CHAPTER V

CONCLUSION

5.1. Summing Up

One of the main arguments in favour of ‘globalization’ rests on the view that apart from easing the supply-side bottlenecks, it also helps to provide ‘external market’ for the demand-constrained industry in less developed economies. However, complete dependence on such an ‘export-led growth’ strategy has been questioned by both the proponents and the critics of globalization. The strategy gives a disproportionate emphasis on ‘foreign markets’ at the neglect of the potential ‘internal markets’ as a means to solve the ‘problems of excess capacity and unemployment’ in industrial sector.

Against this background, we try to identify the possibilities of ‘domestic demand’ generation for the industrial sector as a whole. Our fundamental emphasis is on the search for ‘home market’ creating ‘effective demand’ for this industrial sector. In this context, we question the conventional wisdom that agrarian sector can create ‘domestic market’ for industry. Our position is that government sector is the proper candidate for home market and agriculture supports the process of industrialisation only from supply-side.

To start with we go for the literature review that sets the stage of further analysis. We review the literature on agriculture-industry relation following the chronological order of development of the discourse. The order of review is as follows: we first review critically the supply-side literature emphasizing the role of
agriculture in the process of industrial growth through accumulation prior to reviewing the literature which focuses on the role of agriculture as home market for industry.

There are various mechanisms through which agriculture is supposed to induce industrial expansion from the supply-side. We discussed these mechanisms as mentioned in the relevant writings of the most prominent contributors such as Ricardo, Lewis, Ranis and Fei, Preobrazhensky. Agricultural sector is argued to provide food, raw materials and also investible resources for industrial sector. The agriculture-industry relation, in this approach, is viewed from the perspective of industrial growth and accumulation generally abstracting from the problem of effective demand.

Next, we go for the critical analysis of the other trend in literature. Various mechanisms have been proposed to explain agriculture’s demand-side contributions to industry.

The position of popular view is that a bumper crop helps industrial revival because it leads to an increase in income or purchasing power in agrarian sector raising demand for industrial goods. However, we argue that this claim of agriculture being a home market for the industrial sector is unsustainable if the trade between the two sectors is balanced at constant terms of trade.

On the other hand, the analytical–descriptive part of the academic discourse proclaims agriculture as the home market for industry on two grounds. The first defense of the position is same as that in popular discourse. We already noted that this defense is based on erroneous argument. The second defense is in terms of redistributive mechanism set forth by a movement of the terms of trade between
industry and agriculture following a bumper crop. It is this redistributive mechanism which is taken up and clarified in formal terms by the other stream of academic discourse which uses formal models as vehicles of discourse. This stream deals with the influence of agricultural productivity change on demand-determined industrial output operating through different processes of inter-class income redistribution under alternative assumptions on agriculture-industry trade balance.

In all these cases, a change in marketable surplus affects industrial output through redistribution of income either between farmers and industrial workers or between farmers and industrial capitalists. We, on the other hand, consider a situation where each of these three groups forms separate lobbies and all lobbies are equally strong. Then, redistribution of income is resisted by group-interest. In the presence of such resistance, one has to look for some alternative way of formulating agriculture–industry linkage in a macro–framework.

