultivated holding as til-kepas. The importance of cotton cultivation became more with the cotton boom of 1860-64, during which the Government decided to build a road connecting inaccessible Palamau with Sherghatty and Benaras. Named the "Behar-cotton road", its unfinished state in 1875, pointed to the short lived interest of the colonial state which waned with the decline of the cotton boom. There are no accurate estimates of the extent of the cotton cultivation or the amount of produce which was sold. Forbes mentions 9600 acres spread over 1600

villages as the approximate area of cotton cultivation. 28,000
maunds of cotton produced in the district was exported annually.

How was this important cash crop carried to the
market? The whole mechanism relied on the perpetual indebtedness
of the cultivator. Cotton was never marketed in the 43 weekly
bazars of Palamau district, instead the mahajan and the beopari
with the pack bullock carried the cotton from the field itself. It
was also found by Forbes that there were many landlords who took
active part in the trading of these cotton:

"There is scarcely a single individual in
Palamau who has not got what he calls his sahu, i.e. one to whom he applies for small
loans. The sahu ordinarily means a trader but
in this case the sahu need not be a mahajan;
many landlords are sahus"."28

The general indebtedness of the peasants of Palamau was evident
to Forbes. The cultivators were so poor that they often had to
borrow plough cattle from their landlords on a system called
buha by which they agreed to surrender a fixed amount of produce
to the landlord. Apart from borrowing money for cultivation
expenses, seeds, consumption loans were quite common.

"Before every harvest the people apply to
the moneylender for loans to carry them on
till harvest times come. The interest demanded
ranges from 8 annas or 3 per cent per month.
Payment in kind at a fixed rate is stipulated
and sometimes half of the loan is to be paid
in kind at certain rates and the other half in
cash"."29

28. Palamau Government Estate Sr para 434. "...Almost every
landlord in the paragana is more or less engaged in moneylending
business known as len-den

29. ibid
A Kharwar wishing to cultivate cotton visited his mahajan to get a loan. The condition was that repayment was to be made by delivery at harvest time certain amount of cotton at 30 seers and sometimes at 40 seers per rupee valued (the market value of which was Rs.3-8-0 to Rs.4-0-0). When the harvest came the sahu or his agents appeared with pack-bullocks to carry off his cotton. If the stipulated amount of cotton was not delivered, even the small quantity that had been harvested was seized and credited as a loss on account of the potential profit the moneylender would have made. The loan remained intact till the next harvest. The conditions remained the same, interest at compound rate were added. When cotton production was deficient an equivalent value of other grains were seized. When a loan of Rs. 4 had been taken on condition of delivery of 48 seers or one maund of cotton per rupee, the market value of 4 maunds of cotton was Rs.16. If only one rupee worth of loan had been repaid the sahu did not take Rs. 3 worth of other crops but Rs. 12 worth of til, urid, or rice.

Cotton trade was thus carried on by the system of advances. It is presumable that the cotton boom passed by without the cultivator getting any profit at all from the rise in prices. The thral of indebtedness was so great that Forbes thought that the marketing of all commodities, whether ghee made by the ahir herdsman, til the main oilseed crop of the district, and the little quantity of rice that was marketed were all carried away under the system of advances. When not given in this form of advance, interest on petty loans were always paid in kind. For instance, there was the widely prevalent system of chara and seri loans. In the former, the principal was paid in cash and the
interest in terms of produce (cotton or til) at a stipulated rate. In the latter form of loan, a seer of salt or tobacco was lent to the cultivator which was repaid by a maund of grain or oilseed or cotton at harvest time.

As we mentioned earlier, marketing in Palamau was carried out under the mechanism of indebtedness. Once the cotton boom passed, the mahajan having already strangulated the cultivation of cotton, promptly withdrew support for cultivation of this crop. With that, the cultivation of cotton went into a steep decline (see Chapter III).

For Chotanagpur then, the above form of marketing represented the classic example of 'forced commerce'. The major feature of this form of marketing was perpetual indebtedness of the peasantry; their subordination to usurious capital on one hand and the landlords on the other; the dependence of a large section of the peasantry on the highly personalized market for both means of production (land and plough cattle) and means of subsistence (consumption loan and advance system). The market for both was dominated by landlords and mahajans and there was considerable interlocking of market for credit and produce.

4.3 Rice: The Market for Staples

We next take up rice. Rice was mainly sold by the cultivators as paddy, rarely was it dehusked. Shop keepers, traders and mahajans sold rice after the paddy had been dehusked. While 35 to 40 per cent of the oilseeds production was exported out of the Division, less than 1 per cent of the rice crop was ever exported. The export figures do not adequately reflect the total amount of rice which was marketed in the region, since the chief factor of rice marketing was its extremely parochial nature.
A large proportion of the marketed rice was sold and bought at the level of primary markets or hat. The Banking Committee's estimate in 1929, of the amount of rice sold at various levels of the market in Bihar showed that of the Rs. 20 crores worth of rice sold at the level of the primary market or hat, only Rs. 5 ¼ crores worth of rice reached the level of the secondary market or rural mart, and finally only about Rs. 1 crore worth of rice reached the large market towns from which it was exported. Compare this to the marketing of oil seeds: of the Rs. 8 crores worth sold at the primary market level, Rs. 7 crores went to the secondary mart level and Rs. 3 ½ crores worth was exported the market towns.

