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THE AGRARIAN BARRIER TO INDUSTRIAL GROWTH*

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In this paper we attempt to sketch the manner in which agriculture-industry linkages impinge on the development of manufacturing industry, especially with reference to the growth of the home market, in a transitional economy. We may tentatively describe our transitional economy as one where material production is still dominated by agriculture but there is already a substantial manufacturing sector and the relative weights of the two sectors are shifting in favour of the latter. We shall say something later about the institutional framework of this transitional system. For the moment let us merely note that historically the transition from an agrarian economy to an industrial one, industrialisation, has invariably been embedded in a larger process called the development of capitalism. We begin by locating a point of departure in the received theory in section 1. Next we present a framework for understanding the dynamics of a transitional economy in section 2. Finally, some relevant historical illustrations are presented in section 3.

1. Locating a Point of Departure

Recently we have seen some remarkable attempts to develop a macro theory for transitional economies along the lines of the Keynes-Kalecki short period theory of income determination for mature capitalist economies.^{1/} These exercises are not concerned with the long term dynamics of a transitional economy any more than Keynes was concerned with the long term

^{1/} See, for instance, Rakshit (1982).

dynamics of a mature capitalist economy. It does not follow however that there is nothing to be borrowed from Keynes in our attempt to understand the dynamic tendencies of a transitional economy. His note on Jevon's theory of trade cycles generated by agricultural fluctuations, for instance, offers an excellent framework for the analysis of business cycles in a transitional economy.^{2/} More important for our present purpose however is the notion of aggregate demand itself. As we shall see below, the size of the market is one of the key elements through which the development of agriculture determines the growth of manufacturing industry in a transitional economy.

If the development of agriculture determines the growth of manufacturing industry, then we must ask what governs the development of agriculture. For an answer to that question we shall find it useful to draw Schumpeter's notion of innovation and the related notion of entrepreneurial profit. It will be recalled that entrepreneurial profit in Schumpeter is not the return on capital. The entrepreneur, as entrepreneur, is not the owner of capital in his scheme. Entrepreneurial profit is the only notion of a pure surplus that we can find in Schumpeter. It is a surplus which exists only temporarily until the others catch up. But it is nevertheless crucial for it is the prospect of this reward which activates the innovative drives of the entrepreneur.

Perhaps we ought not to ask for more from Schumpeter for he too, like

^{2/} See Keynes (1973) Chapter 22 - Notes on the Trade Cycle.

Keynes, was not really concerned with the problems of a transitional economy. He did note in his discussion of cycles that the harvest cycle of Jevons was a Special Cycle which might dominate business activity in less industrialised countries like Russia at the turn of the century.^{3/} We also see in his historical outlines that the antecedents of his period of analysis, i.e., the three hundred years prior to 1787, as well as his first Long Wave from 1787-1842 are both dominated by developments in agriculture.^{4/} However there is no evidence that he assigned any special significance to this or that he recognised the dynamics of transitional economies as something requiring a separate analysis. Certainly it had no place in his theoretical analysis.

Finally, we shall find it useful to borrow from Marx the concept of surplus. Surplus production, its appropriation and deployment form the key elements of a system of social production for Marx. This motor acquires a specific form under capitalism, but the motor itself is more general and applies in different forms beyond the boundaries of capitalism. In a transitional economy it is the surplus extraction mechanism of agriculture which gives the system its essential dynamic. With the concept of aggregate demand borrowed from Keynes, the concepts of innovation and entrepreneurial profit borrowed from Schumpeter and the concept of surplus borrowed from Marx we can now set up a simple structure which will help us understand the dynamics of a transitional economy. However we have not yet found our specific point of departure.

^{3/} See Schumpeter (1939) Chapter IV Part E - Other Fluctuations.

^{4/} Schumpeter (1939) Chapter VI - Historical Outlines I: Introduction; 1787-1842.

It can be argued that Marx himself provides us such a starting point since, unlike Schumpeter, he was clearly concerned with the question of the transition and also saw it in terms of the same relative balance between agriculture and industry with which we began. Thus, he writes in the Grundrisse:

"In all forms of society there is one specific kind of production which predominates over the rest, whose relations thus assign rank and influence to the others. It is a general illumination which bathes all the other colours and modifies their particularity Among peoples with a settled agriculture - this settling already a great step - where this predominates, as in antiquity and in the feudal order, even industry together with its organisation and the forms of property corresponding to it, has a more or less landed property character; is either completely dependent on it, as among the earlier Romans, or, as in the Middle Ages, imitates, within the city and its relations, the organisation of the land. In the Middle Ages, capital itself - apart from pure money-capital - in the form of traditional artisans tools etc., has this landed proprietary character. In bourgeois society it is the opposite. Agriculture more and more becomes merely a branch of industry, and is entirely dominated by capital." 5/

However it is fair to say, I think, that Marx did not develop a theory of the transition in the same sense in which he developed a theory of the

5/ Marx (1973) pp.106-107.



dynamics of established capitalism.^{6/} By the latter half of the 19th century England had already completed the transition. This was the society in which Marx lived and the one which he analysed. At the same time he recognised that his theory of the dynamics of industrial capitalism had as its anterior presupposition the fact of transition. He therefore dealt with the process of transition. But it will be noticed that in Capital he dealt with it after deriving the General Law of Capital Accumulation and on a different plane from the theory itself. His discussion of the process of transition is more a descriptive account of what happened in English history rather than a theory of the transitional economy.^{7/}

We must therefore go further back in the history of economic thought, beyond Marx, in our search for an appropriate point of departure. We must go back to Smith and Ricardo. England towards the end of the 18th century and at the beginning of the 19th was still a transitional society in our sense. This was the society which Smith and Ricardo saw and it is the dynamics of this society which engaged them. We shall therefore find it useful to take them as our starting point, especially Ricardo. It is not surprising, in the light of what has just been said, that this is precisely the point of departure which Lewis adopted for developing a model which still serves today, some thirty years after the event, as the staple fare of modern development theory.

^{6/} The general principles of his materialist interpretation of history constitute of course a general theory of transition. However it will be evident from the context that we are here concerned with the question of a very specific transition.

^{7/} Marx (1971) Vol.1 Part VIII - The So-Called Primitive Accumulation.

One major problem about employing the Ricardian system is that his model of distribution in agriculture is highly specific to English agriculture of his own times. A three class model of capitalist agriculture with the share of profits being squeezed over time between a fixed (subsistence) real wage of the labourer and rising differential rent of the landlord as progressively less productive land is brought under cultivation with the growth of population.^{8/} As Marx had pointed out, the Ricardian model is inadequate even in its own context.^{9/} But what is important for us is its inapplicability in the context of contemporary developing economies. Lewis modified the model, partitioning agriculture into capitalist production (plantations), which is included in his modern capitalist sector along with manufacturing industry, and peasant production which constitutes the subsistence sector. Occasionally Lewis also mentions rent and the landlord.^{10/} But there is really no room for this in his model since per capita peasant consumption equals average (labour) productivity in the subsistence sector. The point is important. As we shall see later, the manner in which production is organised in agriculture is a fundamental determinant of the

^{8/} Ricardo (1951) Especially p.115.

^{9/} Marx (1971) Part VI - Transformation of Surplus Profit into Ground Rent and Marx (1975) Part II. Especially chapters XI, XII & XIII.

^{10/} Lewis (1975) p. 419.

dynamic tendencies of a transitional economy. Ambiguity on this question and an indifference to it is one of most serious limitations of the Lewis model.

The second major problem about adopting the Ricardian system to answer Lewis's question is that Ricardo's system gives us a theory of the tendency towards stagnation whereas Lewis was looking for a mechanism of growth. In a sense therefore Lewis had to invert the Ricardian system and put it on its head. Ricardo's system is a truly transitional system in our sense of the term. The determinations flow, so to speak, from agriculture to the rest of the economy. A declining land-mand ratio and the consequent decline of labour productivity in agriculture forms the prime mover in his model. Falling productivity, a rising share of rent and the rising real (labour) cost of food; rising food prices and hence rising money wages; a squeeze on profits and the declining tendency of the rate of profit. This is the Ricardian dynamic. The Lewis model is not a transitional model in this sense. Peasant agriculture is physically dominant, it absorbs the bulk of the work force, but the determinations already flow in the opposite direction. The real dynamic of the system originates in modern industry.

Thus, at the outset of the Lewis story we have a closed economy where ~~peasant agriculture~~ has already hit the lower end of the marginal productivity curve. The low average productivity of labour, or peasant

income (no surplus appropriation is assumed), in the subsistence sector sets the real wage rate in the capitalist sector at which an 'unlimited' supply of labour is available. The amount of labour employed in the capitalist sector is determined by the profit maximising rule at the going wage. The rest of the labour force is absorbed in agriculture, a substantial part of it as redundant labour in the sense that its marginal product is close to zero or even negative. Change is introduced in this otherwise static system by the automatic investment of all savings in the capitalist sector, savings which basically come out of profits. It is this productive accumulation which gives the system its dynamic. As accumulation proceeds labour productivity in modern manufacturing (including plantations or any other capitalist enterprise) rises but the real wage rate remains pegged to the constant average product of the peasant sector.^{11/} Hence the share of profits, and therefore the rates of savings and investment, rise. This sector grows at an increasing rate, each round of expansion withdrawing some redundant labour from agriculture for new employment in modern industry.

