

***CAPITALIST TRAJECTORIES OF GLOBAL INTERDEPENDENCE AND WELFARE  
OUTCOMES: THE LESSONS OF HISTORY FOR THE PRESENT***

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## *Introduction*

On the theoretical plane it has been argued even by those adhering to a radical perspective, that in the era of globalization the classical 'agrarian question' no longer exists. The problem of transforming the social relations of production within the agrarian sector of a developing country towards capitalist production, assumed to be necessary for raising productivity and for mobilizing the agricultural surplus, has become quite otiose since free, large capital inflows have eased the constraint of resource mobilization.<sup>1</sup> A frequently heard statement in the Indian context is that the persisting problems of peasant agriculture show that it is too 'inefficient' to compete globally. Displacement of small peasant producers from land owing to increasing demands for industry, residential construction and commercial activities by the corporate sector is to be expected as a necessary to accumulation. The population subsisting on agriculture should largely shift away to other more paying activities according to this view, and the corporate sector should enter agriculture directly to raise the technological level.

There are a number of implicit assumptions which underpin these arguments, which are not always spelt out but are mistakenly taken for granted as being correct. The first assumption is that productivity today is much higher in the agriculture of the developed countries compared to that of developing ones since by now after two centuries of capitalist growth, the technological level in the former has been raised far above that of peasant agriculture. The assumed successful capitalist transformation in today's advanced countries and resulting rise in productivity, enabled them to meet the wage goods and raw materials requirements of their industrialization either entirely from their own agriculture or partially through exchange between the countries making up

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<sup>1</sup> H Bernstein articulated this view in a paper titled 'Is there an 'Agrarian Question' in the 21<sup>st</sup> Century?' (Bernstein 2006).

today's advanced nations, so interaction with other parts of the world was not essential for their industrialization. In short in this view any role for the colonies in the past or developing countries in the present, is ignored.

The most important inference is that the small peasant population evicted and displaced from agriculture by the emerging capitalists seeking to establish a larger scale of production, was absorbed productively into other faster growing sectors especially industry. Such 'primitive accumulation of capital' involving the grabbing and centralizing of peasant property into fewer hands, while it may have been painful for its victims, eventually turned out to be for the greater good for it was the essential precondition for the transition to a far more productive and advanced economic system. So goes the accepted understanding.

It is usually taken for granted that today's developing nations will follow the same or similar trajectories of development as today's advanced nations did, with a reduction in the share of the primary sector in both the nation's output and in its employment. Labour and population would face displacement from agriculture, but with the much faster expansion of the secondary and tertiary sectors characteristic of what Simon Kuznets had called 'modern economic growth', displaced populations would be re-absorbed into the latter sectors along with a fast rate of urbanization of the population.

However the assumptions underlying the view sketched above, turn out to be untenable when we study the actual history of the development of industrial capitalism. Nations build up their own mythical origins and history no less than do communities. The scenario sketched above does serious violence to what actually happened in history because it ignores the specific nature of the exploitative interaction between today's advanced and today's developing nations, an interaction without which capitalist industrialization at the core, would hardly have been possible. This exploitative interaction is sought to be re-created in new forms in the current era and this very fact makes it impossible for

developing countries, to follow the past growth trajectory of the advanced countries.

## ***2. There was 'Primitive Accumulation', but no 'Agricultural Revolution' preceding Industrialization***

Two separate processes of economic and social change tend to get mixed up when we talk of agricultural revolution preceding industrial revolution in today's advanced countries. The first is the displacement of the small peasantry through land enclosures and other means, and the second is the rise in productivity which is supposed to have resulted from the larger scale capitalist production which followed such displacement. The first is a part of the process of 'primitive accumulation of capital' which Marx famously described as follows:

"The capitalist system presupposes the complete separation of the labourers from all property in the means by which they can realize their labour. As soon as capitalist production is once on its own legs, it not only maintains this separation but reproduces it on a continually extending scale. The process, therefore, which clears the way for the capitalist system, can be none other than the process which takes away from the labourer the possession of his means of production; a process that transforms, on the one hand, the social means of subsistence and of production into capital, on the other, the immediate producers into wage labourers. The so-called primitive accumulation, therefore, is nothing else than the historical process of divorcing the producer from the means of production." (Karl Marx *Capital* Vol.1 Part VII Chapter XXVI).

This process of primitive accumulation certainly did occur not only in the 18<sup>th</sup> century through enclosures but in to the 19<sup>th</sup> century as regards Ireland

where tenant farmers were evicted on a mass scale during and after the great famine of 1846-7 (Slicher van Bath 1963). It led to the formation of a large property-less underclass, potentially an army of manufacturing workers, but in fact only a fraction of this class was actually re-absorbed into productive employment within national economic boundaries. Marx's insight was that capital requires the formation and expansion of a 'reserve army of labour' which keeps down wages, so that it leads necessarily to the accumulation of wealth by the minority at one pole and to misery and deprivation of the majority at the other pole. This insight has been attacked as a wrong prediction by citing the rise in working class living standards which took place in industrial Europe. In the long run however Marx has been proved to be more correct than his myopic critics, once his system is opened to include global flows of labour and capital (for estimates of such flows see Kenwood and Loughheed 1971, K.S Jomo 2006). Capitalist accumulation did generate an expanding reserve army, but heavy out-migration of the unemployed to the New World based on seizure of land and resources from indigenous populations, continuously reduced the metropolitan reserve army of labour and allowed a rise in working class bargaining power. In the current era of globalization no such open frontiers exist, even for advanced country populations. The share of wages in national income is constant or shrinking in developing countries and in industrial nations alike.

The second process, the formation of larger scale capitalist farms, is supposed to have raised productivity to a sufficient extent to meet the expanding wage goods and raw materials needs of industrialization. It is this second process which did not actually take place although it is wrongly assumed to have occurred. Consider the most important food staple and the wage-good of the labouring poor, wheat for making bread. Detailed research by economic historians shows that the output per head of grain actually declined in Britain during the second half of the 18<sup>th</sup> century when the maximum enclosures and productivity rise was supposed to be taking place, and while

recovering a little in by 1850, still remained below the level of 1700. A non-inflationary growth path was not possible and rapid food price inflation took place during the Napoleonic Wars, 1793 to 1815, pushing the labouring poor to starvation and causing food riots even as the factory system grew and prospered (Chambers and Mingay 1971).

The problem did not arise from the prevailing Corn Laws alone, which restricted the import of cheaper corn (wheat) from abroad. The basic problem arose because output growth was so very slow despite all capitalist enclosures that it fell below the accelerating population growth rate. The Corn Laws simply aggravated further the basic problem of inflation in food prices owing to domestic supply shortage, by not allowing duty-free imports until domestic prices reached a very high levels. The most important political economy issue for 50 years in Britain was the agitation for cheaper bread, and hence for free imports of cheaper foreign corn, an agitation which united the manufacturers and fledgling working class. David Ricardo's *'Essay on the Influence of a low price of Corn on the Profits of Stock'* (1815) argued for free corn imports even while maintaining silence on the raising of tariffs against imports of Asian textiles. This prolonged agitation itself is a telling indictment of the failure of 'agricultural revolution' to provide its wage goods requirements.