Marketing of rice presented an interesting contrast also to the other major staple i.e. wheat. The Rice Marketing Committee, of 1941, repeatedly stressed the differences in the structure of marketing of these two crops; (a) in the marketing of rice, there were no large points of assembly in contrast to wheat where large mandis existed throughout North India, (b) wheat was regarded as a major form of investment in the whole of North India, and the large commercial centres of Bombay, and Central India. This had led to a complex structure of marketing at the apex of which was the 'Forward or Futures market'. Which led to a great deal of standardisation of quality, long distance trading and holding of stocks in anticipation of profits. None of the above features were present in rice marketing structure.

Secondly, there is no reason to believe that the localised marketing of rice had led to severe price fluctuations in the case of rice. In fact, the seasonal fluctuation of rice prices were less than that of wheat. Finally, it is not to be presumed that the difference in prices prevailing between the village, the rural market and the market town were in any case enormous, or that a large amount of profits were made in trading of rice between these three levels. In January 1930, the Banking Commission, made a special enquiry in 74 villages, 27 rural markets and 16 large markets of Bihar and Orissa as to the differences of prices prevailing between them. After taking into account the cartage charges, handling and assembling charges at the markets, the difference in price between the levels of market was merely one anna per maund of rice.

The general feature of rice marketing in Bihar and Orissa, was fairly simple. There were only three stages of marketing. The first was the beopari or faria who collected the rice from numerous hats, or from villages. The beopari sold the rice to a dealer in the rural markets who in turn sold it to the merchants who exported or held large stocks in the big markets.

32. Report on Marketing of Rice in India (1941), p. 151. In rice prices the range of fluctuations between the highest and the lowest price of season (provincial averages) varied from 9.5 per cent to 2.75 per cent. For wheat the range was 13.5 per cent to 5 per cent. We must not however discount the fact that the fluctuations at the village level were of a much higher range than at the market level. But this applies equally to both the crops. N. Bhattacharya's interesting study of price variation between the Village and Mandi for wheat showed that the range of fluctuations in the former were much greater than in the latter. See Bhattacharya (1986) Chapter VII.

33. RPBECBO Vol I, p. 162
This simple structure of marketing of rice should be contrasted with the complicated structure of market of lac that we shall discuss later.

Diagram 1

Structure of Market

<table>
<thead>
<tr>
<th>Merchants</th>
<th>Exporters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer</td>
<td></td>
</tr>
<tr>
<td>Beopari</td>
<td></td>
</tr>
<tr>
<td>Producer</td>
<td></td>
</tr>
</tbody>
</table>

Level of Market

- Tertiary market (large towns, rail heads)
- Secondary market (rural markets)
- Primary market (village or hat)

The market structure described above, only shows one way flow of rice from the producer to the merchant. An important element of marketing was the counter flow of rice from the merchant down to the producer. It is in fact the existence of this counter flow at the lowest level in the primary hat or often the village level, that complicated the pattern of rice marketing to some extent. The 'forced commerce' thesis, rightly, stresses this flow and counterflow at the village level as the primary feature of marketing under the burden of indebtedness. In a sense bulk of this exchange never entered the market proper, if the major form of debt was in grain loans, being adjusted in the credit and debit accounts of the moneylender and the raiyat. In the case of cash loans the system of hypothecation of crops ensured a significant proportion of the marketed crop going to the
creditor. This happened when the produce and credit markets were interlocked.

A few points emerge from the above data. The Banking Commission's village enquiries established that there was a distinct pattern of seasonal borrowing. Most of the loans whether cash and grains were taken during the months of June - August, and were repaid between December and February\(^3\). These coincided with the sowing and harvest time of the paddy crop. So it is evident that the repayment schedule of loans was linked to selling of produce immediately after harvest. The seasonal pattern of sale of paddy was not always due to indebtedness alone. In village Tungaon in Ranchi, only 14 households of a total of 64 were indebted, yet every household sold its produce immediately after the harvest\(^5\). The demand for rent, as well as other annual purchases of clothes, implements, cattle or even social needs like a marriage (which took place generally immediately after harvests) or a funeral ceremony, all these necessitated sale of produce immediately after harvest.

If the seasonal pattern of sale of the harvest of crop was extremely common, much less common was the other element of 'forced commerce' thesis i.e. the sale of the produce at a price far below the seasonal low to the creditor. In any case there were considerable regional variations.

The system of advances, or sale of produce to the creditor was not the practice in Ranchi district. The cultivator

\(^3\) See \textit{RPBECBO} Vol III, pp. 116,122,126,132, for evidence of seasonal borrowings in Chotanagpur.

\(^5\) Village survey of Tungaon 65 (Karra), Ranchi \textit{RPBECBO} Vol II. p. 825.
usually sold his produce, in the nearest hat^[36]. Most of the village enquiries established the fact that in Ranchi district, paddy or other produce were not sold to the creditor of the cultivator^[37].