The mechanism would change once the entire redundant labour in agriculture has been withdrawn and the economy has moved beyond the domain of the Lewis model. However Lewis also notes a number of special cases where

^{11/} There is an obvious but crucial flaw in the reasoning here. A zero or negative marginal product of labour over a range does not imply a constant average product over the same range. Any diminution in labour would in fact imply a rise in average productivity, even if marginal productivity remains at or below zero. The average product rising with any diminution of even redundant labour in the peasant sector is obviously fatal for the entire Lewis mechanism. We may still rehabilitate the mechanism by resorting to population growth in the subsistence sector or arguing that peasant incomes remain constant even though peasant productivity is rising. But then the question of distribution and surplus appropriation in the subsistence sector has to be brought into the story and this is no longer the Lewis model. For a recent review of other criticisms of the Lewis model see Leason (1977).

the mechanism might cease working before this point is reached. The most important of these special cases is the one where food is exclusively produced in the subsistence sector, such that labour transfer across sectors can only occur along with the transfer of food. If growth of the capitalist sector generates an excess demand for food, this may shift the terms of trade in favour of agriculture such that a constant agricultural product wage converts to progressively higher industrial product wage rates.^{12/} This would cut into the share of profits in the capitalist sector and force down the rates of saving and investment, thus terminating the Lewis process. The close affinity of this case with the Ricardian theory of stagnations will be evident to the reader. The food link is also central to our own story.

The main model, taken along with its special cases, yields an elegant dynamic. But the trouble with it is that it doesn't work, or at least hasn't worked in recent history. As Lewis himself put it not so long ago:

"It (the model) predicts quite well for nineteenth century Europe, on whose experience it was based, but when applied to one hundred LDCs over the past quarter century its performance is spotty."^{13/}

Clearly there was some essential part of the story in 19th century Europe, or the story in Japan, which the model seems to have missed.

^{12/} Obviously the same situation could also arise because of population growth.

^{13/} Lewis (1979).

An essential part which would explain why the Lewis mechanism appears to have worked then but is clearly not working now. This essential part, it seems to me, consists of those three elements which we said we shall borrow from Keynes, Marx and Schumpeter, i.e., the notion of aggregate demand; the notion of surplus, its generation, appropriation and deployment and the notion of innovation along with the associated idea of the innovators reward (Schumpeter's 'entrepreneurial profit'). With these three elements incorporated into a Ricardian setting it should be possible to construct a simple picture which can accommodate, as alternative variants, the varied historical experience of different transitional economies.

2. Agriculture and the Market for Manufacturing Industry

We had started out by describing our transitional economy as one which is still dominated by agriculture but where there is already a substantial manufacturing sector. Let us now assume that production in this sector is organised in capitalist enterprises. Some manufacturing may also be undertaken as petty commodity production by artisans and craftsmen, but this makes no difference to the analysis. In the Lewis model all savings are automatically invested in the modern manufacturing sector, there is an unlimited supply of labour at the going wage and there appear to be no constraints to the growth of manufacturing output other than the capacity of existing plant and machinery to supply additional means of production i.e. new plant and machinery and an additional flow of materials. In particular there is no

constraint of demand ~~or~~ of finding markets for what the manufacturing sector produces. In this Lewis followed Ricardo. However no one familiar with transitional economies like India, where the slow growth of demand and low capacity utilisation in many branches of industry has become chronic for nearly two decades, can fail to recognise that the limited size of the market is a severe constraint on industrial growth. We shall assume that the size of manufacturing output is determined by the level of aggregate demand as in Keynes, such that the rate of growth of manufacturing industry is given by the rate of growth of the market for a composite commodity called the manufactured product. Our only restriction on this product is that it is not food.

The market can be analysed into its different components in a number of different ways. For our purpose it is convenient to assume that we are operating in a closed economy. The demand for manufactured output can now be divided into three component parts. One part consists of the total consumption and investment demand generated within the manufacturing sector. Government expenditure may also be lumped together with this component. The second component consists of the consumption or investment demand for manufactures in the agricultural sector. The third part, which has to be set off against the first two components, is the expenditure by households and firms of the manufacturing sector on a composite agricultural product which is consumed by the households as food and by firms as raw materials. The fact that we are ruling out trade with the rest of the world and lumping together both private investment expenditure as well as government expenditure with private consumption

expenditure should not be taken to imply that a favourable balance of trade or public expenditure or private investment are unimportant. The intention is only to isolate and focus our attention on those components of the aggregate demand for manufacturing output which are related to agriculture.

Of course this choice of focus itself reflects the initial presumption with which we have started, i.e., that agriculture dominates industrial performance and sets the pace for it. Our second and third components of aggregate demand for manufacturing output are the two separate routes through which the market dependence of industry on agriculture operates. It will be evident from the table below that this dependence has indeed.

Inter Sectoral Commodity Flows in India

(Rs. Crores, 1960-61 prices)

PANEL A	Income Originating in Non-agriculture	Deliveries to Agriculture			Deliveries to Agriculture (% share)		
		Consumption goods	Producer goods	Total Deliveries (2 + 3)	Consumption goods (2 ÷ 1)	Producer goods (3 ÷ 1)	Total Deliveries (4 ÷ 1)
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1951-52	4470	2327	408	2735	52	9	61
1960-61	7062	2933	255	3188	41	4	45
1970-71	11640	4387	1073	5460	38	9	47

PANEL B	Income Originating in Non-agriculture	Purchase from Agriculture			Purchase from Agriculture (% share)		
		Consumption goods	Producer goods	Total purchases (2 + 3)	Consumption goods (2 ÷ 1)	Producer goods (3 ÷ 1)	Total purchases (4 ÷ 1)
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1951-52	4470	1519	729	2248	34	16	50
1960-61	7062	2303	1680	3983	33	24	57
1970-71	11640	2943	1732	4675	25	15	40

Source: S. Mundle - Surplus Flows and Growth Imbalances, Allied, 1981, Tables 3.13, 4.6 and 4.8.

been very high via both routes for post-independence India. These calculations, incidentally, apply to the non-agricultural sector as a whole and probably understate the degree of dependence of manufacturing industry proper.

On the one hand roughly half the income originating in non-agriculture (between 45% & 61%) comes from its sales of consumer goods and producer goods to agriculture, the bulk of it being deliveries of consumer goods. On the other side also between 50% to 60% of non-agricultural incomes was spent not on its own production but on commodities purchased from agriculture during the fifties and early sixties and even in 1970-71 the proportion was as high as 40%. The major part of this goes to consumer goods, mainly food. But raw materials also constitute a significant import from agriculture. The actual proportions will of course vary between different transitional economies, as indeed they have varied for India itself between different years.^{14/} Here we must be cautious not to draw any inferences about secular tendencies from three observations only. They are cited merely to capture the range of fluctuations associated with large fluctuations in agricultural production. But the important point here is that this double dependence of industry on agriculture is a major structural feature of the transitional economy.

^{14/} For a similar estimate of industry's market dependence on agriculture in post - Restoration Japan see Mody, Mundle and Raj (1982).

Within our closed economy, therefore, the manufacturing sector is seen to be highly open with respect to the agricultural sector and it turns out that the prospects of manufacturing output growth depend in large measure on "exports" to agriculture and "imports" from that sector.^{15/} We must therefore identify the factors underlying changes in these two variables which constitute the two routes through which agriculture dominates the growth of the market for manufacturing industry.

^{15/} Let M, D, R and E denote respectively the values of output in the manufacturing sector, exports to agriculture, imports from agriculture and a catch all variable representing private consumption and investment expenditure of the M - sector plus government expenditures.

By definition $M = E + D - R$ (1)

such that $\frac{\dot{M}}{M} = e(\frac{\dot{E}}{E}) + d(\frac{\dot{D}}{D}) - r(\frac{\dot{R}}{R})$ (2)

where e, d and r are the relative weights of E, D and R with respect to M . The term E could be decomposed into two parts with one part dependent on M as in the usual aggregate demand function. However this would add nothing to our analysis.

Now let p_1, p_2, c, q and m denote respectively the prices of the agricultural commodity and manufactured commodity, the physical per capita consumption of agricultural commodity (food) in the manufacturing sector, labour productivity in the manufacturing sector and the input-output coefficient between agriculture and industry. Noting that the population (work force) in manufacturing sector is given by M/q , we have

$$R = p_1 (c/q + m) M/p_2 \quad (3)$$

or, defining the inter-sectoral terms of trade $p = p_1 / p_2$ and $k = (c/q + m)$ where k can be interpreted as the composite import coefficient of the M - sector with respect to agriculture, we have $R = p.k.M$ such that

$$\frac{\dot{R}}{R} = \frac{\dot{p}}{p} + \frac{\dot{k}}{k} + \frac{\dot{M}}{M} \quad (4)$$

Using equation (4) we can rewrite (2) as

$$\frac{\dot{M}}{M} = (1+r)^{-1} \left[e(\frac{\dot{E}}{E}) + d(\frac{\dot{D}}{D}) - r(\frac{\dot{p}}{p} + \frac{\dot{k}}{k}) \right] \quad (5)$$

Thus the rate of growth of the manufacturing sector $\frac{\dot{M}}{M}$ is seen to vary positively with the rate of growth of exports to agriculture ($\frac{\dot{D}}{D}$) and inversely with the two elements of the import argument, i.e., the rate of change of the inter-sectoral terms of trade ($\frac{\dot{p}}{p}$) and the import coefficient ($\frac{\dot{k}}{k}$). The weights d and r correspond to the ratios given in the table above.