In 1988 I wrote a paper titled 'Was there an agricultural revolution in England?' in which I presented the argument given above and made detailed calculations which are summarized in Appendix Table 1, showing a one-eighth to nearly one-fifth decline in per capita corn output depending on the population series adopted.<sup>2</sup> More recently a similar conclusion has been reached by a number of economic historians researching agricultural growth in Britain, and a debate has taken place between them and the upholders of the earlier standard view of successful agricultural revolution (Overton 1996a, 1996b,

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<sup>2</sup> The paper was also presented to a seminar in the School of Oriental and African Studies, London in June 1992. It has circulated for two decades among students, and a shortened revised version was presented to the Indian History Congress in May 2010, and published in 2011..

Allen 1998, 1999, Brunt 1999, Afton, Beckett and Turner 2001). Table 2 shows their calculations of output, which when divided by population corroborate my earlier finding of a decline in per capita output by one-fifth between 1700 and 1820. While per worker output within agriculture did rise, it did not rise enough to maintain at least the same per head output for the population, thus violating the essential condition of success in meeting wage good needs.

The reason industrialization could proceed without being hampered by agricultural failure, lay in colonial imports which did not have to be paid for by Britain in the sense that these imports created no external liability for the British economy since local producers were 'paid' out of taxes they themselves contributed to the state. In India the colonial state guided and operated from Britain, extracted taxes from peasants and artisans, and used a portion of tax revenues to purchase their products including exported crops like wheat. Even when wheat was purchased from temperate lands like the European Continent and USA, in the earlier period – the 18<sup>th</sup> century- direct re-exports of tropical colonial goods paid for a large part of these imports. Later from the 19<sup>th</sup> century onwards, the exchange earnings of colonies which exported to these lands were appropriated and used to pay for a large part of temperate imports into the metropolis through a continuation of the so-called multilateral payments system (Saul 1960), which in essence functioned on the basis of colonial transfers. The exact mechanism of colonial exploitation and appropriation of foreign exchange earnings has been discussed elsewhere (Patnaik 1986, 2006). There is little doubt that other European countries would show a similar failure of their agricultural revolution and a similar dependence on their colonies, particularly the Netherlands which controlled Java and which had even larger dependence on re-exports of tropical goods to pay for its temperate imports, than did Britain (Maddison 2006).

Interestingly in Japan too we find that early industrial transition was marked by domestic rice shortages, and only the deliberate extraction of rising tax-financed rice imports from its colonies, Korea and Taiwan, permitted it to maintain about the same level of availability for its population by the 1930s as in the 1870s ( Penrose 1940, Hayami and Ruttan 1971). Per head consumption of rice and average calorie intake fell substantially in Japan's colonies (Grabowski 1986).

W A Lewis (1978) very clearly articulates the common misconception that there was higher land productivity in Britain, taken as representing the industrial nations in general, compared to the tropics and makes this idea the lynch-pin of his explanation of the great divergence among nations. The product wage IN Europe was higher than in the tropics owing to allegedly higher yields, thereby migrants from Europe to new lands also showed higher product-wage than migrants from Asia to plantations.

'the yield of wheat by 1900 was 1600 lbs. per acre as against the tropical yield of 700 lbs. of grain per acre' (Lewis 1978, *The Evolution of the International Economic Order* p. 14).

But there is a fallacy in the comparison Lewis makes, because 'productivity' has no meaning without a uniform time dimension being clearly specified, which he fails to do. Over one year, an acre of land in Britain may well have produced 1600 lbs of wheat but it could produce nothing else since there was only one growing season in cold temperate lands. In the tropics crops can be produced all the year round. Over the same one year, an acre of land in the tropics produced not only 700 lbs of grain but also a second crop - either another crop of grain, or cotton or jute or vegetables, plus often, a third crop of gram or lentils. The term 'crop rotation ' in temperate lands refers to crops grown over *successive years*; while the same term in tropical lands refers to crops grown in *successive seasons* within the same year. Despite all technical change in the advanced countries, by 2007 India, with smaller cultivated area



than the USA, produced annually a larger total tonnage (819 million tons) of all crops than the USA (644 million tons).

As for China, its even more intensive cultivation developed over centuries, and consequent high land productivity was legendary ; by 2007- China produced 1275 million tons adding up all crops from a total arable area less than two-thirds of that of USA – about double the latter’s output (Table 6). China’s output per hectare was over three times that of the USA, while India’s was 1.4 times higher. True, technical change in Northern agriculture meant much higher output per worker or per head of population, but this was only achieved by substituting dead labour – fertilizers and machinery- for living labour, which require large inputs of fossil fuels to produce and to operate respectively. The ‘energy balance’ namely the ratio of the energy embodied in all the inputs required to produce a unit of final output, to the energy obtainable from that unit of final output, is more unfavourable in temperate lands and the ratio shows a rise over time.

Not only W A Lewis but most other writers completely ignore the growing import dependence of today’s advanced countries on cheap primary imports from tropical lands, used for diversifying their consumption baskets and output structure. They show little awareness of the tremendously important role re-exports of tropical goods played in boosting the global purchasing power of exports from these countries. Global patterns of specialization of production were deliberately engineered, were maintained by force exercised through direct political control under colonialism, and were very far from the model of voluntary specialization and exchange leading to mutual benefit, expounded in David Ricardo’s fallacious theory of comparative advantage.

Ricardo’s theory using a two-country, two commodity model, said that trade takes place because even when the cost of production of both goods is lower in one country than the other, provided the relative cost of production is different, both trading parties benefit from specialization and exchange in the

sense of consuming more of one good for no lower consumption of the other good. Relative cost is the number of units of a good which a country can produce by withdrawing labour from the production of one unit of the other good. I have pointed out elsewhere that the fallacy in this theory arises from the assumption 'both countries produce both goods'. This assumption is essential for defining relative cost at all, but the assumption is not true, since a temperate country has never produced and cannot ever produce tropical crops. Say Britain or Germany import Indian rice/ tea/cane sugar and export spinning machines. The relative cost, namely number of units of rice/tea/cane sugar producible by reducing machine output by one unit and diverting the labour released to these goods, can be obtained for India. But such relative cost does not exist for Britain and Germany which have zero output of rice/tea/cane sugar since these simply cannot be produced at all. Where the assumption is not true, there is no mutual benefit from trade. Trade did take place in which cold temperate lands imported tropical products and exported machine made goods, but such trade had nothing to do with comparative advantage and mutual benefit. It had to do with the fact that tropical lands are highly bio-diverse and can produce crops which are desired by temperate advanced countries for consumption or as raw material, which they could never produce, and which they sought to acquire through establishing political control. The bulk of world trade in the 19<sup>th</sup> century was in primary products (see Table 3) and the bulk of this in turn were crops which could only be produced in warmer climes.

Far from benefiting the tropical developing country, specialization and export of primary products became positively harmful because it always led to a decline in the land and resources devoted to food grains, the basic staple the local population required, and because food grains too were exported. Very often the colonial masters taxed the population so heavily as to force a shift in local consumption towards inferior food staples (millets, potatoes) while

the superior grains (wheat, rice) were exported to the metropolis. Not only did nutritional standards see decline, colonized populations were periodically plunged into famine.