In Palamau, around 1864, almost the entire rice crop was given to the landlord in lieu of rent; but by the 1930s the system of dadni was very much prevalent^[38]. Here, the oilseed crop was almost totally sold under the advance system^[39], and the situation described for the cotton market of 1860's, had changed but little in the 1930's. The cultivator did not get an open market to sell, the creditors carrying off most of the crops under the system of advances^[40]. In Hazaribagh, a slightly modified form of marketing through loans in the chara system was prevalent in one or the two thanas in which the interest alone was paid in paddy at a rate fixed at the time of borrowing. The system of dadan advances for paddy loans were also to be found in Hazaribagh district in the Chhatra subdivision^[41].

36. See evidence of Father Liefman, Director, Catholic Cooperative bank, RPBECBO, Vol. II, p. 670. Also evidence of T.P. Ghosh 'there is no widespread arrangement by which the moneylender forces his debtors to sell crops at a lower price than at the market rate' in ibid, p. 700.

37. See the 'Notes on village enquiries' in ibid, p. 825, also RPBECBO Vol. III, pp. 118, 123, 132.


40. ibid, p. 736.

4.4 Lac: The World Market and the Tribal Economy

After agriculture, lac production was the single most important occupation, for the people of Chotanagpur. As one witness before the Banking Commission put it, "The lac industry in Chotanagpur was even more important than the entire coal business of India". Another official said lac growing was more important in the Palamau District than the rice cultivation during 1896-97.

Till the 1940s India held absolute monopoly over the world market for lac and shellac. Almost wholly exported, lac and shellac emerged as a major export commodity after 1890s. At its peak in the year 1922, roughly 3% of the total value of exports from India was got from lac (i.e. worth about Rs 10 crores). The five districts of Chotanagpur had around 60 per cent share of the total lac production in India i.e. from 1918-19 to 1949-50. The raw material from which shellac was produced was stick lac or biuli. Shellac was widely used in electrical.

42. In 1929 the lac business was estimated at Rs. 2.5 crores. See RPBECBO, Vol. III, p. 134.

43. 'Palamau Government Estate Rate Report' in 'Palamau Settlement Papers (Commissioner's Record Room Ranchi). Hereafter called 'Palamau Rate Report'.

44. Shellac is produced after processing sticklac. Lac was the dirty red resinous substance secreted by the insect Laccifer Laccae which is planted on the host tree. The life cycle of the insect consists of (a) swarming i.e. when the young larvae emerge from the thick encrustation of lac, (b) the young larvae then proceed to feed on the shoots of the host tree and secrete lac, (c) the female then mates with the male and secretion becomes rapid now. The eggs are oviposited in the shell around the body of the female after the female dies. This life cycle is repeated twice in a year. Lac is usually harvested just before the swarming period by scraping the encrustation from the branch. A portion of the crop is left to provide the brood for the next harvest. A host tree can be continuously cultivated for three years after which the lac has to be set in a different tree.
insulation and later in the gramophone records industry. Prior to the wide use of shellac, lac was mainly exported as an important dyeing reagent and was also used for varnish. The domestic consumption of lac was restricted, being exclusively for the manufacture of lac dye and making of lacquer bangles and toys. Domestic consumption had a negligible share in the total production.

Table 7.5
Average annual exports of Lac from India

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports (in tonnes)</th>
<th>Index</th>
<th>Value of exports (in '000 Rs)</th>
<th>Index</th>
<th>Price/tonne (in Rs)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890-94</td>
<td>6956</td>
<td>100</td>
<td>9369</td>
<td>100</td>
<td>1347</td>
<td>100</td>
</tr>
<tr>
<td>1895-99</td>
<td>10486</td>
<td>151</td>
<td>11867</td>
<td>127</td>
<td>1132</td>
<td>84</td>
</tr>
<tr>
<td>1900-04</td>
<td>10878</td>
<td>156</td>
<td>18456</td>
<td>197</td>
<td>1697</td>
<td>126</td>
</tr>
<tr>
<td>1905-09</td>
<td>18420</td>
<td>265</td>
<td>32659</td>
<td>349</td>
<td>1773</td>
<td>132</td>
</tr>
<tr>
<td>1910-14</td>
<td>19832</td>
<td>285</td>
<td>19684</td>
<td>210</td>
<td>993</td>
<td>74</td>
</tr>
<tr>
<td>1915-19</td>
<td>17259</td>
<td>250</td>
<td>37201</td>
<td>395</td>
<td>2133</td>
<td>158</td>
</tr>
<tr>
<td>1920-24</td>
<td>21326</td>
<td>307</td>
<td>84754</td>
<td>905</td>
<td>3974</td>
<td>295</td>
</tr>
<tr>
<td>1925-29</td>
<td>30823</td>
<td>443</td>
<td>69841</td>
<td>745</td>
<td>2266</td>
<td>168</td>
</tr>
<tr>
<td>1930-34</td>
<td>27318</td>
<td>393</td>
<td>23738</td>
<td>253</td>
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<tr>
<td>1935-39</td>
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<td>516</td>
<td>18645</td>
<td>199</td>
<td>520</td>
<td>39</td>
</tr>
<tr>
<td>1940-44</td>
<td>23560</td>
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<td>37302</td>
<td>398</td>
<td>1583</td>
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</tr>
<tr>
<td>1945-48</td>
<td>26619</td>
<td>386</td>
<td>94617</td>
<td>1010</td>
<td>3528</td>
<td>262</td>
</tr>
</tbody>
</table>

In Table 7.5, we have the figures of the total export of shellac from India in tonnes and the estimated value of exports from India from 1890 till 195045.