Regarding exports we have seen that the major component of this in post-independence India is consumer goods (see table above). This is probably quite typical of transitional economies, where the use of manufactured inputs like fertilizers and pesticides or farm machinery like tractors is likely to be limited. Over time of course this component is likely to increase.^{16/} The volume of consumer goods purchased by agriculture depends on the per capita income of that sector and the size of its population. As per capita income rises, the surplus income available for expenditure on manufactured items after meeting subsistence (food) requirements will rise.^{17/} Since per capita income reflects the productivity of labour in the sector, we may say that the growth of the "export" market for manufactures depends on the rates of growth of population and productivity in agriculture. We also need to take into account the distribution of the agricultural product since the same per capita income can generate different volumes of non-food demand depending on how the income is distributed. All these three factors, i.e., population, productivity and distribution are related to the question of how production is organised in agriculture. For the moment we put aside this question.

On the other side we have "imports" from agriculture which reduces the portion of manufacturing sector incomes spent on manufactured products and thereby constricts the market for manufactures. This can be

^{16/} As we would expect, this component has in fact been rising in India since the mid-sixties, though it is still very low. See Mundle (1981), Chapter IV.

^{17/} The evidence for post-independent India suggests a deterioration on this count, i.e., a shift in the opposite direction. See Mundle (1981), Chapter III.

further analysed into its two components, namely, the inter-sectoral terms of trade and the so-called import coefficient.^{18/} The latter is a composite term consisting of the per capita consumption of food (c), the productivity of labour in M - sector (q) and the input-output coefficient (m). The per capita consumption of food is unlikely to rise beyond a point, while m is likely to decrease over time as manufacturing industry diversifies into non-agricultural products.^{19/} The productivity of labour on the other hand may be expected to rise over time. Thus the composite coefficient k is likely to decline over time. This would tend to reduce the share of imports in manufacturing sector expenditure and expand the relative share of manufactures in the internal demand of the sector.

Whether these positive tendencies of the different elements of k , which are in themselves independent of agriculture, actually reflect themselves in a reduced share of imports from agriculture or not depends however on the other element in the valuation of imports, i.e., the inter-sectoral terms of trade p . Prices in agriculture are generally assumed to be flexible, fluctuating from year to year in response to fluctuations in output so as to match demand and supply. However over the long run even agricultural prices cannot persistently remain below

^{18/} See footnote 11 above.

^{19/} In the Indian economy this has actually happened after a turning point reached around the beginning of the sixties. See Mundle (1963) Chapter *V.

the cost of production. Hence the cost of production in agriculture may be taken to set a lower bound to agricultural prices in the long run. This is especially true if government administers agricultural prices since administered prices are then explicitly related to production costs as in the case of industry.

What I am suggesting, in other words, is that over the long run, trends in agricultural prices reflect trends in production costs and hence productivity. Even in a purely flex price regime this would hold. Under given conditions of demand, prices would be lower in a situation where productivity is rising and supply curves are shifting outwards as compared to one where there is no change in productivity. Thus, on either view of how prices are formed in agriculture, it would hold that, other things remaining the same, agricultural prices will be lower in a situation where productivity in agriculture is higher as compared to one where it is lower. Finally, we may make a similar proposition with respect to the growth of population in agriculture. Other things remaining the same between two situations, the marketable surplus of food will be larger and hence the supply price lower in that situation where the agricultural population is smaller.

These influences of productivity and population growth on agricultural prices may or may not be revealed in the movement of the terms of trade depending on what happens on the other side, i.e., the formation of prices in manufacturing industry. If productivity is rising faster in industry than in agriculture then we should expect the terms of trade to move against industry under given demographic and institutional conditions. However if

the profit (surplus) margins are rising faster in industry than in agriculture then the movement may be reversed.

In general we may say that the rate of change of the terms of trade will be equal to the sum of the relative rates of change in margins and unit costs in the two sectors, the latter varying inversely with the relative rate of change in productivity. Stated differently between two situations, where margins and unit costs in industry are similar, the terms of trade will be more favourable to industry where the rate of productivity growth in agriculture is higher or population growth lower.

We may now pull together that the main propositions of the argument developed over the last few pages as follows:

- (a) In a transitional economy where the size of the market is the binding constraint on manufacturing output growth this rate of growth is crucially dependent on agriculture.
- (b) This dependence operates through two distinct routes. One is the large share of manufacturing output which is "exported" to the agricultural sector. The other is the large share of manufacturing sector expenditure which is spent on "imports" of food and fibre from the agricultural sector, thereby restricting the internal demand of the manufacturing sector for its own products.
- (c) It turns out that via both routes of dependence the growth of the market for manufacturing industry depends, in the penultimate analysis,

on the rates of productivity growth and population growth in the agricultural sector.^{20/}

(d) Penultimate because it follows from propositions(a), (b) and (c) that in the ultimate analysis the prospects of industrial growth in a transitional economy depend on the conditions which govern the trends in productivity growth and population growth within agriculture.^{21/}

We can no longer postpone the question of how agricultural production is organised in our traditional economy if we hold the view, as I do, that trends in both productivity and population change are governed by the social organisation of production. By the social organisation of production I mean specifically the system of surplus production

^{20/} Unless otherwise specified, by productivity we always mean labour productivity.

^{21/} This may appear as a strong denial of Adam Smith's thesis that while the development of agriculture is the most natural basis of industrialisation the latter can proceed on the alternative basis of long distance trade, even if agriculture is depressed. (Smith(1964) Book III - Of the Different Progress of Opulence in Different Nations) This thesis was born again within the Marxian tradition with Sweezy's intervention in the transition debate (R.Hilton ed.1976) and it surfaces periodically. A new version seems to be implied for instance in the important work of Perlin (1983). For a recent critique of the Smithian view see R.Brenner (1977). My own argument is not a denial of the powerful affects of trade but an assertion that industrialisation, however initiated, must sooner or later base itself on the home market; which implies that an agrarian revolution is a necessary precondition for sustained industrialisation. Without this, industrialisation dependent on external markets (export led growth !) is a precocious and fragile development which will collapse sooner or later with shifts in the commodity/region composition of world trade. History is full of such examples of precocious industrialisation, some of which we shall cite below.

appropriation and utilisation. While all systems of production are systems of use value production, it was Marx's contention that most such systems are also systems of surplus production and that it is our analysis of the latter aspect which helps us to identify the dynamic of a system.

Of the determinations between social production on the one hand and productivity or population change on the other, it is the latter connection which is the more difficult to establish because the Marxian proposition that "every special historic mode of production has its own special laws of population, historically valid within its own limits alone" (K.Marx 1971 VolI p.592) has largely gone by default. Notable exceptions—prove the rule that by and large the role of the demographic factor is generally ignored in Marxist analyses of the long term dynamics of different social formations. Presumably this prejudice derives from a fear of the Malthusian ghost, that once admitted a demographic dynamic would obfuscate and displace the centrality of exploitation mechanisms in explanations of social change and social crisis. This is a serious gap in the Marxist analysis of the long term dynamic of a transitional economy since the pressure of population is so obviously a central fact about many contemporary developing societies. What we need is a direct analytical assault on the question of population.

As Seecombe has forcefully argued in a recent paper, if the notion of production is extended to cover not only the means of production and subsistence but labour itself then it should be possible to explicitly incorporate and explain demographic tendencies as an element of the

overall dynamic of a social formation instead of holding on to unnecessary and untenable positions that the demographic factor plays no essential role in that dynamic.^{22/} Neo-Malthusianism can then be aptly buried on its own ground. Hopefully Seccombe's intervention is only the beginning of some such extension of the Marxist research programme.

Pending such an extension I can offer no more than a few suggestive remarks on the question of population growth and will instead focus on the relationship between the organisation of production in agriculture and productivity growth in a transitional economy. The rise in productivity and declining costs are the defining characteristics of innovation for Schumpeter. It may involve a new invention but need not. It can simply be a different way of doing things. Fodder cultivation on the fallow and mixed farming was a major innovation which the English yeomen farmers borrowed from Flanders. But so was the decision of the peasant in Tokugawa Japan to plant his rice seedlings in a straight line instead of dispersing them randomly. It was a better way of doing things and augmented productivity. Schumpeter's notion of innovation is virtually synonymous with increases in productivity. Hence we find it useful to incorporate his notion of innovation, along with the related issues of financing innovation and the innovator's reward, while addressing the question of how the organisation of production, the surplus mechanism, conditions the growth of productivity.

^{22/} Seccombe (1983).

Under competitive capitalism the force of competition drives innovation. But Schumpeter's notion of the 'entrepreneurial profit', or the reward for innovation, can be usefully employed beyond the boundaries of capitalism. Where the force of competition does not operate it is the innovator's reward as such which activates his innovative drive. The notion of 'entrepreneurial profit' is the only notion of a pure surplus that we find in Schumpeter. Its nearest counterpart in the Marxian system would be a rise in the rate of exploitation, but that already includes a specification about who appropriates the surplus. To distinguish Schumpeter's notion from the usual notion of surplus we can refer to it simply as the gains in productivity. Thus an agrarian system may or may not be conducive to innovation and rising productivity depending on how far the potential innovator expects to enjoy the gain in productivity following innovation. Furthermore innovation may entail the deployment of additional resources. Since Schumpeter's entrepreneur is not necessarily the owner of capital, credit plays a major role in his system as the means of financing innovation. However, in the absence of a well developed financial system, the prospects of innovation or the form it can take partly depends on whether the organiser of production also appropriates the surplus, i.e., whether he can deploy a previous accumulation of surplus or not.

