CHAPTER I

Introduction and Plan of Work

1.1. Context of the Study

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.

Too much dependence on foreign markets may pose serious threats for the independent and steady progress of the domestic industrial sector. Foreign markets are exposed to several types of shocks that are beyond the control of the domestic economy and also of the national governments. Consequently, fluctuations in domestic industrial output and employment may be frequent and acute. Furthermore, recurrent phases of global recession make the condition of domestic industry extremely vulnerable. On the other hand, the process of industrialisation of a country that is largely guided by the requirements of foreign markets may not be suitable for the national conditions. In presence of such possibilities, 'home market' can be an important alternative. It can provide a buffer for the domestic
industrial sector. Furthermore, as domestic institutions can considerably regulate the conditions of home market, it can act as a counter-cyclical instrument.

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 the industrial sector\textsuperscript{1}. In our journey we find that the literature again and again indicates at the agricultural sector as the potential home market for domestic industry. It has been argued that agrarian transformations augmenting agricultural productivity and incomes can raise the level of effective demand for the industrial sector through specific channels\textsuperscript{2}.

However, we analyse this wisdom critically and probe into the claim that agrarian sector creates 'domestic market' for industry. In course of this critical analysis we develop our position that it is the government sector rather than agriculture that could be the proper candidate for this home market. Our basic position is that an appropriate government intervention creating the scope of Kaleckian 'domestic exports' for the industrial sector can mitigate the 'problem of effective demand' faced by industry. Thus, net 'exports' to government create this home market for domestic industrial sector.

\textsuperscript{1} If we consider the experiences of India and other developing countries, we find that, in general, their industries are suffering from lack of both 'external' as well as 'internal' demand. The internal problem of effective demand is reflected by these countries' internal saving–investment imbalances and other indicators of industrial performance. Given the persistence of such problems for the industrial sectors of many developing countries, our search for this 'home market' becomes extremely relevant.

\textsuperscript{2} The issue of home market has not only been debated in academic discourse but also been deliberated intensely in the arena of politics. Many of the contending political doctrines dealing with the issue of agrarian transformations consider expansion of home market for demand-constrained industry as one of the prime objectives of such changes.
On the other hand, in conformity with the vast literature that suggests agriculture's supply-side role in the course of industrialization, we also propose that agriculture contributes in the process of industrialisation, primarily, from the supply-side. Agricultural sector must provide industry with food - the critical 'wage-good'. Thus productivity enhancing agrarian transformations are supposed to support the process of industrialisation through the supply-side and not through the expansion of home market.

Above all, departing from the literature, we argue that to have a non-inflationary real expansion of industry simultaneous interactions between industry and agriculture on one hand and between industrial sector and the government on the other are essential. None of these two sectors - agriculture and the government - can independently ensure expansions of industrial output and employment. The two sectors have to act on industry conjointly.

1.2. Review of Literature

1.2.1. Introduction: In the literature on industrial problems in LDCs. in general and India in particular, agricultural performance is often identified as one of the main factors determining demand for industrial products. Agricultural sector is frequently recognized as the potential home market for industry. Increase of agricultural output is supposed to expand the market for the demand-constrained industrial sector.

On the other hand, contrary to these discussions there is a vast literature that emphasises on the supply-side role of agriculture in the expansion of industry. Agricultural sector is argued to provide food, raw materials and also investible
resources for the 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.

Though chronologically this supply-side literature precedes the home market argument, later on there has been a marked swing in the emphasis away from the supply-side role of agriculture and agrarian sector has been identified as a potential home market for demand-constrained industry.

We review the literature on agriculture-industry relation following this chronological order of development of the discourse. The structure of the review is as follows: we first review critically the supply-side literature emphasizing the role of agriculture in the context of industrial growth and accumulation prior to reviewing the literature which focuses on the role of agriculture as home market.