Few theories have done as much harm to rational thinking, as Ricardo's logically incorrect theory of comparative advantage which embodies a particular type of material fallacy – the 'converse fallacy of accident' or the converse of Aristotle's *A dicto simpliciter ad dictum secundum quid*. A highly specific assumption is made – 'both countries produce both goods' to draw the inference that specialization and trade is mutually beneficial to both parties, and then this inference is improperly treated as a general one, even where the assumption is not satisfied.<sup>3</sup> Trade patterns which were actually the result of military conquest, setting up of slave- based plantations or un-free labour set to producing export crops for the benefit of metropolitan centres, have been sanitized and rationalized as being 'mutually beneficial' for slaves and masters alike. Fiction and apologetics replace intellectual honesty in economic analysis. My paper 'Ricardo's Fallacy' points out that the material fallacy is supported and compounded by a verbal fallacy since Ricardo repeatedly talks of 'growing wine', a term which makes no sense.

W Arthur Lewis (1978) too ignores real economic history in the same manner by developing a modified Ricardian theory to say that because of allegedly higher land productivity in temperate lands – an incorrect statement of fact namely a material fallacy, as we have already seen – the 'product wage' was higher for the English and European out-migrants generally and lower for the 'Chinese coolies' and this is why the Australian ended up with a much higher standard of life than 'Chinese coolies' did. The same argument

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<sup>3</sup> Whatever Ricardo's own position may have been, the subsequent use made of his theory leads to apologetics. The trade in wine and cloth between Portugal and England was not owing to 'comparative advantage' which was not even definable for England which could not produce grape wine, but resulted from Britain's naval and <sup>3</sup>diplomatic dominance over Portugal allowing it to extract the Methuen Treaty in 1703 giving non-agricultural market access.

would be applied to explain the higher wage of white settlers in South Africa or in Canada.

The real reason for higher Australian or South African wage than in China, were very different. Britain appropriated the entire Australian land mass relegating its original inhabitants to the same fate as it had the Amerindians, while it followed an equally exclusionist policy vis a vis the indigenous black population in South Africa, appropriating their best lands and relegating them to 'homelands'. These vast areas permanently grabbed through a process of primitive accumulation were used for exporting Britain's criminal underclass and later for settling emigrants. It is easy enough to understand the strong impetus to emigrate from Britain, a country which could not feed its people at the same level by 1850 as it had in 1700. To fill the consumption gap Britain colonially exploited Ireland so severely that it caused a massive famine, carrying off one-eighth of the Irish population in 1846-7 and initiating a long period of demographic collapse. The high 'product wage' of emigrants from Europe was not because of high productivity in England or other European countries, but because of land-grabbing and resource-grabbing on a scale never seen before in history, which gave an endowment per household to the settlers which was usually far larger than they had commanded in their home countries where they were either land-poor or entirely landless. The human cost to indigenous populations was very high especially in the Americas.<sup>4</sup>

To sum up, the failure of capitalist agriculture in Northern countries has not been recognized at a conceptual level and a large part of the reason is that this failure did not constrain their industrial expansion. But this lack of constraint itself arose solely from the forcible access they acquired to tropical lands with their superior productivity and bio-diversity. More rarely they also acquired access to temperate colonies – of which only Ireland remained by

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<sup>4</sup> Over nine-tenths of the indigenous population of the Central American civilization was destroyed over the century following Spanish conquest and the settling of Hispania.

the 20<sup>th</sup> century, the only region in Europe to have halved its population over less than a century after the colonial exploitation induced the shock of the great famine of 1846-7.

As advanced countries enjoyed more and more diversified imports-based consumption baskets, the availability of food grains for third world populations declined. This inverse relation, namely rising primary exports and decline in food grains output /availability, can be established very firmly on the basis of the historical data. Nutritional decline and in extreme cases famines were the result – this is the most important adverse impact of export-oriented growth and it is a result in present-day India and China as well : both countries have seen deteriorating average nutrition in the last fifteen years accompanying high GDP growth.

The reason is not far to seek. Land is not a product of human labour – as Karl Marx had pointed out in a striking formulation, therefore the ‘price of land’ is an irrational category. What we understand as the ‘price of land’ can only be the capitalized value of the product of the land or of capitalized value of the income to be drawn from the land. Land, not being itself a product of human labour, cannot be augmented at will, it cannot be ‘produced’. Greater external demands on a developing country’s limited land simply means that less is available for satisfying the needs of the local population. And if the purchasing power of local populations can be restricted through heavy taxation and measures of fiscal compression, so much the better for the advanced countries which can then access the productive capacities of these foreign lands simply through the market, which responds only to purchasing power and not to needs. Indian and other developing country lands then produce more and more products for filling up supermarket shelves in the North at the expense of less and less food and basic staples for their own populations.

### ***3 The Export of Unemployment and constraints on such export on developing countries***

Accumulation through displacement of small producers combined with technical change under capitalism continuously generates unemployment : profits are the driving force of investment and capitalists are concerned neither with ensuring a high level of employment nor with maintaining livelihoods for labouring populations.

The early industrializers overcame the problem of growing unemployment inherent in their capitalist growth and technical change, simply by exporting their unemployment abroad, an option which is not open in any serious way to today's large labour surplus economies like India and China. The export of unemployment took place through colonization and imperialism and appeared in multifarious forms. The most direct form of export of unemployment was the physical migration of population. The precondition for this was the seizure of enormous tracts of land by the West Europeans from indigenous peoples in the Americas, South Africa, and Australia, and their permanent occupation by the in-migrants. 'Land' in this context means not just crop land but includes all the natural fauna, the rich water, timber and mineral resources of these occupied regions.

In Britain nearly half the increment to the population every year was migrating for permanent settlement abroad for a century. Emigration from Britain alone accounted for 37 percent of all emigration from Europe between 1821 and 1915 (Table 4).<sup>5</sup>

Unemployment was also exported by industrializing countries through the flooding the subjugated already populous tropical colonies with cotton textiles

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<sup>5</sup> Emigrants numbering 7.2 million made up 46 % of the observed population increment of 15.5 million in Britain over the period 1821 to 1880. This process accelerated between 1880 and 1915 when 9 million people emigrated, while the observed population increase was 11.5 million over this period. Emigration thus amounted on average to nearly half of the actual annual increment to population.

and other manufactured goods under discriminating commercial policy which kept these markets compulsorily completely open to imports, while the home market was protected from their handicraft manufactures for nearly 150 years.<sup>6</sup> While employment and wages rose in the industrializing country with output expanding at about double the rate of domestic absorptive capacity, the other side of the coin was that in the colonies manufactures employment went down sharply resulting in de-industrialization.

As the unwilling recipients of the export of unemployment from today's advanced countries, India the former colony and China the former semi-colony, had ended up by the mid-20<sup>th</sup> century with mass poverty and with significantly tertiarized economies -a higher share of services and lowered share of both agriculture and industry in GDP- compared to their initial states. They inherited very high levels of unemployment and under-employment, which became a matter of serious concern as they sought to pursue an independent path of national development. The choice of techniques question was much discussed in the early decades, the 1950s and 1960s, and it was recognized in both countries that industrialization with employment generation meant 'walking on two legs', to borrow Mao Zedong's words - capital intensive heavy industries and intermediate goods production had to be built up from scratch or expanded, there had to be a simultaneous thrust for expansion in labour-intensive segments of manufacturing including small-scale and village industry, and for all this to occur in a non-inflationary way agricultural growth had to accelerate to provide the required wage goods and raw materials. This was the rationale for giving priority sector status to small scale industry and agriculture in India as regards credit.