On this view all agrarian systems can be usefully classified into three types of systems according to the double criteria of (a) who organises production and (b) who appropriates the gain in productivity. In the first instance there are only two candidates, i.e. ^{the} surplus producer

and the surplus appropriater. However each candidate can take several forms. Thus the surplus producer could be either a peasant or a wage labourer in agriculture. The surplus appropriator could be an absolutist state, a religious authority, a landlord or the capitalist farmer. Our three types of systems are as follows:

Type A: Agrarian systems where production is organised by the surplus producer but where the gains in productivity would be appropriated by the surplus appropriator.

A typical example of this is a lord and peasant system as in European feudalism provided the peasants are not well organised to resist enhancements in the feudal levy. In systems of this type the organisers of production have no incentives to experiment with new ideas or introduce innovations to raise productivity. Nor do they have the means to undertake innovations which entail a large initial outlay since the previously produced surplus has been alienated from them. Such agrarian systems are likely to be stagnant with labour productivity stable or even declining. On the other hand peasant households in such systems see no advantage in restricting their family size since whether they do or not their per capita consumption is forced down to subsistence level. Consequently the macro demographic tendency of such systems is Malthusian, with peasant populations periodically crossing the sustainable physical limits of population and being decimated through population catastrophies like famines, plague, epidemics, etc. Clearly such agrarian systems fail to establish the preconditions for a successful transition.

Type B: Agrarian systems where production is organised by the surplus appropriator and the gains in productivity are also appropriated by the surplus appropriator.

A typical example of this is capitalist farming where the capitalist organises production using wage labour. He not only appropriates the existing surplus but would also appropriate as extra surplus any gain in labour productivity (unless we assume that wage labour is organised to resist this). Consequently he has both the means and the incentives to introduce innovations. Agrarian systems of this type are progressive and manifest rapid increases in productivity. However the rate of progress in such systems may be impaired to the extent that other claims from the surplus, e.g., ground rent, are also extended to the gains in productivity. The macro population regime of such systems is not clear. If the Marxian proposition about the population dynamic of capitalism is correct then it would follow that the rate of population growth, modulated by variations in the level of real wages, would go through cycles in reverse relationship to the level of unemployment. Clearly agrarian systems of this type sooner or later establish the necessary conditions for a successful transition.

Type C: Agrarian systems where production is organised by the Surplus producer and the gains in productivity are also appropriated by the surplus producer

A typical example of this is again a lord and peasant system but one where the peasantry is cohesive and relatively well organised to resist

enhancements in the levy. Under such condition the organisers of production have the necessary incentive to try out new ways of doing things and introduce innovations which enhance productivity. However, since previous surplus has been alienated from them, this precludes innovations which entail the outlay of massive resources. Progress will therefore be embodied more in innovation which are biological or biochemical rather than mechanical. The demographic regime is again not clear. On the one hand gains in productivity appropriated by the peasantry will raise their living standards and sooner or later reduce the death rate. However fertility behaviour is a complex determination depending on how the peasant household perceives the advantages and disadvantages of birth control, the prevailing social attitude towards such control and the means available for such control.^{23/}

Though agrarian systems of type C can also establish the necessary preconditions for a successful transition, visions of the transition based on the European experience have usually only recognised this possibility for agrarian systems of type B. It should be emphasized that our three classes of agrarian systems are merely a convenient typology. No necessary historical passage from one to another is implied. However our analysis does suggest that a transitional economy with an agrarian sector of type A cannot successfully complete the transition unless the

^{23/} Birth control did not begin with modern medicine. There is evidence, for instance, of infanticide being practised in some peasant societies (Harley & Yamamura 1977). The thought is revolting to us, but surely infanticide is only a small step away from what is nicely described in the late 20th century as the 'medical termination of pregnancy'.

agrarian system itself is transformed into a system of type B or type C. Furthermore, it should be obvious that agrarian systems of type B or type C only establish the necessary agrarian conditions for a successful transition. They cannot ensure that such a transition will in fact be completed. History is never reducible to simple logical propositions about necessary and sufficient conditions. Certainly demographic and economic factors are important among the objective conditions which lay the boundaries of what is possible. But within these boundaries there are a whole range of subjective factors, the self organisation of classes, political conjunctures and the state, culture and ideology, possibly even the charisma of outstanding leaders, which play their parts in establishing a particular outcome. It would be absurd to disregard all of this and insist on a narrow economic interpretation of the transition.

3. Illustrations from History

The main thrust of what has been said above is reducible to two propositions. First, assuming that the size of the home market is the binding constraint on the growth of manufacturing industry in a transitional economy, the pace for industrialisation is set by developments in agriculture since it is these developments which govern the growth of the market for manufacturing industry. Second, these developments in agriculture, in particular trends in productivity and population growth, are themselves governed by the manner in which agricultural production is organised, i.e., the surplus extraction mechanism. It follows that the prospects of successful industrialisation ultimately turn on the question of whether or not the agrarian system satisfies the necessary conditions for sustained agricultural development.

These propositions must stand or fall on the strength of actual historical experience. Any systematic verification cannot obviously be attempted in the space of a few pages. Besides, the task calls for an encyclopedic knowledge of the specialised histories of different countries to which I can lay no claim whatsoever. All that I shall attempt in the next few pages is to sketch a few illustrations which will hopefully persuade the reader that my propositions are rooted in history. Even 'sketches' is perhaps too strong a word to use for what is no more than a few broad remarks. I have therefore not given the detailed references or cited specific sources on which particular remarks are based.^{24/}

First we shall consider the case of England as an example of the emergence of an agrarian system of our type B. We then consider the contrasting experience elsewhere in Europe, especially France, prior to the 19th century. Agrarian systems were not transformed in these other countries from our type A to either type B or type C and therefore failed to establish the conditions necessary for sustained industrialisation. This is followed by a short review of the Japanese experience as an illustration of the emergence of an agrarian system of our type C which prepared the ground for Japan's successful industrialisation after the Restoration of 1868. Finally we look briefly at India from its pre-colonial antecedents to the present time and see that throughout this long passage the agrarian system of India has remained in one form or another an extreme example of our type A. The possibilities of a real transition of the Indian economy were thus precluded until very recently. The crucial question is whether at long last the agrarian system is evolving in a direction which is more conducive to industrialisation and at what pace.

^{24/} The remarks are entirely based on secondary sources. The interested reader is referred to the list of references at the end of the paper which includes some of the important books and journal articles.

England, France and Europe

The long crisis of the 14th and 15th centuries, the plague deaths, the decline of population, the collapse of agriculture and peasant revolts marked for the whole of western Europe the final denouement of the feudal epoch. But in England the 'seigneurial reaction' to the decline of serfdom was quite different from that in the rest of Europe. The English lords, more cohesive and better organised against the peasantry than their counterparts on the continent, had two options to prevent the control of land from slipping out of their hands into peasant freehold. On the one hand the decline of the peasant population had left many customary peasant holdings vacant. Often the lords were able to simply appropriate these holdings as part of domestic land and restrict the availability of land for freehold by the peasantry. On the other the lords could also appropriate peasant land through the leverage of heavy taxes and fines imposed on the transfer of peasant lands through sale of inheritance. Peasant resistance continued throughout the 15th century and the early years of the 16th, centred around the issues of tenure security, especially the arbitrary imposition of fines. But the calculations of F.M.L. Thompson and other specialists suggest that already by the middle of the 16th century, and possibly earlier, the lord had come to control between two-third to three-fourth of the total cultivable land through engrossment, consolidation and enclosure.

With the rise of absolute private property in land there appeared capitalist ground rent and the large tenant farmers. The 'dissolving effects of trade' did not cause the break down of feudalism as ~~pireme~~ and the Neo-Smithian Marxists have held, but it did help to differentiate the peasantry. With increasing production for the market and the price inflation of the sixteenth and seventeenth centuries their appeared a strata of rich peasantry who leased in the huge farms

engrossed by the landlords and initiated large scale farming with hired labour. The key element of the emerging agrarian system which set in motion the new dynamic of English agriculture was the development of 'cooperative' relations between landlord and capitalist tenant. Ground rent is always a barrier to investment on land since it entails that capital invested on land must exceed the average rate of profit sufficiently so as to cover the payment of rent. However if rents are stable relative to rising commodity prices the barrier of rent becomes progressively less significant. Such was the situation in English agriculture of this period. The tenant capitalists were confident that they "could take a reasonable share of the increased revenue resulting from their capital investments and not have them taken away by the landlords rent increases" (Brenner 1976, p.64).

The capitalist tenant farmer who directly organised production had to share the surplus he appropriated with the landlord. But the gains in productivity were increasingly accruing to him. Thus the basic desiderata of what we have called a type-B agrarian system had been firmly established by the early years of the 17th century. The surplus appropriator both organised production and also appropriated the gains in productivity. Spurts of investment embodying strategic innovations in English agriculture followed quickly. By the middle of the seventeenth century the concept of mixed farming had taken hold atleast on those soils most suited to it. The growing of forage crops (legumes and roots) in place of fallow made possible the raising of herds and flocks without any diminution in grain acreage. On the contrary the increased availability of organic manure substantially raised grain productivity. The effort was enhanced by the more careful selection of seeds and breeds.

The first wave of biological-cum-organisational innovations was followed after a lag by a second wave of 'proto-industrial' innovations, i.e. the use of better hand tools such as the scythe in place of the sickle and the introduction of chemical fertilisers. Specialist estimates by Jones, Kerridge and others suggest that productivity in English agriculture doubled in the first wave and doubled again in the second wave.