1.2.2. Review of the Supply-side Literature

There are various mechanisms through which agriculture is supposed to induce industrial expansion from the supply-side. In the following section we discuss these mechanisms as mentioned in the relevant writings of the most prominent contributors:

1. **Ricardo**: One of the major supply-side arguments was initially put forward by Ricardo (1815, 1821) during the famous ‘Corn Law’ controversy in England. Ricardo was critical about the ‘Corn Law’ that restricted the import of corn to England. According to him this restriction eventually created a shortage of corn for the industrial sector choking off its expansion. For Ricardo, expansion of industry
depends on capital accumulation that, in turn, is determined by the generation and re-investment of industrial profit. Now the question is: How does the shortage of ‘corn’ squeeze out industrial profit and thereby restrict growth?

As accumulation progresses and industry expands, demand for food also rises. This excess demand can be mitigated only with an expansion of food-supply. Given the scarcity of land, food production can be increased either by intensifying cultivation on plots already in operation or by extending cultivation to inferior new plots. In both the cases, the law of diminishing returns operates which causes a lower rate of profit in agriculture. The law of uniform rate of profit across all sectors implies a fall in the rate of profit of the industrial sector as well. This fall in rate of profit reduces accumulation and restricts industrial expansion.3

2. Lewis, Ranis-Fei: In the context of ‘economic development’ of the underdeveloped ‘dual economies’ Lewis (1954) and Ranis-Fei (1961) discussed similar type of issues. In a dual economy framework the progress of the system primarily depends on the continuous process of accumulation of capital in the capitalistic industrial sector through the transfer of both surplus labour and surplus food grain from the subsistence agriculture. Both the transfers are assumed to take place within a frame of market transaction between the subsistence sector and the industrial sector. Existence of surplus labour is primarily on account of disguised

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3 ‘Ricardian profit-squeeze’ mechanism can be reinterpreted as operating through movement in the terms of trade between agriculture and industry. Due to ‘intensive’ and ‘extensive’ cultivation as cost of food-production rises food-price rises as well. This, in turn, raises money-wage rate in industry to maintain the real (corn) wage rate. Hence, product-wage in industry rises given the inability of industrial capitalists to raise industrial product-price for fear of losing market. Consequently, rate of profit in industry falls and it happens through the movement in agriculture-industry terms of trade against the latter.
unemployment in the subsistence sector. A higher wage rate in the advanced sector compared to average per capita income in the subsistence sector induces surplus labour to migrate to modern sector. Surplus food, on the other hand, is created by the very process of migration. Disguised unemployment implies that transfer of labour leaves the level of food production unchanged and surplus food is created on the assumption that average per capita food consumption remains constant in the subsistence sector. This surplus food is sold to the modern sector against the purchase of industrial goods.

If one assumes a constant wage rate in terms of food in the industrial sector and constant terms of trade between the subsistence sector and the modern sector, then, the product wage in industry is fixed by implication. Constant product wage implies a constant rate of profit and a constant rate of accumulation and industrial expansion. However, this smooth process of industrial accumulation may be hampered due to two factors even in the presence of surplus labour. First of all, transfer of labour from the subsistence sector to the modern sector increases average per capita income of the subsistence sector. This increase in average per capita income may induce the industrial workers to demand a higher wage which reduces the rate of profit and rate of accumulation in the industrial sector. Secondly, increase of per capita income may induce the farmers in the subsistence sector to consume more food in per capita terms and higher wage in the industrial sector may result in a higher per capita consumption of food of the industrial workers compared to what they consumed in the subsistence sector. Both these factors create an excess demand in the food-market which pushes the terms of trade in favour of subsistence sector. A given wage rate in terms of food then
means an increase in the industrial product-wage. Rise in industrial product-wage causes a fall in the industrial rate of profit and accumulation⁴.