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<sup>6</sup> It is a notable fact that leading historians of industrialization and technical change in advanced countries (E J Hobsbawm, *Industry and Empire* D S Landes *The Unbound Prometheus*) make no mention of these crucial discriminatory commercial policies in their writings though they were in operation for over a hundred years.

However though the fastest expanding segments of manufacturing output in the first 15 years of Indian independence logged 9 percent annual growth rate, the associated employment growth was only 3 percent. It was already very clear and widely recognized that no visible net shift of the workforce out of agriculture could be expected even at such high manufacturing growth rates. Subsequently the elasticity of employment with respect to manufacturing output has been falling steadily and especially sharply after liberalization in the 1990s for obvious reasons. Maintaining competitiveness by firms in a trade- and- investment open economy entails adopting the latest technology and the loss is in terms of employment generation. Additionally the thrust of neo-liberal reforms is always towards retrenchment of labour and 'downsizing' with a total ignoring of the impact of this on aggregate demand and hence on the inducement to invest. The combination of the two factors has led to near-zero impact of manufacturing growth on employment while for organized industry there is absolute job-loss, as is well established by now.

It was amply clear from the 1960s that industrialization even at a respectably high rate could not make any substantial dent in the unemployment and livelihoods problem especially for the rural millions. While there was never any conscious strategy of mobilizing labour for capital formation in India, an expansionary fiscal stance up to the 1980s including expanding rural development expenditures, and a system of market intervention via state procurement or commodity board procurement of crops at prices covering production costs, were together conducive to maintaining reasonably buoyant levels of activity and inducing private investment, so that employment in rural India was expanding faster than the labour force up to the early 1990s. True, the inequality of distribution of assets and incomes was not addressed and actually worsened slowly over time, but absolute downward movement of real incomes for rural populations did not take place except briefly in the mid-1960s.



In the late 1970s and early 1980s a number of studies were carried out, many under ILO auspices, which correctly argued that there was scope in poor developing countries for more intensive cultivation and greater labour absorption within agriculture and side-line activities. The intensity of cultivation was substantially lower in India compared to East Asia both in terms of material input use and labour use per unit area, and yields were capable of being raised. This technical slack could be taken up provided price –cost conditions were created to make it profitable to invest in cultivating intensively.

From the 1980s onwards however the entire theoretical discourse was radically altered by the incessant pushing by international financial institutions of conservative neo-liberal dogmas which advocate expenditure deflation and fiscal austerity no matter how high unemployment might be, and which represent a reversion to pre-Keynesian theory.

The impact of expenditure-deflating neo-liberal reforms from 1991 has been extremely adverse on both rural and urban employment and incomes because it has entailed contraction not only in public investment but in development expenditures generally, lowering the level of activity and affecting the inducement to invest of small producers especially farmers.<sup>7</sup>

A surprising aspect of current discussion on unemployment in India is the total amnesia regarding all previous literature on the impossibility of industrialization alone, leading to notable labour shifts out of the primary sector. We hear the opinion aired by many economists that it is high time the Indian labour force started shifting out of agriculture and into the secondary sector, as though it is a question of subjective wishes and not objective constraints, which are far more binding today than earlier. The prospects for labour absorption in agriculture and in industry have been worsened greatly by the public investment reducing, development expenditure deflating and labour-

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<sup>7</sup> Allocations to agriculture, rural development, irrigation and flood control, special areas programmes and small scale industry taken together declined from about 4 percent of NNP to 1.6 percent over the decade 1991 to 2001 (Plan expenditures, actual in the Finance Ministry's annual Economic Surveys),.

retrenchment policies which are at the core of economic reforms, and which are supported in the main by the same economists who argue for industrialization and more free trade as the solutions to unemployment. They choose to ignore the contradiction in their position: how public investment and expenditure deflation, fiscal austerity, 'downsizing' and reduction in public utilities employment can possibly be compatible with expanding aggregate demand and maintain the inducement to accumulate in the material producing sectors – agriculture and industry – is a question which does not appear to exercise their minds. Nor can it be seriously maintained that India is in a position to export unemployment in the manner today's advanced countries had done.

### ***3. Globally Capitalist Accumulation produces Poverty at one pole and Riches at the other***

Global interdependence in the past produced in today's developing countries, falling nutritional standards and even famine, on the one hand, and promoted underemployment and unemployment on the other. Global interdependence in the current era is producing exactly the same outcomes, the moment the attempt to follow autonomous development trajectories, was given up by developing countries under the onslaught of the hegemonic dogmas of finance capital from the late 1970s. Leading advocates of high growth in advanced and developing countries alike have tried to obfuscate and mask these adverse welfare outcomes by putting forward fallacious theories, but these negative welfare outcomes are so obvious and so blatant, that all they succeed in doing through their apologetics is to intellectually discredit themselves. It is a little difficult to explain away over one hundred thousand farmer suicides in India since neo-liberal economic reforms and trade liberalization started from the mid 1990s, as a positive result of high growth.<sup>8</sup> Over

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<sup>8</sup> K Nagaraj 2008, 'Farmers' Suicides in India'

forty farmers a day continue to commit suicide mainly driven by debt. It is more than a little difficult to explain declining per head daily energy (calorie) intake and similarly declining average protein intake in both rural and urban India, as a positive effect of 'dietary diversification'. It is hardly a credible proposition, which is officially put forward and continues to be reiterated, that over the same period that agricultural incomes became stagnant and unemployment rose sharply in both rural and urban India, poverty as officially estimated, registered substantial decline.

The truth of the matter is that capitalist accumulation has never taken place within closed economic systems. The historical conditions for the industrial transformation of today's advanced nations, lay in the primitive accumulation they practiced vis a vis other nations and regions, through direct seizure of resources by means of force. Without primitive accumulation on this scale their poorly endowed temperate lands were incapable of meeting the wage good and raw material needs of their own industrial growth. This resulted in initially in decimation of entire populations and subsequently in their enthrallment and exploitation producing declining nutrition and famine. The labour displacement caused by the mechanization associated with industrial transformation, far exceeded any notion of a normal 'reserve army of labour' and only their ability to export unemployment staved off acute social and political tensions. At the other pole de-industrialization and unemployment resulted in the global South.

After half a century of decolonization we find once more that a new phase of primitive accumulation has been launched with a more sophisticated ideology, under which developing country elites are offered integration with the global elite provided they collaborate with the economic and educational policies which will betray the interests of their own people and will once more subordinate the national interest to global capital.

Rosa Luxemburg's brilliant insight in *The Accumulation of Capital*, that capitalist expansion at the core was always at the expense of destruction of the

small –scale production of the peasant and the artisan not only within the core countries but at the global level, remains as true today as it was a century ago (Luxemburg 1963). While the main emphasis in her work was on the question of *creation of markets* for realizing surplus value – which was indeed very important – I have in this paper stressed the question of past and continuing *appropriation of land and resources*. The importance of the struggle for control over energy resources hardly needs to be emphasized. The new element is that with increasing uncertainty faced by advanced industrial nations over their control of global energy resources, there is a reversion to the land to provide energy just as was the case during the first industrialization: corn in the North and sugarcane in Brazil is being diverted on a large scale for producing ethanol. This has serious implications for food security in the South.