While lac export figures are available from the late 19th century the earliest estimate of lac production is for the period 1918-19 to 1920-21. This is when the first authoritative monograph on lac was written by Lindsay and Harlow46. Thus the average figure for 1919, 1920 and 1921 for India was estimated at about 11,00,000 maunds. According to Lindsay and Harlow's estimation the lac production in Chotanagpur division was normally 5,64,500 maunds. There is reason to believe that this estimate of production in Chotanagpur was heavily underestimated. In Chotanagpur division the most important district for cultivation of lac was Manbhum, followed by Palamau, Ranchi, Singhbhum and Hazaribagh, in descending order of importance. From 1928-29, the figures of the all India production of lac is available. The districtwise distribution is available from 1934 onward given in Table 7.6.

A brief mention may be made here of the condition of production of lac. The first point is to be noted is the extreme variability of production from year to year. One of the reasons was that the cultivation of lac crop was very sensitive to weather fluctuations. Failure of crops in half the trees on which lac was grown was the rule rather than the exception. A British official enquiring into the lac cultivation in Palamau wrote, "The risk of growing lac is great; the seed often dies

45. As a rough guide one third of the price of shellac is taken as the price of sticklac. On an average about two maunds of stick lac produced one maund and a little more of shellac.

46. Lindsay and Harlow (1921).
### Table 7.6

<table>
<thead>
<tr>
<th>Years</th>
<th>India</th>
<th>Chotanagpur</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manbhum</td>
</tr>
<tr>
<td>1928-33</td>
<td>40718</td>
<td>-</td>
</tr>
<tr>
<td>1934</td>
<td>38134</td>
<td>9665</td>
</tr>
<tr>
<td>1935</td>
<td>40666</td>
<td>9221</td>
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<td>59699</td>
<td>18644</td>
</tr>
<tr>
<td>1937</td>
<td>46468</td>
<td>9607</td>
</tr>
<tr>
<td>1938</td>
<td>53765</td>
<td>10102</td>
</tr>
<tr>
<td>1939</td>
<td>50781</td>
<td>10948</td>
</tr>
<tr>
<td>1940</td>
<td>44953</td>
<td>7164</td>
</tr>
<tr>
<td>1941</td>
<td>51980</td>
<td>13005</td>
</tr>
<tr>
<td>1942</td>
<td>50604</td>
<td>11407</td>
</tr>
<tr>
<td>1943</td>
<td>30738</td>
<td>7807</td>
</tr>
<tr>
<td>1944</td>
<td>35354</td>
<td>7843</td>
</tr>
<tr>
<td>1945</td>
<td>41388</td>
<td>9699</td>
</tr>
<tr>
<td>1946</td>
<td>64076</td>
<td>15305</td>
</tr>
<tr>
<td>1947</td>
<td>35644</td>
<td>8616</td>
</tr>
<tr>
<td>1948</td>
<td>30389</td>
<td>5797</td>
</tr>
<tr>
<td>1949</td>
<td>42845</td>
<td>11095</td>
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</tbody>
</table>


From excessive heat in bhado also in chait. Fog is harmful to lac and cloudy weather and lightning injurious and destroy most of the crop. Frost and excessive cold is also harmful for the crop. Unfortunately, the principal lac growing and harvesting

47. 'Palamau Rate Report' Chapter XVI.
season often had the above harmful conditions in abundance. Lac was harvested in the months of April-June and October-November. But if one discounted the inclement weather of these seasons, it is evident that lac crop was grown and harvested during the agricultural lean season. It thus provided the cultivator with the much needed cash income during the lean periods of the year.

The importance and popularity of lac growing can be gauged from the estimate in 1925 for Manbhum district. The settlement officer, after scrupulously counting the number of trees on which lac was grown came to the conclusion that roughly 5 Lakhs Ber trees, 6 Lakhs Palas trees and 30,000 Kusum trees were under cultivation, or a total of 11,30,000 trees were growing lac in 1925 in Manbhum. If we assume that a maximum of 10 trees was grown per cultivator, then roughly 1,13,000 cultivators would be involved in lac cultivation. In Manbhum, we find that there were 2,50,000 raiyati tenancies. So at least 45 per cent of the tenancies had lac cultivation as a side industry.

Most producers grew lac on a small scale, on trees on their own holdings, or on those in the village wastes and jungles. The problem of guarding lac deterred the cultivators from growing lac in the trees far from their household. With deforestation, the possibility of lac production were restricted, and zamindars charged rent on trees on the wasteland. With the lac boom after 1890 zamindars increased their demands. In the high

48. In most of host trees major harvest was in the summer months called Baisakhi and the minor harvest was in winter called Katika. The harvest on Kusum trees was in the month of February called Aghan and the minor harvest in the months of June-July called Jethwi.
rent zones of Palamau and Hazaribagh, cultivators even lost their rights on trees in their own holding. In Hazaribagh, the rent on lac had assumed a share-cropping character49.