3. Preobrazhensky and the concept of 'Primitive Socialist Accumulation':
Preobrazhensky, a noted Marxist economist⁵, understood the limitation of the frame of market-transaction between agriculture and industry in the context of Soviet Socialist industrialization. His conception of agrarian structure is radically different from the structure of subsistence peasant agriculture stereotyped by Lewis and Ranis-Fai. Agrarian sector produces a substantive amount of surplus over and above the subsistence requirements of the peasants, which is appropriated by a class of rich landlords or Kulaks. This surplus constitutes a potential savings for investment in state-owned Socialist industries. Actualisation of the potential requires a mechanism of surplus extraction from the landlords to the state through a policy of procurement at a low terms of trade against agriculture, fixed and ensured by the state itself. This process of surplus extraction for the purpose of development of Socialist industries is – what Preobrazhensky termed – 'Primitive Socialist Accumulation'. The conception owes its origin to the analysis of 'Primitive Accumulation' in Marx’s Capital. Extraction of surplus from feudal landlords through application of state-force played a vital role in the emergence of private capitalistic industries in West Europe.

⁴ A similar type of argument could also be found in Chakravarty (1977) in the context of debate on Indian industrial stagnation. Food-supply-constraint was supposed to move the terms of trade in favour of agriculture initiating a transfer of resources from industry and thereby restricting accumulation and growth (see also, Lipton, 1974 and Mitra, 1977).
1.2.3. Agriculture as the ‘Home Market' for Industry

Till the middle of 20th century these supply-side arguments were discussed several times by many researchers with only occasional mentioning of the demand-side support of agriculture for industry. However, this dominance of supply-side arguments in the literature on agriculture-industry inter-linkage was removed during the second half of the 20th century. In this period many researchers have rather argued for the demand-side role of agriculture in promoting industrial expansion. Various mechanisms have been proposed to explain agriculture’s demand-side contributions to industry. Agriculture as the home market for industry has become a dominant viewpoint both at the level of popular as well as of academic discourses.

1. The Popular Perception: The popular perception is that a bumper crop facilitates industrial revival because it leads to an increase in income or purchasing power in agrarian sector raising demand for industrial goods. The argument is based on an implicit assumption of constant terms of trade. The assumption is necessary because a bumper crop, ceteris paribus, will change the terms of trade against agriculture. This, in turn, will reduce the purchasing power of agricultural sector given an inelastic food-demand from the industrial sector. Even if we allow

5 Period of work: 1925 – 1929. Contributed significantly in 'Soviet Industrialisation Debate'.

6 We can mention in this regard, the following contributions: Malthus (1821) in the context of the debate over Corn Law in England, Marx (1958) and Lenin (1899) arguing for ‘capitalistic transformation’ of agriculture creating home market for industry, Bukharin (1926) proposing agricultural income led industrialisation during the Soviet industrialisation debate and Luxembourg (1951) in the context of realization crisis in capitalistic industry arguing as agriculture providing the 'external market'. In all these cases, agriculture is assumed to provide demand-side support for industry.
for the assumption of constant terms of trade, the increased agricultural output is translated into actual additional purchasing power only after it is sold to the industrial sector\(^7\). Moreover, industrial purchases of the additional agricultural output mean a leakage from the expenditure on industrial good incurred by that sector itself. This reduces demand for industrial commodity. On the other hand, when the additional income that accrues to the agricultural sector through sale of additional amount of food to industry is, in turn, spent on industrial products, demand for industrial commodity rises. However, ultimately there is no impact on the demand for industrial commodity, as the two effects wash off. This result also follows from one of the fundamental propositions of macroeconomics: In a demand-constrained economy only an increase in the ‘net exports’ or ‘export surplus’ and not that in exports per se can lead to an expansion of output and employment. In the case under consideration, though the volume of ‘trade’ between agriculture and industry rises it remains a balanced one. So the popular claim that agriculture can serve as a home market for the industrial sector is a myth as the trade between the two sectors is balanced at constant terms of trade\(^8\).

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\(^7\) The mere rise in production in agriculture does not automatically guarantee a rise in agrarian incomes, because agriculture may face a ‘realization crisis’ in absence of adequate demand for food from the industrial sector. This leads to either accumulation of undisposed stocks of food or sharp fall in food prices reducing the corresponding incomes.