Thus by the 17th century England had already parted with the rest of Europe on the basis of an agrarian revolution. It happened long before the industrial revolution and is marked most dramatically by the English response to the 'general subsistence crisis' which gripped the rest of Europe about the middle of the 17th century. Like the earlier crisis of the 14th century this too had Malthusian features on the continent: stagnant production, shortage of food, rising prices, peasant revolts and a demographic collapse. In England, however, productivity rose continuously, food prices were relatively stable and the population continued to grow. What is more, with rising food productivity the whole population could now be sustained by roughly 60% of the workforce. On the one hand this made a large workforce available for absorption into industry. On the other it reduced the real cost of food and hence raised the balance of purchasing power available for manufactures after meeting food costs in both rural and urban households.

The very fact of a different English response suggests that at its roots this 'Malthusian' crisis of the 17th century had something to do with the emergence of a different agrarian system in England. A new surplus extraction mechanism conducive to productivity growth, our type-B system, had pre-empted the crisis in England while the persistence of

retrograde agrarian systems of type-A had failed to overcome it on the continent. That this was indeed so is indicated by the contrasting experience of France. While serfdom had declined in France, as in England, in the wake of the earlier 14th century agrarian crisis, the control of land in France had in large measure passed into the hands of the peasants not the lords. No doubt this was partly due to the stronger self-organisation of the peasantry vis-a-vis landlords in France as compared to England. But it was surely also due to the rise of an absolutist state on the ruin of feudalism. The monarchy of France, unlike that of England, sided with the peasantry not the lords in the struggle over land control and land rights.

The monarchy contained the lords in France in order to reserve for itself the right to squeeze the surplus of the peasants. Feudal rent was now replaced by taxes of the monarch which were, if anything, heavier than the old feudal levy and increasing over time. To this was added the subsidiary claims of the lords who, shorn of their power over land, now reappeared in offices held under the state. Significantly the peasant revolts of the 16th century in France were directed against the state and not the lords as in England. Thus the form of the surplus extraction mechanism had changed, but not its substance. The agrarian system remained that we have called a type-A system with surplus producers directly organising production while the surplus appropriator threatened to absorb any potential gains in productivity. The peasantry under these conditions had neither the means nor the incentives to develop agriculture. Declining productivity in agriculture culminated in the subsistence crisis of the 17th century: the shortage of food, the inflation of prices and again a demographic collapse. Neither was there a redeployment of

agricultural surplus to the landowner was there the release of population and the growth of a home market for manufacturing industry.

On the basis of the story told so far it would be perfectly tenable to concede our second proposition on the question of the transition without admitting the first. In other words the contrast between England and France outlined above could be taken to imply that the different balance of political forces under which feudalism collapsed in the two countries did lead to different agrarian developments, rapid progress in the one case and retrogression in the other; and we might yet maintain that this was quite irrelevant to the other contrast, viz., that England industrialised while France did not. What lends credence to this view is the fact that the initial industrial spurt in England did begin with the export led growth of the textile industry. However what makes this view quite untenable is the fact that precocious trade based industrialisations in France and other parts of Europe could not be sustained in the absence of an agrarian revolution and a viable home market.

Italian industry was the first victim. Centred around the woollen cloth industries of Venice, Florence and Milan, industrial production in Italy had developed early but remained fragile. For its market it depended on the Mediterranean trade and for its sustenance the workforce depended on grain imported from a backward agriculture of the south, techniques of production remained archaic within the constricting hold of feudal craft guilds. The shift of maritime focus from the Mediterranean to the Atlantic, the development of Anglo-Dutch shipping, the competition of superior textile production in England and France and finally the rising cost of subsistence because of rising grain prices during the subsistence crisis had put an end to this fragile Italian industry already by the

early seventeenth century. But close on its heels followed the decline of the extensive French textile industry of Beavais which too was priced out of the market by rising grain prices and subsistence costs of the 17th century crisis in the face of English competition.

Finally we have the collapse of Dutch industry which was by far the most advanced in Europe until the advent of the English industrial revolution. Dutch shipping, the cloth industry centred around Lieden, paper, brewing, bleaching, baking and construction materials were all flourishing during the early 17th century while the industry of Italy and France was already collapsing. But the Dutch industrial structures was no less fragile for it too depended largely on external trade and for their means of subsistence the Dutch workforce depended on grain imported from eastern Europe. It was thus the backward agriculture of eastern Europe, not the highly specialised commercial agriculture of Holland itself, which formed the relevant agrarian base of Dutch industry. And when the price of grain imported from this backward agrarian base rose sharply in the latter half of the 18th century, Dutch industry too collapsed before the English onslaught.^{25/}

Japan

Contrasting the experience of England with that of transitional economies in other parts of Europe helps to illustrate our double

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If these examples from western Europe serve to show that trade alone cannot sustain industrialisation without the supporting base of a dynamic agriculture then we have in Europe east of the Elbe an extreme example of the very opposite impact of trade. Far from promoting or sustaining industry, the great Baltic trade in grain grew on the basis of the second enserfment and served to reify this retrogression of an agrarian system.

proposition that industrial growth in a transitional economy depends on the progressiveness of agriculture which in turn depends on the establishment of specific types of surplus extraction mechanisms which are conducive to innovation and productivity growth in agriculture. However the European story, in particular the example of a successful transition in England, can also be misleading in the sense that a very specific form of agrarian development, large scale capitalist farming, might appear as the only viable agrarian basis for a successful transition. The English agrarian system became what we have earlier described as a type-B system, i.e., where the surplus appropriator directly organises production and also appropriates the gains in productivity. However it will be recalled that we have also identified an agrarian system of type-C which can equally serve as a viable agrarian basis for industrialisation. This is a system where it is the surplus producer who organises agricultural production and is also able to appropriate the gains in productivity, i.e., the share of the surplus declines over time as productivity rises. The story of agrarian development in Tokugawa Japan is an interesting example of how this has worked in actual history.

At the outset of the Great Peace, which begins with the consolidation of Tokugawa rule around the beginning of the 17th century, we see in Japan

26/ Marx himself probably believed this since he had not seen any other path of development. But the view is still held atleast by some contemporary Marxist scholars. It is reflected for instance in the important contribution of Brenner where it is suggested that a family farm based transition has only become viable in the late 20th century (Brenner 1982, p.106). Notice that our separation between type-B and type-C is different from the separation between the landlord capitalist path and the peasant capitalist path, both of which belong to our type-B.

a complex agrarian system which had at its base two different types of farm enterprises within the village which were linked to each other by relationships of patronage-cum-exploitation. Every village had a few large farming enterprises controlled by the oyakata, or heads of the so-called main families within an extended family system, and a large number of small farm enterprises operated by the nago who received grants of small cultivation plots and homestead from the oyakata in exchange for labour services. Nago were the Japanese counterpart of European serfs and their labour service the Japanese form of feudal rent. While the nago small holdings were cultivated using family labour the large farms controlled by the oyakata were operated with three different sources of labour. One was the labour services of the nago, the second was the branch families formed by kin branches of the main family and the third was the genin, also sometimes described as fudai or hereditary farm servant.

First generation genin were children bought from the poor families who were incapable of feeding all their children and found this a more humane alternative to infanticide. Once bought, the genin were brought up as members of the extended family and expected to provide labour services like the rest. On acquiring adulthood the genin was allowed to set up a branch family, much like the kin branch families, given a little outhouse and possibly a small plot of land. But he remained dependent on the main family and continued to provide labour services. Children of genin also became genin.

The main family of the oyakata, branch families within the kin, the families of genin and the families of nago all together formed

one extended family and are treated as such in land records and the few village population records which have survived. The basic mechanism of surplus extraction was thus contained within the extended family itself and took the form of labour services rendered by kin branches, genin and nago. Each village consisted of a few such extended families. The few large farms and the many small farms were respectively the lands directly controlled by the oyakata of the main families and the small plots formed by the numerous branch families within the kin, the genin and nago.

There is some evidence to suggest that nago formed about half the workforce in the seventeenth century. Since part of their labour time, about fifty days a year around the middle of the 17th century, went to the main family farm we can say that land cultivated by nago formed less than half the cultivated land. But how much less we cannot say since we do not know the total labour time put into cultivation by an average nago family.

The oyakata of the main families formed the village council with a headman elected from among them who was responsible to the daimyo, or overlord, for collective payment of revenue by the village though the revenue demand was assessed separately for individual enterprises. The daimyo ruled their individual hans from castle towns where they lived with their samurai. But they paid tribute to the shogun and made their military services available for him if the need arose. The shogun maintained his central authority over the 250 odd daimyo through the notorious shankin-kotai system under which periodically the overlords had to shift their residences between their hans and the imperial

court and leave hostages in the emperors court when they were away in their hans. Japanese feudalism was thus a sort of half way house between the classical feudalism of Europe and the great absolutist states of mainland Asia.

Change appears in this system from the around the middle of the 17th century. Smith (1959) attributes the origin of this change to the now familiar 'dissolving effects of trade', i.e., commercialisation of agriculture. But it is equally possible that the change began with rebellion at the very heart of the system, from within the extended family, and that commercialisation was more a result rather than the cause of change. I am not familiar with the specialised research of Japanese scholars on peasant movements and political turbulence during the supposed great peace of the Tokugawa era. Such demographic evidence as is available also do not allow inferences to be drawn with regard to population trends and economic conditions in the 17th century. However the recorded evidence of infanticide, abortion and the sale of children as genin strongly suggests that in the early 17th century the agrarian system of Japan went through a crisis of subsistence just as Europe did at about the same time. We also know from the European record as well as the agrarian histories of India, China etc. that it is precisely such periods of crisis which throw up popular movements of the oppressed classes leading to far reaching systemic changes of one kind or another.