Since the advanced countries today are even more dependent on the qualitatively superior productive capacity of tropical lands, over the last three decades they have made ever increasing demands on these lands to produce, apart from traditional tropical exports, a new range of perishable products from fruits and vegetables to flowers. Most developing countries have succumbed to the demand to open up and engage in free trade. This produced area diversion to export crops, led to decline in the food grains growth rate which fell below the population growth rate, resulting in falling per capita output and availability of food grains. In India per capita output of foodgrains which had been rising more or less steadily between 1951 and 1993, started falling thereafter under the new policy regime of trade-openness. By 2005 the entire gain of forty years after Independence, the rise of per head net grain output from 155 kg to 185 kg., had been wiped out.

The inverse relation has been recreated with a vengeance since we find declining per head food grains output combined with fast growing per head exportables output in every important developing region ranging from India to countries in Latin America and the whole of Sub-Saharan Africa. Developing

countries were urged to dismantle their domestic foodgrains procurement and distribution systems and purchase their requirement of grains from the global exporters. In India as agricultural output growth has slowed down drastically, far from larger imports, it is a larger net foodgrains exports which has emerged. This is owing to the contraction of domestic aggregate demand following from fiscal compression and rising unemployment. The National Sample Survey data show that per capita calorie intake, per capita protein intake, and per capita cloth consumption has fallen. The nature of growth in GDP has been such as to enrich a minority which is consuming much more, while a sufficiently large majority is eating so much less than before, as to lower the overall average consumption.

As Table 7 documents using FAO-FBS data, with all its great 'success' in achieving high GDP growth and global integration, India by 2007 showed a level of per capita cereals supply and demand (namely output available for uses of all kinds after adjusting the gross output for net exports and addition to stocks), which at 174 kg. had fallen below the level of not only the African countries but also below that of the least developed countries. (For comparison, domestic cereal supply/demand per capita in South Africa in 2007 was 287.6 kg. of which two-thirds was directly consumed as food). India's consumption had fallen below that of the poorest countries in the world, the least developed countries. Cereal supply is identically equal to the demand for all uses, both direct demand for consuming as food and indirect demand for consuming as animal products raised on feed cereals, plus other uses (seed, processing, fuel). The annual direct demand in India had fallen to only 153 kg. Four decades of successful effort to raise domestic per capita supply and demand up to the early 1990s when reforms started, has been wiped out in two decades of trade liberalization and reforms.

There is a widely held misconception among economists that per capita cereal consumption is bound to fall as a country develops because people *diversify their diets* away from cereals to protein-rich animal products. This idea

of an inverse relation between income and cereal demand, reflects ignorance of the material fact that animal products require feed to produce and these feeds include cereals and their by-products in advanced and developing countries alike, apart from concentrates and green roughage. Far from falling, total cereal use per head for food plus feed normally rises quite sharply as per capita incomes rise and diets are diversified (by 'normally' we mean, as long as income distribution does not shift too much adversely). Populations normally show quite sharp absolute rise in cereal consumption per capita with an increasing share devoted to indirect, mainly feed use. Table 9 shows US cereal consumption at nearly 900 kg. per head of which only one-eighth was directly consumed and the bulk – 60 percent - used as feed for producing animal products with the balance, 27 percent, being divided between processed foods and conversion to ethanol. The European Union consumed 558 kg. per head of which over three-quarters was indirectly consumed. China consumed almost 300 kg per head, close to the global average of which nearly half was indirectly consumed. At the other pole India consumed only 174 kg. per head of which seven-eighths was directly consumed one-eighth used indirectly. This level has fallen below the average consumption level of not only the African countries but also of the Least Developed countries. The per capita supply/demand in India fell further in 2008 as global recession impacted aggregate demand: India exported 14 million tonne of grains and added a massive 17 million tonne to stocks, reflecting emptier stomachs for the poor whose purchasing power reduced. Per capita total supply/demand hit an all-time low of 156 kg per head, the same level as during 1937 -41.

In a critique of the proposition put forward by A.Deaton and J. Dreze (2002, 2005) that as per capita income rises cereal consumption falls, where they had claimed US cereal consumption per head as being lower than in India, I had pointed out (Patnaik 2010c) that this proposition is factually incorrect since US per capita cereal consumption, was more than five times the Indian level as

Table 7 shows. The widely –held misconception (an inverse relation between per capita income and per capita cereal consumption namely a negative income elasticity of cereal demand) that Deaton and Dreze articulated represents a fallacy of composition, in which the behaviour of only a part of cereal consumption namely direct consumption (which is indeed lower in US compared to India) is improperly taken as representing the behaviour of cereal consumption in general. Contrary to popular belief cereal consumption has a positive elasticity with respect to income – it normally rises when populations get better off and diversify diets towards more high-protein animal products. The only exceptions found are small insular nations that are habituated to consuming fish in preference to other animal products (Iceland, Fiji).

It is not surprising that poverty has risen substantially in the sense that the percentage of persons unable through their monthly spending to reach official nutritional standards, has gone up (see Table 5). The official claim is that poverty has reduced, but this claim is based on an incorrect methodology in which the definition of poverty line adopted by the Indian Planning Commission has been changed in practice after the initial estimate and de-linked from the official nutrition norms. The new definition adopted was that the ‘poverty line’ was simply the original nutrition norm based poverty line of 1973 adjusted upwards by a consumer price index, without ever asking the question whether this index-adjusted ‘poverty line’ allowed people to obtain the same level of nutrition as before. This procedure kept the 1973-74 basket fixed for ever and simply updated its cost. Since the economic environment has been changing, particularly so as per capita grain output declined and market pricing of essential services was introduced, the same basket no longer exists. The poverty lines calculated assuming a fixed basket underestimated the sum actually required to maintain any given nutrition level, and the underestimation became cumulative as time passed.

There is a serious logical problem with this official estimation procedure, namely *the standard against which poverty is being measured is not kept constant over time or space*. So successive poverty estimates cannot be compared, no valid inference can be drawn regarding the direction of change and official claims of poverty reduction are not true. Consider an example: we are told that the percentage of failed students in a school has declined sharply from 30 to 10 between 1973 and 2010, so we infer that academic performance has 'improved' for we take it for granted that the pass mark must be unchanged to allow such a comparison. But then we find out that in fact the pass mark has been steadily lowered over time, from say 50 out of 100 in 1973 to 20 out of 100 in 2010. By the latter date, we find that two-fifths of students could not reach the original 50 percent pass mark and this figure exceeds the school's failure percentage in 1973. It is clear the inference of academic 'improvement' is not true, rather the opposite inference of worsening is true.