\(^8\) Balanced expansion of trade between agriculture and industry can affect aggregate demand for industrial output under certain cases of redistribution of income on account of variation in the terms of trade. But the popular perception abstracts totally from such redistribution effect. We will elaborate the point when we take up the academic discourse.
Few points to be noted in this regard:

1. In the event of government procurement of the additional agricultural output, industry can have an expanded market. This happens, as the increased agricultural income earned through the sale of surplus agricultural products to government is spent on industrial output. But in this case, it is the increase in government expenditure and not the expansion of agricultural sector as such that creates the market.

2. A similar situation can occur when the surplus agricultural product is exported and the export earnings of agriculture are spent on industrial output. However, in such a case, essentially, the foreign countries are providing the market for industry while agriculture is only acting as an intermediary.

3. Under balanced trade some industries may enjoy a larger market but it will be accompanied by corresponding contraction of other industries leaving the aggregate size of the industrial sector unchanged.

4. Sometimes it is argued that purchase of industrial inputs like seeds, fertilizers and other capital goods creates market for the industrial sector. If such purchases are financed out of agricultural income then there is simply a diversion of 'imports' of the agrarian sector from consumption import to input import from industry leaving the overall situation of balanced agriculture-industry trade unchanged at constant terms of trade. On the other hand, purchases of inputs financed by government subsidies can create additional demand for the industrial sector. However, in such a case, government and not agriculture by itself creates the additional market. The only case under which purchase of industrial inputs by agriculture creates home market is when such purchases are financed by loans.
from the industrial sector through the financial channel. However, in the context of our thesis, the focus is on the role of expansion of agricultural output in creating a home market for industry. This does not happen even in the case under consideration.

The summary statement of our discussion is that the claim of popular discourse that expansion of agricultural output is capable of creating a home market for industry is founded on erroneous argument.

2. The Academic View: The academic view on the issue of home market for industry can be decomposed into two broad groups of writings. The first group consists of a set of analytical-descriptive articles whereas the other group uses formal models to address the question. The first group proclaims agriculture as the home market for industry on two grounds. The first defense of the position is same as that in popular perception\(^9\). We already noted that the defense is based on erroneous argument. The second defense is in terms of redistributive mechanism setforth by a movement of terms of trade following a bumper crop\(^{10}\). It is this

\(^9\) Such a proposition could be found in Kaldor (1967), Mellor (1976), Raj (1976), Chakravarty (1979) and, in more formal terms, in Skarstein (1997) and Bhaduri and Skarstein (2001). It is argued that with the growth of agricultural productivity as rural income rises, it raises demand for industrial commodity and thus expands the home market for industry. Actually, this argument is derived from the Doctrine of Balanced Growth which talks about demand-side as well as supply-side balancing between agriculture and industry ensured through their simultaneous development (Nurkse, 1962). However, the proposition of expanding market for industry through the (unilateral) expansion of agricultural output and income violates this very condition of simultaneity.

On the other hand, the literature which argues that ‘agricultural transformation’ generates surplus for exchange against industrial commodity and thereby creates the home market for industrial sector (Mundle, 1977, 1981; Bagchi, 1981; Nadkarni, 1979) also suffers from a similar problem.

\(^{10}\) See, in this regard, Mitra (1977) and Bagchi (1988). This argument is, essentially, a counter-position of Malthus (1821).
redistributive mechanism which is taken up and clarified in formal terms by the other stream of academic discourse\textsuperscript{11}.

We consider two alternative situations as a convenient starting point for a purposive review of this formal literature:

A. Situation of balanced trade between agriculture and industry.

B. Situation of unbalanced trade between the two sectors.

Within each of these two scenarios, two distinct cases are considered in the literature:

1. When the real-wage in the industrial sector is fixed in terms of the industrial product, i.e. fixed product wage (with variable real-wage in terms of food).

2. When industrial real-wage is fixed in terms of food i.e. variable product wage.

\textit{Thus we get four possible combinations:}


B1. Unbalanced trade and fixed product wage.

A2. Balanced trade and variable product wage.