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100 We can interpret our assumption of the fixity of terms of trade, industrial real-wage and product-wage as an expression of alliance between different classes or groups of people (see Mitra, 1977, 141-2, where terms of trade represent a ‘synthesis’ of class interactions). Thus the distributive factors are not determined through demand-supply interactions, but by the ‘class interaction’ where “the powerful social forces.........make for (this) constancy in relative earnings in different trades and occupations” (Kaldor, 1976, 708). It has also been argued that “the big farmers get subsidized inputs (from industry) and are allowed to retain.............their exploitative position within the rural sector; in return they provide the urban elite, industrialists and (also) proletariat with wage goods at artificially low prices” (Lipton, 1974, 311) and thus striking a (comfortable and stable) balance in the terms of trade. This fixity (stability) of the terms of trade could also be taken as an expression of the so called ‘balanced growth path’ (Ranis and Fei, 1961) where there is neither an ‘agriculture squeeze’ nor a bias against industry. Essentially, by this very crucial assumption we try to depart from the neo-classical approach where the “(r)elative prices are.............all-important in determining allocation of resources and also determining quantity levels and composition........” and where we have the simultaneous determination of the equilibrium outputs and all the relative prices. On the other hand, our analysis is based on “the process of distribution (which involves), inescapably, the clash of class interests and the interplay of historical and political factors, reflected also in institutional conditions...........” (Bharadwaj, 1986 and 1991; also Bhaduri, 1986). For empirical support – in the Indian context – of the movement of the terms of trade within a broad band and not moving significantly against any sector and also for its irrelevance in explaining the growth impulses for industry and agriculture see, Thamarajakshi (1994, 55-6).
The search for an alternative route leads us to Kalecki — his concept of domestic exports and also his analysis of the role of food-supply in the context of non-inflationary growth. Kalecki pointed out in clear terms that the extent of foreign market necessary to mitigate the problem of effective demand faced by the industrial sector is not given by the level of export but by that of export-surplus. However, there are practical problems in sustaining export-surplus vis-à-vis the rest of the world. He, therefore, shifted his focus from external market to home market. Home market for industry is defined as any non-industrial sector within the national economy vis-à-vis which domestic industry can maintain 'export-surplus'. The agrarian sector cannot be the home market since it faces the problem of financing its 'import-surplus' vis-à-vis industry. According to Kalecki, the government sector is the proper candidate to play the role of home market. In its trade with government sector domestic industry 'exports' goods against the 'import' of money. This 'export' which is, by definition, an 'export-surplus' is what Kalecki termed as 'domestic exports'. Kalecki's analysis of domestic exports establishes clearly that no sector other than the government can serve as the home market for industry. The role of agriculture is quite irrelevant in this specific context.

Kalecki rules out agriculture as a possible home market for industrial product. However, this does not mean that he considers agriculture as totally unimportant for the existence and expansion of industry. There is clear recognition of agriculture as the source of supply of wage-good or food to the industrial sector. Kalecki recognizes the crucial role of agriculture as a source of supply-side support for industry.
Kalecki's concepts of domestic export and of agricultural supply-constraint constitute our point of departure. The two concepts are treated by Kalecki in an isolated manner. The basic project of our thesis is to unite the two in a single frame of analysis and to develop the frame analytically to its fullest possible extent.

We start with the assumption that the industrial product-wage, the industrial real-wage in terms of food and hence, the agriculture-industry terms of trade are given. The assumption freezes the redistribution mechanisms between farmers, industrial workers and the capitalists. Next, we pose the problem of effective demand of industry with government sector acting as the home market and agriculture providing supply-side support. Construction of the basic model along this stated frame and extensions of the model in various directions is the primary task of our thesis.

At the very outset we propose that an appropriate government intervention through Kaleckian domestic exports can mitigate the problem of effective demand faced by the industrial sector. However, this can be done without any distributional repercussions, if and only if there is no effective supply bottleneck like the 'wage-good constraint' arising from agriculture. Therefore, consistency requires an endogenous determination of the level of real domestic exports in presence of agricultural supply-constraint and social resistance to any change in income distribution. Thus, we state our first basic proposition as:

**Proposition 1:** Given an exogenous food-supply-constraint and exogenous pattern of income distribution, the size of the real domestic exports or that of the 'home market' for industrial sector will be endogenously determined.
Domestic exports not only mitigates the problem of effective demand for the industrial sector but also that of agriculture.

Next, as a corollary to this proposition I, we analysed the effect of an expansionary fiscal policy without any change in agricultural production. Such a policy can be represented in our model by considering an increase in nominal government expenditure on industrial sector whose potential output is ultimately set by agricultural supply-constraint. We can state the consequences of such a policy in the form of the following proposition:

**Proposition II:** Any attempt to expand real domestic exports beyond the endogenously determined equilibrium level can initiate an increase in prices and wage with only stagnation in the industrial sector.