The structure of rights on trees growing lac reflected the existing structure of property relation in Chotanagpur. Predictably in Palamau and Hazaribagh where landlordism was rampant, the tenants had very little rights on trees even on their own holdings and landlords had crystalized their demands into high rents. In Ranchi, Manbhum and Singhbhum where tenants had stronger rights, the decision about lac growing was much more in the hands of the tenants; they could decide to plant lac as and when they found the market favourable, rather unlike Palamau where tenants were often forced to grow lac even when it was economically unfavourable to them.50.

Lac market was by all accounts extremely volatile and was a major source of speculation for the big brokers of Calcutta. A study of the shellac prices from 1880 to 1920 (the period for which we have actual quoted price) showed that the range of fluctuations was very high (300 per cent). Not only did the prices fluctuate from year to year, even within a year the prices were subject to extreme fluctuations.

The extreme fluctuations of the shellac market was usually demand induced, and was independent of the production condition of lac. The lac marketing structure, developed in

49. Lindsay and Harlow (1921). p. 49. Landlords of Chhatra subdivision the largest lac growing area of the district took away 7/8th of the crop.

50. 'Palamau Rate Report', Chapter XVI.
response to the severe fluctuation in prices. There were three stages of lac processing in the internal market. First lac was produced as a raw material; then in factories it was made into shellac and other byproducts like button lac and seed lac. Finally the exporter at Calcutta shipped the shellac to the London market.

A simple diagram illustrates the 3 steps through which lac passed into the world market.

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Diagram 1

EXPORTERS

MANUFACTURERS

PRODUCER
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This simple diagram is merely the skeleton of a complex structure, and at each stage there were middlemen of various kinds. The first link between the producer and the market was the itinerant trader:

"... equipped with a cart or a few packbullocks, he moves from village to village selling salt and other commodities and buying up local products of which lac in one. With the aboriginals living in the depth of the jungle - barter is the usual mode, so many seers of salt for lac.... The Beopari is usually a man of small means and is frequently financed by the Arhatiya who retains a lien on the lac and has the right to arrange for its sale." \(^51\)

Sometimes the beopari collected lac from the hinterland of a local **hat** and put it up for sale at the **hat** - his task being that of a collector of lac from a widely dispersed set

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51. Lindsay and Harlow (1921), p. 82.
of producers. In Palamau, the lac when harvested was generally sold to the travelling mahajan who carted the lac to a large mart like Garhwa.

These mahajans in the majority of cases paid a fees to the landlord for the rights to do business in his estate. The cultivators near a hat often carried their lac to the weekly hat. In the Ranchi district in the 1930's lac was sold in about 100 hats which comprised roughly half the hats of the district. The buyers there were the paikars, who in Ranchi worked on commission basis charging roughly 8 to 12 annas per maund. The paikars of Manbhum worked independently, selling the lac in the big markets through arhatiyas. The arhatiya was described by Lindsay and Harlow in the following terms:

"The centre of the whole system and up-country distribution is the Arhatiya, a man of substance, shopkeeper, moneylender, agent and auctioneer and lac brokering is usually only one of his jobs. He is purely an agent and never actually owns the lac which passes through his own godown, but sells it on a commission basis. He takes commission from the seller at percentage (about 1%) and from the buyer at about Rupee 1 per maund of lac".

Arhatiya was a key figure in the lac trade also because he usually financed the lower level paikars. The manufacturers bought the lac stored with the arhatiyas through another set of middlemen called brokers or agents who charged a small fee of 1 anna per maund and 2/3 chittacks of the lac called chalisa (referring to an obsolete practice of 1 seer/maund). These

52. Palamau Rate Report Chapter XVI
53. Lindsay and Harlow (1921) p.83.
55. ibid. p. 137.
agents apparently were necessary for detecting adulteration and quality of lac. Often another set of speculators or dealers would buy and store lac to sell during a favourable upswing of prices.

The method of sale differed in different districts. Sometimes it was through an open auction, where the buyers inspected the lac offered by the arhatiyas and made their estimation of the value. But the commonest method was the cloth method of secret auction. The arhatiya, the sellers and the buyers all sat in the middle of a ring; their hands covered by a cloth. Bids were made to the arhatiya and conveyed to the buyer by him through a secret sign of hand grasps. When the sale was completed, the arhatiya signified the fact by whipping away the cloth and throwing a handful of lac into the lap of the successful bidder.

A study of the differences between the price at the shellac factory and the primary hat showed a difference of 30 to 40 per cent in prices. The hosts of middlemen thus took up a large portion of the selling price of lac. The large manufacturers and firms tried to eliminate these middlemen and purchase lac directly from the producers. But as Raibahadur Thakurdas, (a large factory owner of Ranchi who annually bought Rs. 5 lakh worth of lac) said that the factory owners can't eliminate these middlemen because it was too troublesome and