Following the literature let us now discuss each of these possibilities separately.

\textbf{A1. Balanced Trade and Fixed Product Wage:} For the sake of simplicity, let us assume that only the industrial workers purchase food from the farmers. Food expenditure of the workers constitutes the agrarian income. Balanced trade

between agriculture and industry implies that the income of the farmers is spent entirely on the purchase of industrial goods.

An increase in food-supply, starting from an initial situation of both food-market and industry equilibria, creates an excess supply of food. This excess supply is eliminated through a fall in food-price which is supposed to increase the per worker demand for food. Given the industrial product-wage and industrial employment, the industrial wage bill remains constant in terms of industrial goods. However, a lesser fraction of the same wage bill is spent on food on account of price inelastic food-demand. Thus there is a reduction of farmers' income in terms of industrial good whereas a given product-wage along with a fall in food-price implies an increase in real-wage in terms of food. In this sense, there is a redistribution of income from farmers to industrial workers.

The effect of this redistribution on effective demand for industrial output is as follows. Decreased food expenditure of the workers out of the same wage bill in terms of the industrial good creates an equivalent increase in effective demand for industrial goods since the workers do not save. However, the positive effect on industrial output is exactly offset by the fact that decreased food expenditure reduces farmers' income and thereby farmers' demand for industrial good by an equivalent amount. An increase in marketable surplus thus has no effect on demand-constrained industrial output.\(^{12}\)

\(^{12}\) See in this regard, Balakrishnan (1995), Krishnaji and Krishnan (1998). A similar indication could also be found in Ricardo (1815).
B1. Unbalanced Trade and Fixed Product Wage: In this case, farmers are supposed to save a constant fraction of their income from the sale of food which means that the industry runs an import surplus vis-à-vis agriculture. An increase in marketable surplus, starting from an initial situation of food-market and industry equilibria, creates an excess supply of food. The same chain of arguments holds here as in the previous case. There is a redistribution of income from farmers to workers. Such redistribution increases the workers’ demand for industrial good and reduces the demand of the farmers. However, reduction in demand for industrial goods from the farmers, in this case, is less than the increase in demand of the workers, because a part of reduced income of the farmers is absorbed in the form of reduction of savings. Thus the net effect of an increase in marketable surplus is an expansion of effective demand for industrial output. The increase in industrial output reverses the initial fall in food-price to some extent. But in a well-behaved model, the ultimate effect of an increase in marketable surplus on industrial output is expansionary.

This ultimate effect can be viewed in an alternative way. Increase in marketable surplus pushes the terms of trade against agriculture and given price inelastic food-demand, there is a reduction of farmers’ income or farmers’ savings measured in industrial output. This implies a reduction of ‘import surplus’ of industry vis-à-vis agriculture and causes industrial output to rise\textsuperscript{13}.

\textsuperscript{13} See in this regard, Patnaik, 1972 b; Taylor, 1983; Bose, 1989, 1990; Dutt, 2001. Though the exact mechanisms of agriculture-industry interaction differ in all these models, the underlying principle is same as that discussed in this case (B1).
A2. Balanced Trade and Variable Product Wage: Suppose that a part of marketable surplus is held in the form of inventories by the agrarian sector and the inventory investment in food decreases with movement of terms of trade in favour of agriculture. Two other important assumptions are that the real wage-rate of the industrial workers is fixed in terms of food and the food-expenditure of the workers is exactly equal to the total wage bill. Balanced trade means that the realized income of the farmers from the sale of food is spent entirely on the purchase of industrial product.

Starting from an initial situation of food-market equilibrium, a movement of terms of trade in favour of agriculture (for given levels of marketable surplus and industrial output and employment) creates excess supply in the food-market by decreasing the level of inventory investment of the farmers. This excess supply can be eliminated by an increase in the level of industrial output and employment. In other words, a positive relation between industrial output and terms of trade for agriculture maintains food-market equilibrium.