Next, we consider a rise in agricultural productivity leading to an increase in the marketable surplus of food. This relaxes the supply-constraint on industry. Under a given pattern of income distribution expansions of industrial output and employment potentials are dependent on this exogenous growth of agricultural productivity. However, an appropriate expansion of endogenously determined real domestic exports and hence that of home market need to be achieved simultaneously to realize these potentials. The precise mechanisms for such expansion will be different depending on whether there exists downward rigidity of money-wage or downward flexibility of that in the industrial sector. We can sum up in the form of the following proposition:
**Proposition III:** Growth of agricultural productivity creates the potential for industrial expansion from the supply-side. However, on the demand-side, realization of this potential requires an adequate expansion of real domestic exports. Such an expansion can be achieved by price-wage fall in case of downward flexibility of money-wage. A proper expansion of nominal government expenditure, on the other hand, is required in case of downward rigidity of money-wage.

We also show that our basic propositions obtained as above under the assumption of balanced trade are substantively unaffected even if we allow for unbalanced trade between agriculture and industry in the form of farmers' savings. However, the conclusion changes substantively if one assumes the possibility of redistribution in such a situation of unbalanced trade between agriculture and industry by allowing for farmers' savings.

In our third chapter, we extend the role of the government in the general context of agriculture-industry inter-linkage. Over and above its role in the creation of home market for industry through domestic exports, government may also intervene in food-market with its procurement policy.

It is proposed that a rise in agricultural productivity, instead of raising industrial employment through an increase in real domestic exports, can enhance rural non-agricultural employment if surplus food is fully procured and used up in ‘food for work’ programme by the government. However, with such a policy a mismatch between the demand-side boost and supply-side support for the industrial sector appears leading to a situation of industrial stagnation with rise in prices and wage.
Procurement expenditure raises income in agriculture. This, in turn, under the condition of zero savings by the farmers, raises demand for industrial commodities. However, net supply of food to this sector does not at all change. Hence, there is no change in urban-employment even if aggregate food-supply rises as this surplus food is fully directed to generate rural-employment. The only impact is the rise in prices and wage across the two sectors. We can summarise this analysis in the form of the following proposition:

**Proposition IV:** In case of full-procurement of surplus food in a situation of bumper harvest only rural non-agricultural employment is created through food for work programme without any real expansion in industry. Thus we have a supply-driven trade-off between rural and urban employment.

However, the contradiction between rural non-agricultural and urban industrial employment can be partially mitigated when government goes for 'partial procurement' instead of 'full procurement' with increase in food-supply. Instead of full-procurement only a measured fraction of the increased food-supply has to be procured by the government. The consequent rise in farmers' income raises demand for urban industrial commodity and subsequently that of food so much so that this excess demand for food is just matched at constant prices by the left out supply in open-market. This result could be summarised in the following proposition as:
**Proposition V:** When an attempt is made to raise the level of rural non-agricultural employment through procurement a conflict between urban and rural employment arises. However, this conflict is partially mitigated through a policy of partial-procurement. This partial relaxation of the conflict in essence occurs due to relaxation in food-supply-constraint and appropriate allocation of this increased food-supply between rural and urban sectors through suitably designed procurement policy.

In the fourth chapter, we divide our industrial sector into formal and informal segments. With this context, first, we discussed the basic difference between agriculture – informal sector interaction and agriculture – formal industry interlinkage.

Agricultural surplus is supplied to aggregate food-market with the intention of realization of potential income and subsequently to purchase non-agricultural products. A portion of this supply implies potential demand for informal sector’s output. This potential demand is realized through exchange as production in informal sector is boosted by the increased food-supply. Thus, simple exchange completes agriculture – informal sector interaction. However, the absorption of other portion of food-supply by formal capitalistic industrial sector is dependent on an appropriate expansion of aggregate real demand for this formal industry. This expansion is induced by an increase in the level of real domestic exports in absence of any scope for inter-class redistribution of income. We can summarise as:
**Proposition VI:** The mechanism for agriculture-informal sector interaction is distinctly different from that of agriculture-formal industry inter-linkage. The latter interaction crucially depends on real domestic exports, absence of which creates effective demand problem for both these sectors. On the other hand, former interaction operates through simple (market) exchange where this effective demand problem does not at all emerge.