Similarly in official poverty estimates a certain standard was set in the initial year 1973-74, that those persons were to be considered 'non-poor' who through their MPCE (monthly per capita expenditure) on all goods and services, could obtain at least 2400 (kilo)calories energy per day in rural and 2100 calories in urban areas, and these MPCEs were the 'poverty lines'. The rural norm was quietly lowered to 2200 calories for the base year estimate itself to obtain 56 percent in poverty, the urban estimate being 49 percent unable to access 2100 calories. But for all later years the standard was steadily lowered as a consequence of changing the definition of poverty line which de-linked it from the requirement of the initial standard being satisfied.

Every poverty line after the base year underestimated the sum required to maintain the same nutrition level. With cumulative underestimation over nearly four decades by 2004-05 we find a very large divergence between the correct poverty line on the one hand (at which the original nutrition level is accessible, and which can be easily obtained from the nutritional intake data of the



National Sample Survey Reports), and the price-index adjusted 'official poverty line'. (See Table 5 and Chart 2). Just as the definition of a student 'passing the examination' is changed from one who has at least 50 marks in 1973 to one who has at least 20 marks by 2010, the definition of a rural/urban person who is 'non-poor' was effectively changed from one who could afford at least 2400/2100 calories in 1973 to one who can afford 1820/ 1795 calories in 2004-5. Note that since about 1000 calories a day is the survival level, the decline in the standard on a normalized basis is effectively from 1400/1100 to 820/795. It is obvious that comparison over time is not valid when the standard is changed. In the face of the correct, widespread criticism that poverty lines were underestimates, all that the Tendulkar committee <sup>9</sup> did was to raise as it were the 'pass mark' from 20 to 25 (from 1820 calories to 1930 calories, for rural areas alone) by raising the rural poverty line by a trivial amount. The basic methodological error remained since lowering the 'pass mark' from this new level (lowering the calorie intake at the official poverty line) was ensured in future estimates which continue to apply price indices to update the cost of a fixed four-decade year old basket. The result by 2009-10 is a further sharp divergence between the new official poverty line and the nutrition-invariant direct poverty line (Chart 2).

We find that the percentage of rural persons unable to access 2200 calories, changed little during 1972 and 1993-4 for the 2200 calories norm, ranging between 56.5 and 58.5 percent. But over the subsequent period of economic reforms, poverty has risen sharply in both rural and urban areas <sup>10</sup>. From the recently released NSS 66<sup>th</sup> Round, 2009-10 nutrition data we can see that the percentage of rural persons unable to reach even the modest 2200 calories daily nutrition norm has gone up steeply from 58.5 to as high as 78

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<sup>9</sup> In view of widespread criticism that the Planning Commission poverty estimate especially for rural India were too low, a Committee chaired by S D Tendulkar was set up to look into the matter, which submitted its report in 2010.

<sup>10</sup> For 1993-4 and 2004-5 estimates of rural and urban poverty see Patnaik 2007, 2010a. Estimates for 2009-10 in Table 5 use data from NSS Report 540 *Nutritional Intake in India 2009-10* available online [www.mospi.nic.in/Mospi\\_New/site/inner.aspx?status=3&menu\\_id=31](http://www.mospi.nic.in/Mospi_New/site/inner.aspx?status=3&menu_id=31) accessed January 28, 2012.

between 1993-4 and 2009-10 (see Table 5) while the percentage of urban persons unable to reach the official 2100 calories nutrition norm has risen substantially from 57 to 73 over the same period.

There is a serious question of ethics among academics and those in public life raised by the poverty estimation issue. The state and its functionaries may wish to claim improvement in the poverty situation to justify current public policies, but to do so by changing the definition such that the standard against which poverty is measured is continuously lowered, and to continue with this method without any reference to the criticisms raised and even after the problem of non-comparability has been pointed out, is intellectual dishonesty amounting to apologetics.

Nassau Senior, professor of political economy at Oxford University in Britain had exercised considerable influence by opposing the proposed 10 Hours Bill for reducing the factory work-day, putting forward the argument that capitalists made their profits 'in the last hour' and all profits would disappear if the daily workday was reduced by one hour from eleven to ten hours. Karl Marx attacked Senior's theory of 'the last hour' as anti-working class apologetics pretending to be legitimate academic work. Today in India poverty reduction is being falsely claimed by lowering the standard by which it is measured, and the apologetic intent is very clear since the governing classes following Fund-Bank guidance despite all food crises, are averse to removing the arbitrary targeting into 'below poverty line' and 'above poverty line' introduced in 1997 with the objective of reducing the food subsidy and eventually throwing the poor to the mercies of the market by winding up the public distribution system altogether.<sup>11</sup> Like Senior's infamous 'last hour', we have the Indian equivalent in the daily 'poverty lines' of Rs.26 and Rs.32 rural and urban in 2011 which were supposed to meet all essential food and non-food expenses for one person whereas these

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<sup>11</sup> A system of public procurement and distribution of food grains and other necessities (paraffin used as fuel by the poor) expanded fast after the mid -1960s with the setting up of the Food Corporation of India.

paltry sums would not have bought a single cup of coffee at any airport frequented by those policy makers who make these estimates.

China's 2011 rural poverty line of 3.5 yuan per day is similarly obtained by price-index updating from a 1984 base year annual poverty line of 200 yuan, whose food spending part had satisfied a nutritional norm at that date, over a quarter century ago. But the 2011 level clearly is as grossly underestimated as is the Indian poverty line. One kilogram of the cheapest rice alone, cost 4 yuan at that date. As in India, actual poverty in China is bound to be substantially higher than official claims.

The World Bank's global poverty line has as little conceptual validity, since after all, it is based on national poverty lines which are grossly underestimated as already shown. The World Bank apparently took the local currency rural official poverty lines (of the median country or countries) out of the ten poorest in the world<sup>12</sup> and applied upward purchasing power parity adjustment to obtain the global poverty line, which in recent years has been updated from \$1.08/day to \$ 1.25 per day. This global poverty line was then applied to each individual developing country by reversing the process, namely deflating its local currency value at the current exchange rate by the PPP coefficient for that country, thus giving a poverty line little different from the original one and hence poverty ratios close to the official ones.

Since in deriving the global dollar poverty line, upward PPP adjustment to national poverty lines had been carried out, the designated poverty line in dollars should be equally applicable to developed countries like the US. We get a clear idea of how both national currency poverty lines and the derived global poverty line based on these, grossly underestimate actual cost of living, since not even homeless vagrants in the sub-tropical deep South of the US can survive on \$ 1.25 per day (\$ 456 per year). The entire discourse claiming 'poverty reduction' is based on bad theory and inadmissible statistical procedure. It is

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<sup>12</sup> For an examination of the World Bank's procedure see S. Reddy and T.W.Pogge 2006, 2007.

producing notable howlers owing to the unthinking use by economists of 'poverty lines' which are falling further and further below minimum living standards as time passes. Thus, 'extreme poverty' in India is defined as spending half or less of the official local currency poverty line. A number of economists in India have claimed the happy result that 'extreme poverty' has become zero in many constituent states of the country. However the reality is that since the official poverty line they use is being underestimated cumulatively and is already far too low, at half the poverty line there were no longer any people to be observed. Anyone spending only Rs.6/ Rs. 9 per day in rural/urban areas in 2005 (nominally equal to US 11 cents/ 17 cents respectively and about US 28 cents/ 43 cents after adjusting for purchasing power), would be dead. It is not extreme poverty which is zero, but people who are dead at such low levels of spending.