Similarly, starting from an initial situation of industry-equilibrium, a movement of terms of trade (for given levels of marketable surplus and industrial output and employment) in favour of agriculture increases income of the farmers and decreases profit—income of the industrial capitalists. Such redistribution of income increases effective demand for the industrial sector since the farmers are supposed to have a higher propensity to consume than that of the capitalists. Industry-equilibrium requires an expansion of output with an increase in effective demand. Thus, a positive relation between industrial output and terms of trade for agriculture can maintain equilibrium for the industrial sector. The intersection of
the two positive relations (giving food-market and industry equilibria respectively) defines equilibrium for the system and a stable equilibrium exists under appropriate restrictions.

Given an initial situation of equilibrium of the system, increase in marketable surplus of food pushes the terms of trade against agriculture. There occurs a redistribution of income from farmers to the industrial capitalists, which reduces effective demand and industrial output.

On the other hand, movement of terms of trade against agriculture raises the level of inventory investment of farmers restoring food-market equilibrium as well. The ultimate result is that, an increase in marketable surplus of food leads to industrial contraction.\textsuperscript{14}

A stable equilibrium is not possible without food-inventory demand of the agrarian sector. The same argument is heard in B2 below.

\textbf{B2. Unbalanced Trade and Variable Product Wage:} All the basic assumptions are same as in the previous case, A2. The only difference is that the farmers are supposed to spend their entire potential income or the full value of marketable surplus on the purchase of industrial product. Potential income is greater than the value of sale of food due to the positive inventory investment of food by the farmers. In other words, the agrarian sector runs an ‘import surplus’ vis-à-vis the industrial sector or industry enjoys an ‘export surplus’ vis-à-vis agriculture, the value of which is equal to that of inventory investment of food by the farmers.

\textsuperscript{14} Rakshit (1982).
Given an initial situation of equilibrium of the system, an increase in marketable surplus has two effects on 'export surplus' of industry. The direct effect increases farmers' potential income or industry's 'export surplus' having in turn a favourable effect on effective demand for industrial output. On the other hand, an increase in marketable surplus leads to a reverse effect (the resultant effect of the last case, A2). The net effect depends on the relative strength of the two effects. It is possible for the second effect to dominate so that an increase in marketable surplus of food leads to industrial contraction15.

1.2.4. Our Departure

In all four cases discussed above, 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 contrary, consider a situation where each of the three groups forms separate lobbies and all lobbies are equally strong16. 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–frame addressing the problem of effective demand faced by the industrial sector. The search for an alternative route leads us to Kalecki – his concept of 'domestic

15 This case has been analysed rigorously by Rakshit (1982, section 7.3; 1989). The assumption of full spending of potential income can be useful in demonstrating the essential results in terms of the concepts of export surplus and foreign trade multipliers.

16 The contending lobbies can collude in such situations, the political expression of which is a 'coalition government'. In a regime of 'coalition politics' each of the contending group-interests try to maintain its relative socio-economic position vis-à-vis the others. Consequently, any policy or process initiating redistribution is blocked through bargaining.
exports'. Subsequently, our enquiry on agriculture-industry linkage also brings in his analysis of the role of food-supply in the context of non-inflationary growth.

1.2.5. Kalecki’s Concept of ‘Domestic Exports’

We assume, for the time being that the primary problem for industry is the lack of ‘internal effective demand’ while agricultural supply to industry is sufficient. In such a situation, the only option left for the expansion of the demand-constrained industrial sector, in a closed economy, is the path of government intervention given agriculture’s (proposed) inability to provide the ‘external market’ for industry under the conditions designed by our departure.