56. Palamau Rate Report, Chapter XVI.
57. Lindsay and Harlow (1921), p. 83.
58. Ibid.
59. Lindsay and Harlow (1921) p. 85.
expensive for them to buy directly from the hat. Thus the dispersed and petty character of production was a major reason for the entrenchment of the middlemen in the lac trade. One of the means adopted by the large manufacturers to eliminate middlemen was to open branches of lac factories in the lac producing areas. Initially the major centre of lac manufacturing was in Mirzapur, where roughly 40 per cent of the total stick lac production of India was converted into Shellac in the decade prior to 1900. But by 1920's the proportion had declined to 25 per cent. Simultaneously a large portion of the stick lac tended to be converted into shellac in the lac producing areas itself. Thus Balarampur and Jhalda in Manbhum emerged as the largest manufacturing centres of lac in the country. In 1909, there were 109 regular factories employing 6000 people in Manbhum, and Ranchi. In the small town of Bundu, there were 37 factories at work in 1917. Many of these factories were mainly seasonal establishments appearing and disappearing with upswings and downswings of shellac prices. Thus it was not uncommon in Jhalda for even tailors to turn into shellac manufacturers during the lac season. Capital needed to start a stove (bhatta) was small, and production time was not long (15 days). In 1940, about the end of the period of our study, the total number of factories and the number of stoves operating in each district were as follows.


61. Manbhum DG (1909), p. 185. Jhalda and Balarampur grew immensely in stature at the expense of Mirzapur not only due to their location in lac producing areas of Chotanagpur, but also on account of railways which passed through Jhalda and Balarampur, but was far from Mirzapur.


Table 7.3

<table>
<thead>
<tr>
<th></th>
<th>No. of Factories</th>
<th>No. of Stoves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manbhun</td>
<td>111</td>
<td>1,339</td>
</tr>
<tr>
<td>Singhbhum</td>
<td>10</td>
<td>163</td>
</tr>
<tr>
<td>Ranchi</td>
<td>68</td>
<td>172</td>
</tr>
<tr>
<td>Palamau</td>
<td>27</td>
<td>479</td>
</tr>
<tr>
<td>Total in Chotanagpur</td>
<td>216</td>
<td>2,793</td>
</tr>
<tr>
<td>Total in India</td>
<td>352</td>
<td>4,993</td>
</tr>
</tbody>
</table>

Source: Report on Marketing of Lac in India, 1941

Thus roughly 60 per cent of the total factories and the stoves were in operation in Chotanagpur. This proportion closely matched the share of Chotanagpur in the total production of lac in India.

In Jhalda the manufacturing business was completely in the hands of the Armenians who were reportedly employing mechanical crushers and meshers for efficient manufacture*. In Balarampur as well as other centres of manufacture, the manufacturing as well as dealership of lac was in the hands of marwaris and banias.

The manufactured shellac was exported overseas through the exporters. Three quarters of the total trade of lac export

64. Lindsay and Harlow (1921), p. 128. A.M. Araton, an Armenian firm of shippers and exporters was the biggest lac manufacturer of Chotanagpur with factories at Jhalda and Muru in Ranchi RPBECBO Vol III, p. 134.
was done through the system of forward delivery i.e., the exporters contract with the large lac brokers of Calcutta for delivery of Shellac at a certain price on a certain date. If the prices were above the fixed rate, the shippers profited, and if they were lower the manufacturers gained. The brokers were an important feature of the forward trading system; they not only perform ordinary brokerage, they also finance the sellers (manufacturers) making advances against goods. They also undertake some risk by shouldering the fluctuation in prices. Hundis were drawn by brokers in favour of the local bankers who advanced the money temporarily to the manufacturers. The rate of discount of such hundis were extraordinarily high (12 annas per cent). Thakurdas, the Ranchi lac manufacturer thought that this was because of excessive shortage of money during the lac season, two short periods of 3 months duration, during which lac is bought, sold and manufactured in the lac area.

In this description of the market of lac, we see that the skeletal structure of the diagram is hardly sufficient. The whole structure can be represented in the following diagram. (See diagram 3).

We may note certain points in the above account of the market structure. First, in spite of such an elaborate structure of middlemen there was no evidence at all of the

65. Lindsay and Harlow (1921), p. 85.
67. ibid pp. 109, 110.
merchants/manufacturers taking control of the production process and of raw material directly (excepting a few minor exceptions like the firms of Shaw Wallace). Neither is there any evidence of the merchants/manufacturers having control over the lac production indirectly, for example through a system of advances or through the mechanism of debts (there is no evidence that there was anything comparable to the forced commercialisation model). By
all accounts there was nearly a free market situation at the primary level*. One would expect, given the large volume and value of the lac trade, the merchants to reduce their risks typically through control over raw lac production. Such reluctance on the part of merchant/manufacturers was surprising. Given the high degree of fluctuations of the price of Shellac, the following reasons for lack of merchant capital penetration into the labour process may be advanced.