Next, we consider the interaction between formal industry, agriculture and the government. When there is no informal sector the given amount of marketable surplus of food is directed only to formal industry. However, in presence of informal sector formal industry faces shrinkage of food-supply. As the supply-constraint becomes more stringent for formal sector its potential employment and output reduce. This squeezing of the supply-side support is endogenously adjusted on the demand-side by shrinkage in the size of real domestic exports or that of home market. Thus, there is simultaneous squeezing of both demand-side as well as supply-side supports for formal industry. Consequently, equilibrium levels of output and employment fall in this sector.

Summarising the above analysis we can say that the incorporation of informal sector into our overall analysis of agriculture-industry-government interlinkage squeezes down the equilibrium levels of output and employment in formal sector.

**Proposition VII:** We have a basic conflict between formal and informal sectors in terms of employment and output in presence of the agricultural (supply) constraint.
Next, we consider certain comparative static exercises analysing the impacts of rise in agricultural productivity initiated through different channels.

We start with a rise in agricultural productivity through the improvement in technical efficiency. As agricultural supply-constraint is relaxed, not only informal sector but also formal industry benefit in real terms. Moreover, the proportion of division of expenditure of agricultural income between these two sectors remains unchanged even after the increase in food production. As a consequence, both these segments of industry appropriate the benefit of this increase in food production accordingly. We can summarise the analysis of this section as:

**Proposition VIII:** Rise in agricultural productivity only through technological progress initiates simultaneous expansion of both formal and informal sectors without extending the basic conflict between these two sectors any further. This leads to a general increase in the levels of employment.

Next, we assume that the government introduces a policy of land reforms that makes the land distribution pattern in agriculture more equitable. Moreover, we also assume that along with land redistribution other complementary measures as, technological and / or institutional rearrangements are introduced. This policy package is supposed to increase agricultural productivity. Due to rise in agricultural productivity through land reforms equilibrium values of output and employment in informal sector rise unambiguously. Moreover, this expansion is much greater than what we got in the last case of simple technical progress in
agriculture. A comprehensive land-reforms policy could provide a boost for informal sector through two channels: Redistribution of land in favour of the poor strengthens demand as well as supply-side linkages between agriculture and informal sector. Moreover, rise in agricultural productivity as an additional effect of such a policy induces the expansion of informal sector still further.

Next, we turn to the analysis of formal industry-agriculture interaction in presence of informal sector. On one hand, redistribution of land in favour of the poor weakens the supply-side linkage between agriculture and formal sector. However, on the other side, rise in agricultural productivity strengthens this supply-side linkage. These simultaneous changes generate ambiguous results for formal industry. Thus, we get the following result:

*Proposition IX*: While informal sector undoubtedly benefits in terms of output and employment from a programme of land-reforms leading to a rise in agricultural productivity, the effect on formal industry is ambiguous.

It is argued that rise in agricultural productivity not only increases the levels of output and employment in informal sector but also can raise its real income level. However, the outcome is dependent on elasticity of labour supply in informal sector. In presence of surplus labour the former result is found to be prevalent, while scarcity of labour leads to the latter consequence.

We start with a situation where the level of supply of output in informal sector is a constant whose value is determined ultimately by the limited size of labour-supply. Thus, instead of being demand-determined the levels of output and employment in
this sector turn out to be supply-determined. Next, we assume a rise in agricultural productivity only through technical progress. The excess supply of food to informal sector is absorbed only through an increase in per capita food consumption as the aggregate employment is fully inflexible. Thus, given the condition of full-employment in informal sector, a rise in agricultural productivity raises the real income in terms of food for all the existing self-employed persons.