### ***Concluding Remarks***

The character of capitalist industrialization at the core was unique in relying quite substantially on primitive accumulation at the expense of other peoples and on the consequent ability to export domestic unemployment constantly engendered by technological change. This particular trajectory is closed to late industrializing countries today. Developing countries in the interest of preserving livelihoods, necessarily have to innovate an alternative trajectory which far from destroying small scale labour intensive production, stabilizes it while avoiding the disadvantages of small scale, through co-operation.

It is a grave mistake to think that the small scale production of the peasant, the artisan and petty sellers, is going to disappear in developing countries. The small producers will survive because large scale production cannot produce a viable employment alternative in the material productive spheres: and because the small scale producers if forcibly displaced, have no place to go. They will resist, and are already resisting displacement fiercely.

Capitalism cannot ameliorate the condition of the masses because its functioning at the global level is predicated on the growth of riches at one pole and the promotion of unemployment and hunger at the other. The agrarian question has not become otiose in the present era. On the contrary, the new phase of primitive accumulation which has been variously characterized as 'accumulation through dispossession' (D. Harvey 2003) and 'accumulation through encroachment' (P. Patnaik 2005) is producing a new set of contradictions and giving rise to new struggles. From being passive objects of history and using passive forms of protest like suicide, the peasantry is turning once more to active forms of struggle, both against state acquisition of land and against corporate attacks on the very basis of their livelihoods.

Capitalism cannot provide a solution to the unemployment problem or maintain living standards in advanced countries without constantly promoting higher unemployment and inducing greater poverty among developing country populations. Alternative strategies of growth which preserve employment and livelihoods, are feasible in the small and are being implemented already in many local level experiments. In the large however, I believe that only a system- transcending change, which is not on the immediate horizon, can provide the answer; and such change must be theorized anew even when its realization appears to be remote.

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## APPENDIX

Table 1 Estimated Index of Total Cereals Output in Volume units, and Indices of Per capita Cereals Output, England and Wales 1701 to 1801 on Alternative Population growth estimates

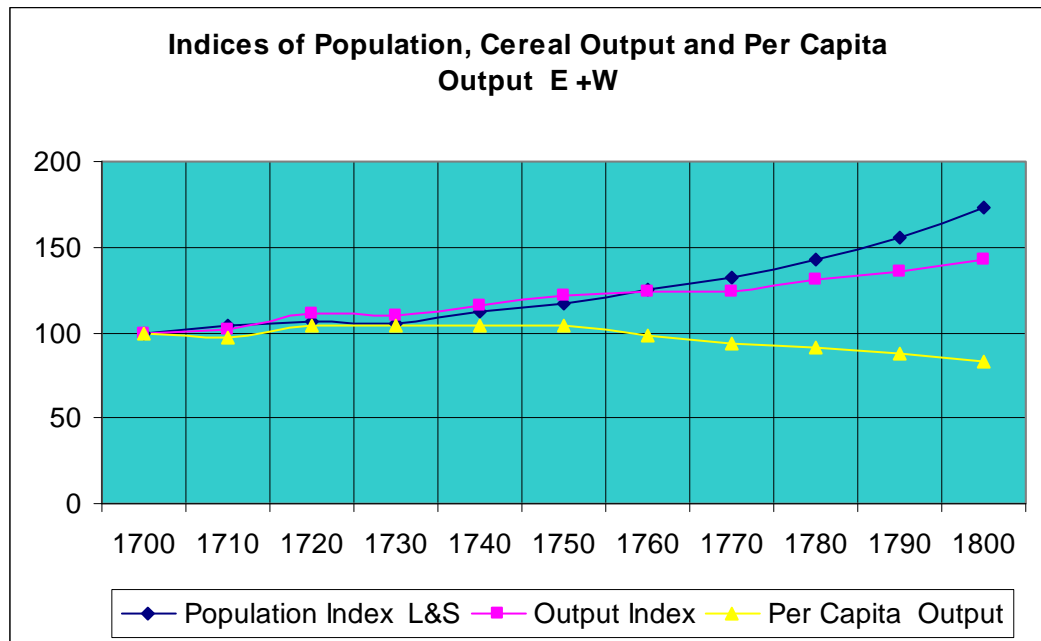
	CEREAL OUTPUT INDEX	POPULATION INDEX		PER CAPITA CEREAL OUTPUT INDEX	
		A	B	A	B
1700	100	100	100	100	100
1710	101.59	104.2	105.11	97.53	96.64
1720	110.88	107	110.48	103.65	100.37
1730	109.55	105.7	116.14	103.67	94.32
1740	116.19	112.3	122.07	103.51	95.18
1750	121.49	117.2	128.32	103.66	94.68
1760	123.61	125.1	134.87	98.78	91.65
1770	123.88	131.8	141.78	94.02	87.37
1780	130.51	143.1	149.02	91.2	87.58
1790	135.56	155.2	156.64	87.35	92.85
1800	143.40	173.2	164.72	82.58	86.81

Source: U Patnaik 2010b 'Was there an agricultural revolution in England?

Note: Col.1 shows 43.4 percent rise in cereal output by Chambers and Mingay 1966 which is distributed in the same proportion as total agricultural output.

The population index A and B are derived from population series by Lee and Schofield 1981 and by Maddison 2006 respectively, both being for England and Wales. The last two columns show the corresponding per capita cereals index.

Chart 1 Indices of Population (Lee and Schofield), Cereal Output and Per Capita Output, England and Wales 1700 to 1800



Source: Table A1, using Lee and Schofield population index.

Table 2 Annual Per capita Output of Wheat, England and Wales, in bushels and in Kilograms

	NET OUTPUT Million Bushel	NET OUTPUT Million Kg	Population Million	PER CAPITA Kg.
1700	29.2	743.53	5.29	140.55
1750	34.03	866.218	6.2	139.71
1800	40.03	1019.2	9.16	111.27
1820	53.29	1356.47	12.071	112.37
1850	88.48	2252.22	17.603	127.95

Source: Turner, Beckett and Afton 2001 for net output (namely gross output minus seed), Lee and Schofield 1981 for population. One bushel (Imperial measure) of wheat with standard moisture content weighs 56 lbs. or 25.45 kg. and the conversion is made on this basis by this author to obtain the last column.

**Table 3 Share of Primary Products in World Trade**

PERIOD	Based on volumes in current prices	Based on Volumes in 1913 prices
1876-80	63.5	61.8
1886-90	62.3	62.3
1896-1900	64.3	67.7
1906-10	63.2	64
1913	62.5	62.5

Source: S. Kuznets 1967

**Table 4 Emigration OF Europeans, 1821 to 1915 by country of origin**

*A Origin of Emigration from Europe 1821 to 1915, number in million*

	1821-50		1851-80		1881-1915	
	Number	%	Number	%	Number	%
EUROPE	3.4	100	8.1	100	32.1	100
Of which						
BRITAIN	2.6	76.5	4.6	56.8	8.9	27.7
GERMANY	0.6	17.6	2.1	25.9	2.2	6.9
ITALY	neg.	0	0.2	2.5	7.8	24.3
SPAIN & PORTUGAL	neg.	0	0.3	3.7	4.3	13.4
AUSTRIA-HUNGARY	neg.	0	0.2	2.5	4.2	13.1
Annual Averages	113,000		270,000		917,000	

Source : Kenwood and Loughheed 1971, p.60, rearranged from Table 5.