What makes it difficult to disentangle cause and effect in the Japanese case is the more or less simultaneous appearance of change at various points of the system, all of which gathered a momentum

towards the end of the 17th century which was to be maintained through the 18th and early 19th centuries. In effect there was a shift from an agrarian system of our type-A to type-C which laid the basis for sustained agricultural development and eventually industrialisation. We can describe these major dimensions of change without insisting that one or another factor was the prime mover.

Thus it is not clear what caused the developing shortage of labour for the large farm enterprises but we know that such a shortage was developing from about the middle of the 17th century and persisted right through to the early 19th century. The supply of genin appears to have gradually dried up, thus leading to the replacement of hereditary farm servants by free day labourers through various intermediate reductions in the degree of unfreedom. First there was the permanently debt bonded hokonin who was little different from the fudai. Then came the hokonin who was debt bonded but the debt was gradually written off against agreed margins of compensation over and above subsistence and the hokonin was free at the end of it. Finally there was the hokonin who was paid a lump sum advance and tied for a fixed period. Along with this passage from a system of hereditary farm servants to free day labourers there was also a persistent rise in wage rates.

Faced by rising wages and the developing shortage of labour the oyakata now found it more convenient to lease out their lands on rent and tenancy, which had earlier been confined to the Kinai region, now became a widespread phenomenon. The new tenants were often the old nago. Thus the oyakata-nago relationship was gradually transformed

into a pure landlord-tenant relationship. Over time erstwhile genin and even kin branch families came to lease in land as free tenants. Tenancy thus appeared as the prevalent organisational form. However the new tenants were all mostly small tenants cultivating small plots based on family labour, since hired day labour was both scarce and expensive. The big farms were now leased out in small parcels such that the structure of operational holdings came to be very evenly distributed even though ownership was still concentrated. As we know, this sharply contrasts with the predominance of large capitalist tenant farmers in England.

The important point is that with the new landlord - tenant relationships and fixed rates of rent, surplus producing peasants who directly organised production were now able to retain for themselves the gains in productivity. Accordingly, we find a gathering momentum of experimentation and innovation from about the end of the 17th century, an unusual evidence of this being the proliferation of various treatises on how to improve cultivation. These were prepared by the more literate among the peasantry, but they were evidently known and discussed among large sections of the ordinary peasantry. The most remarkable of these works was the Nogyo Zensho published by Miyazaki Antoi in 1698. Pre-capitalist ground rent was undoubtedly a barrier to capital investment on land and the peasantry itself did not in any case have the necessary capital to invest. But they found means of augmenting productivity without using much capital and technical change thus acquired a specifically Japanese character.

One of the major innovations in this era was the widening of plant varieties and more careful seed selection. Farmers would usually sow several varieties of rice at the same time, for instance, and change the varieties from season to season in order to trace the better yielding varieties. Consequently between the early years of the 17th century and the middle of the 19th century the number of known rice varieties rose from 177 to 2,363! A second major innovation was the increasing use of fertilisers like dried fish, oil cake and night soil to supplement the natural organic sources which were inadequate and scarce. Development of irrigation, using techniques suitable for the small farm pattern of land distribution; land leveling; the use of oil as insecticide; improved agronomic practices such as soaking seeds in water before sowing and the more ordered sowing of rice seedlings were other important aspects of technical change in the 18th and early 19th centuries.

The most interesting feature about these innovations was their very limited requirement of capital and their specific suitability to small scale, labour intensive, agriculture. This was the pattern of farming which came to dominate in Japan in sharp contrast to the large scale farming of English agriculture. Hard statistics of productivity gains at the macro level are not available but micro studies suggest substantial gains. Thus, in some areas the shift from dry to wet rice cultivation raised yields by a 100% while Inai has estimated rice yield increases of over 75% in the Kinai region during this period.

A particular aspect of this momentum of technical change based on small peasant farming was the regional specialisation in specific crops which required large scale inter-regional trade in agricultural commodities and the consequent commercialisation of agriculture. Thus by the beginning of the Meiji era 5 out of 68 provinces produced 35% of all cotton, 5 others produced 50% of all vegetables, another 5 produced 53% of silk cocoons while yet another 5 provinces produced 70% of all the indigo. The scale of commercialisation and monetisation this specialisation must have promoted is not difficult to imagine.^{27/}

The growing commercialisation of agriculture based on interregional trade between rural areas, along with rising productivity, inevitably developed into a substantial flow of marketable agricultural surplus from rural to urban areas and the consequent growth of large urban populations engaged in industry and commerce. In the late 17th century, barring Kyoto with 250,000 population, Sakai with 50,000 and a few other castle towns with populations of about 20,000 each there were few urban centres in Japan. But by 1731 Tokyo had grown into a vast city of over 500,000 population and Osaka and Kyoto each had more than 400,000 by the year 1800. Furushina's estimate indicates that by the middle of the 18th century urban areas accounted for 22% of the

^{27/} Unavoidably commercialisation brought with it differentiation and engrossment but it did not effect the scale of farming since under Japanese techniques the advantage lay with the small family farms. Thus, while the ownership distribution of land became even more skewed, the operational distribution remained quite even.



total Japanese population. The total proportion of population freed for employment outside agriculture was actually much larger for, in addition to urban employment, there also occurred during the Tokugawa period a significant rural migration of industry. Located nearer to the sources of raw materials, rural industry was able to break the monopoly of urban craft guilds through lower costs of production and experienced substantial growth in this period. Proto industrial employment in both towns and the countryside was thus remarkably high. The peasantry was not being expropriated and yet a potential industrial proletariat was already in the making long before the Meiji period.

The rapid transition of the Japanese economy which followed the Restoration of 1868 was not, then, a sudden episode of Japanese history which can be reduced either to the dramatic arrival of Commodore Perry or the rise of a new nationalist government obsessed with the goals of 'a rich country and strong army'. No doubt these events had their parts in the total drama of Japan's industrialisation. But set in its proper historical perspective, it is difficult not to notice a parallel that as in England so in Japan the industrial revolution grew out of a long agrarian revolution. What makes the Japanese story different was that its entrepreneur was the surplus producing small peasant and not the surplus appropriating large capitalist farmer as in England.

India: Pre-Colonial Antecedents

Even a brief review of the colonial and pre-colonial origins of modern India should suffice to underline the fact that nothing like

such a long revolution of either the type-B or the type-C has ever occurred to lay the necessary agrarian foundations for the industrialisation of India. Many of us, including the present author in a recent paper (Mundle 1983), have in different ways drawn attention to the colonial antecedents of independent India's failure to industrialise. However, it would be erroneous to draw from this the counterfactual inference that but for colonialism India would have successfully industrialised. For, what colonial policy in India achieved was simply the re-establishment and perpetuation, in varying forms to meet its own peculiar needs in different phases, of stagnation inducing exploitation mechanisms not very different from those which are now being traced back to at least the 13th and 14th centuries.

For the pre-colonial period the picture naturally gets more blurred as we go further back in history. However quite remarkable reconstructions, built out of fragmentary bits of evidence by our historians, suggest an essential continuity of the agrarian system at least from the beginning of the 13th century and leading up to the final collapse of the Mughal empire. There were variations in detail and there were also the long term periods of agrarian decline, crisis and collapse of the absolutist states. But these too appear to fall into a pattern. This is not surprising since in its essentials the agrarian system remained the same; an extreme form of what we had described earlier as a system of type-A, where the surplus producing peasant organised production but where the existing surplus and any potential gains in productivity would be appropriated by external agencies not engaged in production at all.

The basic unit of production was the peasant farm. Though land was not scarce and absolute private property in land did not exist we can nevertheless assume some differentiation since private property in livestock, implements and seeds did exist. The more important class division was between the peasants and a substantial class of traditionally landless agricultural labourers belonging to the menial castes who were employed by the peasants under varying forms and degrees of unfreedom. There were, in addition, the village servants, artisans, etc. who were compensated from the collective village fund for their services under the Jajmani system. Revenue was also paid collectively by the village, though peasant enterprises were assessed individually and made their contributions accordingly. The image of the self sufficient village community presumably owes its origin to these collective institutions.

Presiding over the village community, and mediating on its behalf with the revenue hierarchy of which he formed the lowest rung, was the village headman drawn from the upper peasant strata. The differentiation of peasants has been mentioned. Its upper strata, described differently in different periods as khots, muguaddans, zamindars etc. formed the village elite. The zamindar proper had a heritable and saleable right to a share of the village produce though not the land itself. Habib estimates that in Moghul times his claim amounted to between 15% to 25% of the total revenue. The origin of the zamindar however is traceable to the earlier Sultanate period. To begin with these rights were presumably granted to the chiefs of the original colonisers in an area when it came under imperial rule.

It is the revenue system above the village which provides the key to the pro-colonial agrarian system and its long term dynamic. In Moghul India revenue (Mal) was evidently assessed under three alternative systems; Batai - a share of the produce, Kankut - a share of produce commuted to cash on the basis of crop estimates and a price, Zabt - a standard cash rate varying according to the crop grown. We know less about the system of the earlier Sultanate period. But both during that period as well as under the Moghuls collection was mostly in cash. The Moghuls fixed the rate at between $1/3$ to $1/2$ of gross produce. Habib estimates that the total share of the surplus, including the claims of zamindar etc., was about 50% on the average and has recently suggested a similar proportion for the earlier Sultanate period (Habib 1982). Part of this was collected directly by the officials of the imperial treasury from the khalisa lands. Around the middle of the 17th century this was only about 13% of total revenue. The rest was collected in lieu of pay by assignees under the iqta system which later came to be known as the Jagir system under the Moghuls.