Kalecki quite correctly formulated the role of ‘external market’ and ‘home market’ in mitigating the demand problem of domestic industry17. Many economists before and after Kalecki wrongly asserted that boosting up the level of exports is equivalent to expansion of external market18. Kalecki pointed out in clear terms that the extent of foreign market relevant in the context of effective demand problem is not given by the level of export but by that of export–surplus. In his own words, “if exports increase and at the same time there is an equal increase in imports,.........trade is boosted, but production in the country considered does not increase, nor will there be any inducement for expansion......”19, in particular from the demand-side, as “the imported goods absorb purchasing power just like those home produced and thus to the extent that exports are offset by imports they do not

17 Kalecki (1971a, b).

18 Luxemburg, 1951; see also, Patnaik, 1972 a, 1997; Bhaduri and Skarstein, 2001; Thirlwall, 1986.

19 Kalecki, 1971a, 16.
contribute to the expansion of the markets........20. Thus equal expansions of exports and imports in value terms though boost up trade cannot contribute to the effective demand for the industrial sector as they cancel each other.

However, there are practical problems in sustaining export-surplus vis-à-vis rest of the world. Balance of payment consideration requires a matching capital outflow corresponding to export-surplus. It is difficult to ensure the readiness of rest of the world to absorb such capital flows. Moreover, all countries of the world cannot follow simultaneously a policy of export-surplus. Kalecki 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 enjoy ‘export-surplus’. The agrarian sector cannot be the home market since it suffers from the problem of financing its import-surplus (i.e., export-surplus of industry). A well-known fact is that the agrarian sector lacks the power to issue any financial asset like shares and bonds21. According to Kalecki, the government sector is the proper candidate to play the role of home market. It can purchase goods from the industrial sector given its monopoly power over printing money. In its trade with government sector domestic industry ‘exports’ goods against the ‘import’ of money. This export

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20 Kalecki, 1971b, 152.

21 a) The only case under which purchase of industrial products by agriculture creates home market is when such purchases are financed by loans from the industrial sector through the financial channel. However, in the context of our thesis, the focus is on the role of expansion of agricultural output in creating a home market for industry. This does not happen even in the case under consideration.

b) Industry can run an export surplus vis-à-vis agriculture as in case (B2), as discussed earlier. However, we have seen that even in this case an expansion of agricultural output may not expand the market for industrial good.
which is, by definition, an export-surplus is what Kalecki terms as 'domestic exports'. Kalecki's analysis of domestic exports establishes clearly that no sector other than the government sector can serve as the home market for industry. The role of agriculture is quite irrelevant in this specific context.

1.2.6. Kalecki: Agricultural Supply-Constraint

Kalecki rules out agriculture as a possible home market for industrial product. However, this does not mean that he considers agriculture as totally unimportant in the context of industry. There is clear recognition of agriculture as the source of supply of wage-good or food to the industrial sector. Consider a situation such that wage-share in industry is given and the workers spending a constant fraction of wage-income on food at a given terms of trade. Suppose that the level of effective demand is so maintained that industry always produces full-capacity or potential output and potential output grows at a given rate on account of investment. Then, given the assumptions, demand for food grows at the same rate as the industrial growth rate. Non-inflationary growth requires that agricultural production grows at an adequate rate such that the growth rate of supply of food matches the growth rate of demand. If agricultural production fails to grow at the required rate, persistent excess demand for food will continually increase food-price which in turn, will lead to an upward wage-price spiral in the industrial sector. In other words, Kalecki recognizes the role of agriculture as a source of supply-constraint on industry.

22 Kalecki, 1971a, 19.
23 Kalecki, 1993a, b.
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.

1.3. Scope of the Work

We analyze in this work the linkages between the industrial sector and other sectors of a less developed economy, specifically, agriculture and the government, in a multi-sector macroeconomic framework. The basic structure focuses on a capitalistic industrial sector and the precise question we ask is: how can growth of agricultural productivity lead to industrial expansion in the presence of social resistance to a historically evolved (or settled) pattern of income distribution between farmers, industrial capitalists and industrial working class?

Growth of agricultural productivity creates a potential for industrial expansion from the supply-side. Realization of this potential without involving distributional conflict requires an adequate adjustment of the real government expenditure on industry on the demand-side.

Thus in the context of demand, our basic position is that an appropriate government intervention through Kaleckian 'domestic exports' can mitigate the 'problem of effective demand' faced by the industrial sector. On the other hand, following Kalecki, we also recognize that agricultural expansion can relax the supply-side constraint for industrial expansion through the provision of 'wage-

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21 See also, Byres, 1974; Bell, 1974; Kaldor, 1967 and 1976. These authors recognize a similar role for agriculture in promoting industry.