(i) One reason, of course, was the tremendous annual fluctuation of the harvest. (We have cited evidence of it earlier and we can establish it later). Secondly, the character of production was scattered and based on family labour of the cultivators. As they would have the lac planted on trees in their homes rather than in any cultivated lands, often obviating the necessity for employment of hired labour for various operations connected with lac cultivation. As T.U. Bridge showed in his careful calculation, given the extreme fluctuation in prices, it was impossible for an enterprise based on capitalist principles to cover the wage cost in years of price crash. Since wage cost would be far more stickier than price, it is easy to see why the risk associated with direct organisation of production would deter merchants/manufacturers. That is why, after the passing of

68. Note of village enquiry held at Murhu on the 28th September 1929, RPBECBO Vol III, p.122. But again the singular exception of this was in Palamau. T.U. Bridge noticed cases of merchants and beoparis taking advantage of the lack of market intelligence on the part of the producers who often did not communicate the correct prices prevailing in the market. See Palamau Rate Report Chapter XVI. Also the lone evidence of the system of advances being used to gain control over raw lac is from the Palamau district. "As soon as crops are ripe for harvesting the growers get advance from the dealers who then proceed to take possession of the crop." Evidence of C.C. Chatterjee, manager Palamau ward estate RPBECBO Vol. II, p. 725.
Chotanagpur Tenancy Act of 1903 and 1908, it became difficult to acquire ownership rights over jungles (though leasing of private jungles was possible), the continuing conflicts which the restrictions on customary rights of the village community would have entailed could also be another factor deterring the entrepreneurs from developing plantations.

Finally, the mechanism of advances. Such a system of advances to control supply of raw material can only operate in a situation where the producer is wholly or to a very large extent dependent on the earnings through sale of the product in question (either for subsistence needs or for fixed cash requirements for payment of debt, etc.); or if the producer is completely in the clutches of the creditors/moneylenders (in that case he is only a wage labourer with the advances constituting the wage fund). In Palamau, and northern Hazaribagh the domination of landlord was complete over the producer who was dependent to a high degree on the landlord for his subsistence requirements including even the primary means of production land/ bullocks/and consumption loans. It is not thus surprising that the system of advances in lac production worked only in these two regions.

Conversely, one can infer that the relative absence of direct or indirect control over production process on the part of the merchant/manufacturer showed that producers were relatively free or in other words their means of subsistence (ie means of production included) were under their own control.

Part V Supply Response to Price: Rice and Lac:

We have in the first section of this chapter, shown the contrasting determination of price in case of rice and lac. In case of rice, the trend in price in Chotanagpur was determined
primarily by the trend in All India prices. While the fluctuations in the price level were largely determined by the fluctuation in the harvest. In case of lac, the price was as we have shown, determined by the pattern of world demand. The state of inventory in London Warehouses determined the price ruling in Calcutta, and that in turn determined the price prevailing in the lac markets of Chotanagpur.

5.1 Rice: The Subsistence Ethic

We first take up the supply response to rice prices. The supply response to rice prices should be reflected in the shifts in the acreage sown. But since we do not possess an adequate series of area sown under rice we can not determine to what extent the annual shifts in acreage of rice were due to price changes. But considerations on apriori grounds would show that the shifts in rice acreage were not affected by price changes. Here we might recapitulate the discussions on determinants of expansion of rice acreage in Chapter III. There we had shown that the primary impulse for expansion came from the demographic expansion. As population increased, the tendency was to increase the area under food crop mainly to counteract the tendency for per capita consumption to fall. Rice was the most productive of food crops. Thus in order to increase food supply the most adequate means was the expansion of area under rice. This was the major reason for the rapid expansion of area of Don lands between 1880 and 1950, all over Chotanagpur. Here we do not consider the consequences of such a shift which often led to severe fluctuations in the food supply. There is also reason to believe, that the annual rice acreages changed less due to price changes.
than due to the climatic conditions. As about long term shifts, the expansion of rice acreage often at the expense of other food grains and oil seeds grown on Tann land, was not justified by changes in relative prices. That is the prices of crops like wheat and maize and oil seeds increased faster than that of rice during the period 1904-1950. The conclusion then was that the major reason for shift to rice cultivation was the desire of the cultivator to increase the food supply of the family. Each acre of rice area gave 1.6 times more food supply than other food grains, which it displaced. Thus in its preference for rice cultivation, the cultivator was motivated not so much by price considerations as by the 'subsistence ethic'. A careful calculation according to the market prices would have perhaps shown that the cultivators were better off if they abandoned rice cultivation and instead took up cultivation of other crops whose prices were higher and had instead bought all the rice they wanted from the market. But the calculation in terms of subsistence needs was quite different from the maximising behaviour operative in the market. In the case of rice, production remained independent of price for the whole period of our study. In fact till 1928 it was price which remained dependent on production.

69. Dharam Narain came to this conclusion regarding changes in acreage under rice for the whole of Bihar and Orissa. See Narain (1965)

70. See, Chapter III. Supra

71. This is calculated by taking into account only the difference in the normal yield of rice and other food grains as estimated by us for the period 1900 - 1948. But the yield of rice was higher than other food grains by a larger proportion, if we take the average yield for the period 1900-1948.
5.2 Lac : The Market Response

In case of Lac which was a typical cash crop cultivated not at all for domestic consumption but purely for the market, did the cultivator display the same degree of rigidity of response to prices? The 'subsistence ethic' that we have shown governed the supply response of rice, has often been extended to explain the economic behaviour of the peasant cultivators growing cash crops like lac. In its classic form the economic response of cultivators is assumed to follow the 'backward bending supply curve'. Since it is assumed that the peasantry has limited needs; any increase in prices evokes less effort on their part since their fixed needs are now satisfied by the increased value of their effort. That this argument has often been used to pay low prices for products (and labour) of the peasant economy is not surprising. We shall encounter a variant of this argument, in the next chapter, used by coal mines owners and managers for the coal field labourers of Chotanagpur.