Now, we move to the interaction between formal sector and agriculture. With rise in agricultural productivity aggregate supply of food to formal sector rises. In the present case, the extent of relaxation of food-supply-constraint is maximum. This is because, there is rise in aggregate supply as well as the fraction of that aggregate exchanged against formal industry's output. The latter occurs, as there is redistribution of income from agriculture to informal sector through the movement of the relative price or terms of trade between these two sectors. This movement of terms of trade makes the product of informal sector dearer for agriculture leading to weakening of linkage between these two sectors. The demand for informal sector's output and hence, subsequently, supply of food to this sector fall. As a result, food-supply to industry rises. Thus this dual adjustment in food-supply to industry unambiguously helps this sector to expand. We summarise as:

**Proposition X:** In absence of surplus labour in informal sector a rise in agricultural productivity raises real income in this sector without any effect on its levels of output and employment. However, formal sector expands significantly as along with the general rise in food-supply we also have an endogenous reallocation of food-supply towards formal industry.
So far, we have been dealing with two extreme assumptions on the conditions of labour-supply in informal sector: first, the existence of surplus labour and secondly, full-employment. Consequently, we had two extreme types of $S_o$ curves: either perfectly elastic or just the opposite, leading to two extreme types of impacts on informal sector due to change in agricultural productivity. However, we construct an intermediate case which could be a more plausible one. Consequently, an expansionary impetus simultaneously raises both the real income through the variation of the terms-of-trade and the level of employment in this informal sector. The outcomes will differ only quantitatively depending on the elasticities of demand and supply for informal sector's output.

At the end we put forward certain tentative results relating to formal-informal sectors interaction and the possible role of the government in the context of agriculture-informal sector interlinkage.

We conclude with the note that throughout the above discussion we are dealing with both the issues of creation of potential output and employment in industry and of realization of this potential. Stated otherwise, our analysis tries to locate distinctly the sources of demand and supply-side contributions for industrial expansion. We also establish the need for generating complementariness or balance between these two types of supports. Thus, dealing with these two sources distinctly and bridging them together into one aggregative framework is a crucial departure from a vast literature that deals with such issues rather separately and in an unrelated manner.

We, first, see that to realize the potential output and employment in formal industry set by the food-supply-constraint with unchanging distribution of income the role
of Kaleckian domestic exports is essential. In absence of domestic exports to
government formal industry as well as agriculture suffer from realization crises.
Realization problem in agriculture could also be mitigated if government
introduces the policy of procurement of surplus food. However, these two roles of
government may be conflicting in nature given the food-supply-constraint. This
conflict demands an act of balancing. The other way of mitigating realization
problem in agriculture is the introduction of informal sector that can act as a vent
for surplus. Here again, we have to go for the act of balancing in presence of food-
supply-constraint. Thus, essentially, throughout our analysis we perform such acts
of ensuring complementariness.

5.2. Directions of Future Research

5.2.1. Extensions in the Context of Chapter 3

i) Introduction of ‘dual food market’ where open-food-market is supplemented by
the public distribution system providing cheap food to the non-agricultural
population.

ii) Export of procured food to import, say, oil for urban industry and thereby to
help industrial expansion.

iii) Government procurement and maintenance of buffer stock sensitive to
exogenous food-price change. Thus government procurement made to be
endogenous.
5.2.2. Extensions in the Context of Chapter 4

i) On the supply-side, we can consider the 'credit constraint' and also the 'infrastructure constraint' for informal sector. These constraints will generate a multiple (supply) constraint analysis.

ii) An open economy extension of the basic model could provide us with interesting results.

5.2.3. General Extension

We can extend our basic model of chapter 2 to an open-economy framework and thereby, can analyze the linkages between the industrial sector of a less developed economy and other sectors – specifically the agricultural sector, the government and the rest of the world. In the context of demand, our basic position could be that the export surplus of industry vis-à-vis the rest of the world and an appropriate government intervention through 'domestic exports' could mitigate the problem of effective demand faced by the industrial sector. On the other hand, we would recognize that the foreign exchange constraint and the food constraint could present supply-side bottlenecks for industrial expansion. However, the complementariness between the different demand-sides and supply-sides supports are crucial for the expansion of industrial output and employment without involving distributional conflict between different classes of people and without any capital flow between different sectors. We could derive certain observations in this perspective, which essentially would hover around the stated issue of complementariness.