The iqta or jagir system was at the same time the means of revenue collection and its distribution. Administratively it was efficient and politically it formed the real basis of state power, but as a surplus extraction mechanism it was disastrous for agriculture and in the end for the absolutist state itself. Assignees charged with the maintenance of standing armies, in particular the cavalry, dispersed over different territories, were compensated by the grant of rights to collect the revenue from their respective territories (jagirs). Thus most mansabdars of the Moghul military forces were granted jagirs in this form. The states of the

Sultanate period had come to power by military force as had the Moghul state. Their power and very existence depended therefore on their military strength, e.g., the mansabdars and their cavalry in the Moghul period, which in turn depended on the size and flow of revenue. Hence, as mentioned above, the power of the absolutist state was ultimately a function of the flow of revenue.

How firmly the control authority could control the burden of revenue on the peasantry was therefore a matter of critical importance. The greater the surplus they could extract as revenue, the more would their power be consolidated. But if the revenue burden left nothing for the peasantry beyond subsistence, in particular if the peasant had no expectations of some gain, some improvement in the quality of his life, through the development of his agriculture then agriculture and the flow of revenue were bound to stagnate. Worse, if the burden of revenue cut into subsistence then agriculture would not only stagnate but actually deteriorate and with it the flow of revenue. The long term prospects of both state and agrarian system depended therefore on how carefully the imperial monarch could control his assignees. There is some evidence to suggest that in the Sultanate period the assignees could not be controlled and that the burden of revenue increased over time; resulting in the growing impoverishment of the peasantry, prolonged famines and peasant revolts led by the upper peasant strata, khots and muqaddans, who saw in the crisis of agriculture and the state an opportunity for self-aggrandizement.

That this is indeed how the Moghul empire collapsed is now a well documented story. With the growing need for revenue there was a proliferation of jagirs and even the sale of new zamindari rights which were

now incorporated within the main revenue system. There was thus a built in tendency for the burden of revenue to rise. What made matters worse was the system of jagir transfer which the Moghul court employed to keep their jagirdars under control. The jagirdars were in any case an urban, often foreign, class of rulers alienated from the peasantry and with little interest in agriculture. The transfer system only reinforced their tendency to squeeze the peasantry further and engross as much surplus as possible from one jagir before they were transferred to the next. One wonders how things might have turned out if instead of jagir transfers the Moghul emperors had devised another system of control like the shankin-kotai of the Tokugawa shogun in Japan. As it was the jagirdars intensified their oppression of the peasantry, impoverishing them and finally provoking them to revolt. The Satnami revolt of the 17th century, the Sikh revolt, the revolt of the Jats and finally the rise of the Marathas were but the major political symptoms of a long agrarian crisis that destroyed the Moghul empire.^{23/}

In the context of our proposition that the development of manufacturing industry ultimately depends on whether the surplus extraction mechanism in agriculture is conducive to agricultural progress or not, an apparent paradox which needs explanation is the high degree of commercialisation/monetisation and rise of a large urban community engaged in proto-industrial production in spite of a stagnant and eventually deteriorating agriculture

^{23/} The story of the Moghul empire is not of course the whole story of pre-colonial India. There are examples outside the northern imperial region, as for instance Vijayanagara state in South India, where different surplus extraction mechanisms were employed which were more conducive to the progress of agriculture. See Stein (1982).

in Moghul India. As it turns out, the explanation of this paradox in fact helps to illustrate and substantiate our thesis. By carefully reconstructing the flow and disposal of surplus, on the basis of some reasonable assumptions, Habib has shown that between 15% to 25% of the total population was urban and that this entire population, including those engaged in manufacture, was completely dependent on the size and disposal of the extracted surplus of agriculture.

Half the surplus ($\frac{1}{2}$ of gross produce) was probably retained by zamindars and other surplus appropriators in the rural areas, the other half accruing to the jagirdars and the Moghul court. The bulk of these components was spent as emoluments of retainers and soldiers and therefore consumed as food. However since surplus was first extracted in cash its consumption entailed the purchase of food. Hence the relatively high level of commodity flows and monetisation. The remaining part of the subsistence of soldiers and retainers, e.g., clothes, was spent on manufactures along with that part of surplus spent on military equipment and the luxury consumption of the ruling class. These were the three components of the market for manufactures at that time. Hence both the urban population and manufacturing industry survived entirely on the flow of the surplus. Rural-urban trade was really a one way flow of food and some raw materials with relatively little flowing in the opposite direction. Since the prospects of the urban population and urban industry depended very largely on the flow of surplus from agriculture they were inevitably engulfed by the same agrarian crisis which destroyed the Moghul empire.

India: The Colonial Period

As an illustration of the link between surplus extraction in agriculture and the growth of manufacturing industry, the colonial experience of

India is best seen as two distinct phases divided, as a convenient benchmark, by the war of 1857. The colonial motive in India changed between these two periods and with it the role and mode of surplus extraction also changed.

The pre-existing Moghul mechanism of surplus extraction through revenue was left intact by the East India Company in the territories it first conquered under the formal guise of acquiring the diwani of Bengal and the jagirs of the Northern Sircars. The new element that came with the Company's initial conquest was the disposal of this flow of surplus. It was now re-deployed, net of the costs of colonial establishment including the army, as capital in their original business, i.e., the acquisition of Indian commodities at a cheap price in a monopsonistic market and their resale at high prices in a world market where the monopsonistic buyer of India now appeared as a monopolistic seller. We might ask whether capital has ever had it quite so good at any time, anywhere else in the world. At the base of this tribute ~~to trade~~ trade mechanism of super profits was the land revenue and therefore the companies primary goal at this time was to maximise revenue.

However, short term revenue maximisation through raising the levy could easily damage the long term flow. The more far sighted among the Company's officers were anxious to squeeze the goose but not so hard as to kill it (Had they perhaps learned a quick lesson from the Moghul debacle?). Surely this was what the much debated Permanent Settlement was all about, to have a new class of prosperous landlords to ensure moderate but stable flow of revenue. Things did not turn out quite as expected for in the immediate aftermath of the Settlement land prices were

falling and the new zamindars often defaulted on revenues. Land transfers through sale, auction and foreclosure of mortgages became common. Meanwhile the articulation of Indian commodity markets with world trade through the Company-disrupted internal trade and erstwhile merchants and money lenders now entered the market for land.

Thus by the beginning of the 19th century colonial penetration had already wrought a number of significant changes in land relations. It had institutionalised private rent property in land, correlatively initiated the formation of a land market and given rise to a new class of absentee landlords. Change had occurred, but no change conducive to the development of agriculture since the system was still, as it had always been through Sultanate and Moghul times, what we have called an A-type system. The surplus producing peasant organised production but he had little interest in improving cultivation since there was a multiple group of external agents who appropriated the whole surplus and could be expected to also grab any potential gains in productivity. While the companies levy was fixed, nothing prevented the zamindars and the thickening layer of intermediaries between them and the peasants, from raising the rent. In fact by the second decade of the 19th century the idea of the Permanent Settlement in a sense came into full bloom. By now, with revenue fixed but prices and rents rising, the zamindars came to engross huge wealth and also enjoyed tremendous capital gains since land prices too were rising. However, unlike in English agriculture, no substantial strata of rich peasants appeared who could rise to the class of large tenant capitalist farmers, share the surplus with landlords and re-deploy a part of it to finance the development of their farms. Surplus was being extracted by progressively more severe extortion of the peasantry while agriculture remained stagnant.

Colonial policy on the land question now changed and in regions outside Bengal the share of ^{revenue in the} surplus was sought to be raised through different settlements. Predictably, the landlords in the new settlement areas discovered that the British colonialists were evil exploiters to be ousted in collaboration with their true allies, the peasants! The war of 1857 was in fact fought with the greatest ferocity in precisely those areas where the British sought to raise their share of the surplus. As in the peasant revolts of the 14th century, and again against the Mughals in the 17th and 18th centuries, the peasants were once again being led in revolt against the imperial power by a self-seeking superior class which had in mind self-aggrandizement and their own share of the surplus, not the welfare of the peasant.

In a formal political sense the revolt failed, but for the landed class it did achieve their limited ends. Colonial policy on the land question now firmly and finally shifted in favour of nurturing the landlord class as a prosperous locality. However the war of 1857 was not the only reason for this policy shift, probably not even the real consideration underlying it. For, the needs of colonialism in India had now changed radically. Already from the time of the Napoleonic wars, the initial quest for surplus extraction in the colony came increasingly into conflict with the need for a colonial market. With the maturing of the industrial revolution in England it was no longer primitive accumulation that metropolitan capital required. Instead it required a market to realise the massive surplus production of English industry which had already outgrown the absorptive capacity of its own home market. Additionally it now required a growing volume of raw material supplies from the Indian colony to feed English industry.

The agrarian barrier to industrial growth was now in operation, but it was operating in a peculiar manner, internationally, via the colonial connection between English industry and Indian agriculture. The surplus extraction mechanism installed in Indian agriculture by the colonial state kept agriculture depressed. But English industry required a dynamic agriculture in the colony to realise the surplus produced at home and to supply it with the necessary raw materials. For a while this conflict between different colonial needs was postponed by the triangular trade between India, China and England. But after the war of 1857 the conflict was clearly resolved in favour of the need for markets and materials in the Indian colony.