In 1941, the lac marketing report commented pessimistically on the inadequate supply response to price changes in lac. The year to year fluctuations in lac production in relation with the changes in price of lac, it found, was marked by a very low positive correlation. But when the trend element from both the series (price and production) was taken out the correlation turned negative. It thus concluded that 'when prices went up the production in the corresponding period probably dropped down and when prices fell down the production increased' 72. This behaviour was explained largely in terms of

petty nature of production, which was mostly in the hands of tribals living in remote jungles, who responded less adequately to the price signals.

But the method adopted by the lac marketing committee was in itself faulty, since it looked at only the year to year fluctuations. The price response, as is well known is always to be found with a lag. Secondly, the production series becomes available only from the beginning of depression, when abnormal trade conditions prevailed in the world market. The annual changes in price during depression was an inadequate index of the normal demand pattern in the world market.

Can we then devise an adequate method for determining the long term price response of the lac cultivators of Chotanagpur? As we said the production figures become available from 1929 onwards only. For the pre-depression period, we do not have the data for production. What we have is the data on exports of Shellac from India from 1890 onwards. How adequate is it as a proxy for production figures? The period for which both total production and total exports are available shows a positive correlation between the two series, the correlation coefficient being \( r = 0.62 \) from 1929 to 1948. In figure 7.8 the exports (proxy for production) and the price of lac are shown. At first sight it might appear that there indeed was a negative correlation between exports and production. It is easily visible that there are strong cyclical features displayed by both the series. But it can be seen that the cycles of exports (or production) and the cycles of prices were not so negatively correlated as it looked at first sight, in fact these two series do display the same periodicity of cycles. But as is evident the
FIG 7.8

FIVE YEARLY MOVING AVERAGE OF LAC PRODUCTION AND PRICE 1890-1948

Price
Production
FIG : 7.9

PHASE LAG OF LAC PRODUCTION WITH ITS PRICE, 1890-1948

Price
lagged
by 5 years

Production
price cycles lead the exports (production) cycle by a phase. Since the cycle length is roughly 10 to 12 years, length of the lead of price cycle is about 5 to 6 years. In figure 7.9 we have lagged the moving average of exports by five years. The coincidence of the peaks and troughs of both the cycles is now clear. Though it is understandable that there should be lag between prices and production, it is not clear why there should be lag of 5 to 6 years. The cycle of overproduction and underproduction, the typical business cycle had, in any case affected the lac production. Thus during the first lac boom in 1890-95, there was a great increase not only in the number of trees cultivated but also in the number of castes practicing in this cultivation. Bridge writes, "People lost their heads and speculation was wide spread". The great upswing in production in Chotanagpur started then. But supply soon over ran demand and prices fell rapidly. Lac cultivation again became restricted. A second boom followed immediately after, reaching its peak in 1905-07. Again "people made fortunes and speculation was rife", high rates of rent were paid for bringing new trees under cultivation. Once more cultivation expanded to meet the increased demand, and in the meanwhile prices went into a deep trough.

From the above account of lac production in Chotanagpur it appears that fluctuations in prices were responded to positively. But the cyclical crisis of world demand affected the production process greatly.

The phase lag between the price cycle and

73. 'Palamau Rate Report' Chapter XIX.
74. ibid.
production cycle appears perplexing. The following tentative formulation might explain it. In the phase of upswing of prices, production expanded by old cultivators planting lac on trees by getting them on rent, and by new cultivators entering the market. If the prices keep rising, more and more new entrants enter the field. The flow of new entrants keeps increasing though at a diminishing rate even when the prices start falling as long as they are above a certain floor price (determined by the cost of labour + cost of seed + rent charge). Once the price falls below that floor price, there is an exodus of cultivators from the market, specially those who had expanded production by renting new trees. The peak point of production would then come not at the peak of prices but some way down the cycle of price. Similarly the trough of production would not be during the trough of prices but some way up the price cycle, when again a new rush of entrants into the market expands production. It is thus the existence of floor price which determined the length of the lag between the price and production cycle. But superimposed on these large 10-12 yearly cycles were the irregular fluctuations induced by adverse climatic conditions. These annual fluctuations either accentuated or attenuated the cyclical features of the production and price series.

Conclusion: During the course of our period, the relative isolation of Chotanagpur was breached by the expansion of the market. The internal and external prices were equalised to a great extent. Market generally adapted to the social structure. The phenomena of interlocked markets were more prevalent in regions which were under the sway of landlordism. Elsewhere it was
absent. The peasant responded to market opportunities in an apparently ambiguous manner. Precisely during the phase of growth of production do we see increasing imports of foodgrains into the region. The urban importing centres were strongly linked to the supra local market and weakly linked to the hinterlands. The concern for subsistence remained important for the peasant. Without widespread coercive marketing mechanism (forced commerce) price mechanism alone could not bring the supplies from the hinterland to the urban centre. In this peasant behavior was not irrational as long as his income depended more on the fluctuations of the harvest rather than that of prices. But then market was also taken into account, in a crop like lac where peasant income depended more on the prices than on the harvest. Subsistence ethic coexisted with market calculation in the peasant economic behavior.