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good'. With these perspectives, it is shown that these demand-side and supply-side inducements should be complementary in nature to ensure a non-inflationary expansion of industrial output and employment. Stated otherwise, it is proposed that the issue of demand creation for industry cannot be separated from that of supply-side support to the industrial sector.

As an extension of our basic structure, we incorporate the scope of government intervention in the food market. The assumption is that the additional food following a rise in agricultural productivity is fully procured by the government to stabilize food-price and initiate 'food for work' programme. Rise in agricultural productivity, then, generates rural non-agricultural employment whereas urban industrial employment remains unchanged. In other words, there is a problem of conflict between rural and urban employment. The conflict is partially mitigated in the case of partial-procurement of the additional food.

Next, we consider, a division of the industrial sector into 'formal' and 'informal' ones. The food-supply is obviously allocated between these two divisions of the industrial sector. Consequently, output and employment of the formal sector will be less in presence of the informal sector for a given level of food-supply, generating a basic conflict between the two sub-sectors of industry. The benefit of an increase in agricultural productivity on the two sub-sectors of industry will depend crucially on the policy undertaken to increase agricultural output. As agricultural output is increased through 'technical progress' the benefit is shared between the formal and the informal sectors. However, increase in agricultural output resulting from 'land-reforms' benefits the informal sector whereas the
formal sector may even contract. Stated otherwise, there is a problem of conflict between these two sub-sectors of industry.

1.4. Plan and Organisation of Work

We start with our basic assumption that the industrial product-wage and terms of trade are given. The assumption freezes the redistribution mechanism between farmers, industrial workers and the capitalists. Freezing redistribution has certain advantages. First of all, all the effects of a change in marketable surplus on industrial output through redistribution create the misconception that agriculture is the home market for industry. With our assumption this possibility is removed. Secondly, redistribution is often not possible when all the three groups form equally strong lobbies. Consequently, we pose the problem of effective demand of industry with government sector acting as the home market and simultaneously, agriculture providing a supply-side support. Construction of the basic model along the stated frame and extensions of the model in various directions is the primary task of our thesis.

Before going into the formal modelling exercise involving the basic analysis and its several extensions we discuss, in brief, the chapterization of our work. We present the basic results that are derived in the following chapters.

Chapter II. A Model of Industrial Output Determination with Agricultural Supply-Constraint and Endogenous Domestic Exports

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.

Moreover, under a given pattern of income distribution expansions of industrial output and employment potentials take place with an exogenous growth of agricultural productivity. Simultaneously, an appropriate expansion of endogenously determined real domestic exports and hence that of home market is achieved to realize these potentials.

Chapter III. Domestic Exports and Procurement: The Rural-Urban Conflict

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 the 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. 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' as above with the increase in food-supply.

**Chapter IV. Formal-Informal Sector Dichotomy: Role of Agriculture and the Government**

In this chapter, we divide the industrial sector into formal and informal segments with distinct characteristics. With such a distinction, we try to analyze, how this informal sector fits into the general structure of agriculture-industry linkage. First, we find that the interaction between agriculture and informal sector operates through simple (market) exchange in absence of any form of government intervention. Here, informal sector can act as a 'vent for surplus' for agriculture, when formal industry fails to absorb agricultural surplus. On the other hand, informal sector can benefit from rise in food-supply either in terms of output and employment or in terms of real income or both depending on the elasticity of labour supply in this sector.

We derive a basic conflict between the formal and informal sectors in terms of employment and output in presence of agricultural supply-constraint. The need for the division of the food-supply between these two sectors is the source of the conflict. This basic conflict becomes crucial in the context of different growth inducing agricultural policies, e.g. 'green revolution' and 'land reforms'.

**Chapter V. Conclusion**

In our concluding chapter we recapitulate the propositions and observations and present the scope of further research.