Revenue ceased to be a major concern and its share in the surplus was allowed to dwindle. The corresponding rise in the share of rent, reinforced by the rise in agricultural prices, now forged a firm alliance between the Indian landlords and the imperial colonial government which replaced the East India Company. The second phase of colonialism also witnessed the growth of railways in India. On the one hand this generated demand for the English steel and engineering industries and on the other it efficiently linked English agro-based industries with their raw material bases in the colonial hinterland. Indian agriculture in turn became more commercially oriented and with the deeper penetration of merchant and money lending capital into agriculture a new multi-channel mechanism of surplus extraction started operating with profits from usury and trade placed alongside rent.

From the beginning of the 20th century, more particularly after the First World War, tariff protection to infant Indian industries and other policy changes mark yet another turn in colonial policy. But from our



point of view, i.e., the effects of the surplus mechanism of agriculture, this period marks no new departure. We see in Indian agriculture in these final decades of colonial rule the bitter fruits of the intensified surplus extraction mechanism which had already started operating by the latter half of the 19th century along with the greater commercialisation of agriculture. The value productivity of land remained stagnant while the increased absorption of a growing population on land progressively reduced the land: man ratio, such that labour productivity actually declined. What made matters worse was that ^{this} deterioration of agriculture was not evenly spread across regions and crops. The productivity in commercial crops was in fact rising, as also its share in the total cultivated area, mainly thanks to the development of irrigation in some strategic regions like the Punjab. The whole brunt of the deterioration was thus borne by food crops and the regions relatively specialised in the production of these crops, especially rice.

The great puzzle of this period is the rise in population under these conditions. The fall in death rates as a consequence of improvements in public health measures is only a description of the puzzle, not its explanation. Better health measures notwithstanding, people must eat in order to stay alive and the evidence seems to suggest that food supply in this period could not keep pace with population growth. The per capita availability of foodgrains, after including imports, appears to have declined from over 170 kg per annum in 1921-22 to less than a 150 kg per annum in 1938-39 (Chandra 1982).

India: The Present period

Thus at the time of political independence industrial growth could not proceed on the basis of a long agrarian revolution of either type-B as in England or type-C as in Japan which prepared the ground for the industrialisation of those countries. Instead it faced a stifling agrarian system of type- and the associated tendency of agricultural retrogression, particularly in the

case of foodgrains. In fact Indian industry had faced this problem of a backward agriculture, and hence a constricted home market, from its very inception around the turn of the century. Tariff protection from the 1920s brought only partial relief. Given the dependent relationship between industry and agriculture in a transitional economy along the lines discussed in section 2 above, it follows that the industrialisation of India must now proceed, it can only proceed, along with a simultaneous agrarian revolution. To judge the prospects of this happening we must now turn to the facts of the contemporary situation.

Land reform legislation in the years following independence promoted the emergence of a small class of rich peasants who were able to acquire ownership of the land which they had earlier cultivated as tenants. This phenomenon constitutes an element of the transformation of an A-type agrarian system, in our terminology, to a B-type system via an intermediate C-type situation. In other words a surplus producing peasant tenant is first successful in retaining the potential gains of productivity, along with the surplus, for himself (shift from A to C) and eventually grows into a surplus appropriating capitalist farmer who now employs others to produce the surplus under his direct supervision and organisation (shift from C to B). The phenomenon was given an impetus later by the rise in agricultural prices. However this, 'peasant capitalist' path of agrarian change is relatively weak in India because land reform legislation was such that it was possible for most landlords to evict their tenants or derecognise them officially even when they continued to cultivate the land. Hence unless there are further and stronger land reforms the dominant path of change from an A-type agrarian system to a B-type one can only be the direct transformation of landlords themselves into capitalist farmers.

However, as Utsa Patnaik has recently argued, absolute ground rent is a formidable barrier to this path of change.^{29/} Even if we ignore the case of premium land, where an element of differential rent may raise the share of rent to as high as 70%, pre-capitalist ground rent of around 50% of the gross produce seems typical. Far from leaving the small tenant with any investable surplus, this high rate of rent obviously often cuts into subsistence consumption of the peasant household. The high rate of pre-capitalist ground rent derives from the extremely high pressure of population on land and the intensive competition for land. This competition entails at the same time an equally high rate of capitalist ground rent, i.e., the pure claim arising out of monopoly of landed property, which must be deducted before calculating the rate of profit on invested capital. This holds regardless of whether the land is leased by a capitalist tenant or is cultivated by the landlord himself. In effect, since land must yield the normal rate of profit over and above rent, it means that the share of surplus in gross produce has to be phenomenal in order to induce capital formation in agriculture.

Given this formidable barrier to investment in agriculture, we may expect innovative activity to be low in agriculture such that land productivity is likely to increase rather slowly. Labour productivity under these conditions is likely to be actually declining, as I had argued in an earlier paper, since the slow growth of land productivity proceeds in a situation where the land: man ratio is continuously deteriorating (Mundle 1983). This has now been confirmed in estimates published by Bhalla and

^{29/} For a very lucid discussion of the nature of rent, its different forms and its implications for Indian agriculture see Patnaik (1983). In a closely related paper Sheila Bhalla has examined the factors which determine both the mode as well as the level of rent payments on the basis of her Haryana sample survey (Bhalla 1983).

Alagh which show that between 1962-65 and 1970-73 male worker productivity for the country as a whole was declining (Bhalla & Alagh 1983). There are of course large variations between different regions. We shall return to this important question of inter-regional variations later. For the moment let us note that in view of the argument developed in section 2 above, and the data presented there on the high degree of dependence of Indian industry on Indian agriculture, the stagnant or declining productivity of labour in agriculture should lead us to expect a low long term rate of growth in manufacturing industry also and therefore for the economy as a whole.

This expectation of 'static expansion', where the slow growth of output is offset by the growth of population such that average levels of living remain unchanged, is again dramatically confirmed by Chandra's long term series of per capita Net Material Production (NMP). Thus per capita NMP in the 1970s turned out to be only 12% higher, or 1% higher or even 5% lower than the colonial period peak, depending on whether we take the series at 1960-61 prices or 1938-39 price or 1948-49 prices (Chandra 1982). The fact of a more or less constant average level of living between now and the colonial period has in fact been stretched back to Akbar's times by some recent estimates.

This phenomenon of unchanging average levels of living across centuries perhaps becomes more credible when we situate it in the context of other remarkable continuities in India's agrarian history. Thus, all through the period from, say, the 13th century upto the present agriculture in India has always been organised under stifling surplus extraction systems of our type-A, all through this period the share of the surplus has remained fixed at about half the gross produce and all through this period agriculture has in general remained stagnant at a very low level of productivity. In noting these continuities we should ~~not~~ of course disregard the

many important elements of change, some of which have been noted in our brief historical review. But they do underline the phenomenal capacity of retrograde agrarian relations to retard the pace of material progress.

Seen in this long view, it appears that the deviation of the present period which really calls for an explanation is not the deceleration of industrial growth since the mid-sixties, for slow growth is the normal condition, but rather the brief spell of accelerating growth for about a decade and a half after independence. That spell, we now know, was partly the result of clamping down protective trade barriers to create a reserved market for Indian industry and partly the result of a spurt in public investment. Once the opportunities of easy import substitution were exhausted and public investment faltered the system settled back to its normal of 'static expansion'.

Within this overall picture of stagnation do we find symptoms that may point to the prospects of a successful transition, i.e., a real industrialisation of the Indian economy? In an earlier paper I had drawn attention to the various ways in which capital in manufacturing industry has been attempting to reorganise itself to create fresh possibilities for its self-expansion (Mundle 1981a). However, as we have argued here, it is in the very nature of a transitional economy that the prospects of a successful transition are determined not in industry but in agriculture. Thus ground rent, which in the first instance is a barrier to agricultural development, is also for this very reason a major barrier to industrialisation.

For gauging the limits of this barrier it is now useful to look at the very significant inter-regional variations in the Bhalla-Alagh estimates

of labour productivity trends. Thus, within the aggregate picture of declining labour productivity we find that out of 281 districts there are actually only a 109 slow growth or negative growth districts where labour productivity declined significantly. As against this there are 100 high growth districts where labour productivity has risen quite significantly. In 72 medium growth districts labour productivity has not changed significantly either way.

We note that all the seven districts of Haryana state, from which Utsa Patnaik and Sheila Bhalla have drawn their data, belong to this high growth group. So do the 11 districts from Punjab. Evidently, the barrier of absolute ground rent, though high, has not been able to block rapid agricultural progress in this region. Sheila Bhalla in fact notes a number of dissolvent factors at work which tend to reduce both the incidence of tenancy as well as the level of rent, high wages being especially significant among the latter. Moreover the rising labour productivity in these two states in particular has been achieved inspite of a substantial inflow of labour, attracted by the relatively high wage rates in the region. In other words the region has also overcome the barrier of population pressure on land.

The Punjab-Haryana experience shows that the necessary agrarian pre-conditions for a successful transition are in fact getting established in selected parts of the country. So far the location of the high growth districts has been regionally concentrated in a north-central belt, with the five states of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh accounting for 66 out of the 100 districts. If our reasoning has been correct the possibility of successful industrialisation depends quite crucially on how far the agrarian developments of this region get extended to the rest of the country.

(Sudipto Mundle)

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