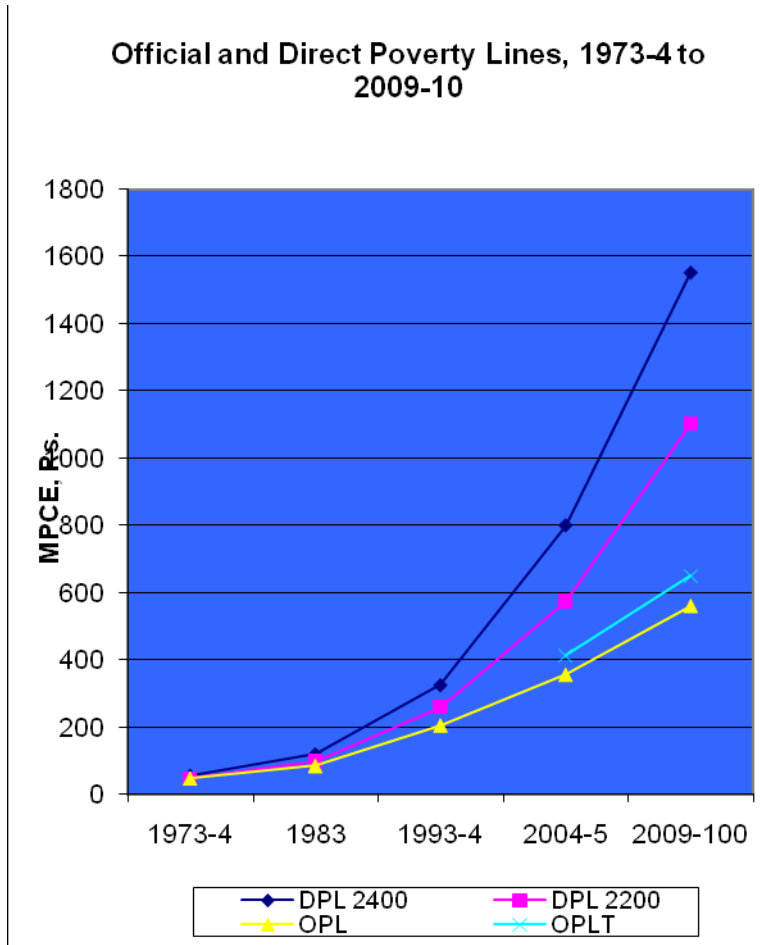
Emigrants made up 74.8 percent of the 4.3 million of observed population increment in Britain over 1821 to 1850 and as high as 90 percent of the 9 million observed increment between 1851 and 1880. Since observed increment is presumably post-migration, using Maddison (2006) for population series, we find that almost half the actual population increase emigrated in this period.

**Table 5 Rural Poverty in India, 1973-4 to 2004-5**

NSS Round	28 1973 -74	38 1983	50 1993 -94	61 2004 -05	66 2009 -10
<hr/>					
1.Direct Poverty Line DPL, Rs.					
at 2400 calories	56	120	325	800	1550
at 2200 calories	49	100	250	575	1100
2.Official Poverty Line OPL, Rs.	49.1	89.5	206	356 414T	— 650T
3.Direct Poverty Ratio DPR, Percent					
below 2400 Calories.	72	70	74.5	87	90
below 2200 calories	56.5	54	58.5	69.5	78
4.Official Poverty Ratio OPR, %	56.4	45.6	37.3 50.1T	28.3 41.8T	— 36T
6.Calorie Intake @ OPL	2200	2060	1980 (2100)	1820 (1930)	— (1880)
7. Deficit of Calorie Intake at OPL from 2200 norm	0	- 140	- 220 (-100)	- 380 (-270)	— - (320)

Source: Simplified from Patnaik 2007 and updated using NSS Report No.540 *Nutritional Intake in India 2009-10*. The Direct, nutrition invariant Poverty Ratios (DPR) are shown for two levels, 2400 calories the original declared official norm, and 2200 calories, the norm which was actually applied in base year 1973-4 to make the official initial estimate. Values marked with T refer to revised poverty lines by the Tendulkar Committee, expressed in Uniform Recall Period (URP) basis (which is Rs.30-40 lower than the MRP basis) and the corresponding revised official poverty percentages are shown.

**Chart 2**      **Increasing divergence between Official Poverty Lines and Direct (Nutrition invariant) Poverty Lines, 1973-74 to 2009-10 All-India Rural**



Source: Table 5. OPL is Official Poverty Line value in different years and OPLT is the revised official lines incorporating the Tendulkar Committee method. These revised official poverty lines are shown on URP basis which is Rs.30 to Rs.40 lower than the MRP basis, to maintain comparability with earlier poverty line values. The direct poverty lines are shown for two levels of energy intake, 2400 and 2200 calories.

**Table 6 Arable area and volume of Food Crops Output in India, China and USA, in 2007**

	ARABLE AREA 000 Ha.	FOOD CROPS OUTPUT 000 Tonne	OUTPUT PER HA., Tonne	INDEX, USA=100
INDIA	158114	818698	5.18	137
CHINA	109365	1275047	11.66	309
USA	170428	644203	3.78	100

Source: [www.faostat.fao.org](http://www.faostat.fao.org)

Note: Food Crops Output includes cereals and pulses, starchy roots, sugar crops, tree nuts, oil crops, vegetables, fruits, stimulants and spices. It excludes sugars and sweeteners, and vegetable oils as these are processed products including use of imported raw materials.

**Table 7 Output and Consumption of Cereals Directly as Food and Indirectly for Feed and other uses, in 2007 for selected countries/regions**

2007 CEREALS		QUANTITY (million tonne except cols. 7-9)							
FAO Statistical Yearbook 2009									
Country / Region	2 Production	3 Net Imports and Stock changes	4 Total Supply	5 Food (DIRECT use)	6 Feed, seed, processing, other (INDIRECT use)	7 Per head Direct Kg.	8 Per Head Total, Kg.	9 Percent of Indirect to Total	
INDIA	212.4	-9.5	202.9	177.7	25.2	152.6	174.2	12.4	
LEAST DEVELOPED AFRICA	125.9	14.5	140.4	105.5	34.9	136.9	182.1	24.9	
CHINA	130.8	58.1	188.9	138.7	50.2	144.1	196.4	26.1	
EUROPEAN UNION	395.3	-8.9	386.4	203.8	182.6	152.5	289.1	47.3	
USA	261	14	275	61.7	213.3	125.1	557.3	77.6	
WORLD	412.2	-137.6	274.6	34.5	240.1	111.6	889.5	87.5	
	2121.3	54.6	2066.7	966.2	1100.5	146.6	313.6	53.2	

Source: Food Balance Sheets from FAO. [www.faostat.org](http://www.faostat.org) accessed 10 June 2010. Data not only for individual countries but the aggregates presented here such as Least Developed Countries, European Union and Africa, are available in the source. The break-up of indirect uses into feed, seed, processing & other, is also available in source, which gives data for every year up to 2007.