

TOWARDS EXPLAINING SOME DISTORTIONS IN AGRICULTURE-INDUSTRY INTERSECTORAL LINKAGES: GENERATION CAPACITIES AND PATTERNS OF UTILISATION OF MARKETING SURPLUS OF FOOD

Abebe Haile Gabriel
Ethiopian Civil Service College

Abstract

By highlighting on the crucial significance of strong and dynamic inter-sectoral linkages between agriculture and industry, this paper sets out to explore the marketed surplus generating capacity of the agricultural sector as well as patterns of its utilisation by the non-agricultural sectors. Empirical evidences suggest that the capacity of the agricultural sector in terms of generating marketed surplus of food has been structurally constrained. On the other hand, investment patterns would suggest that the limited marketed surplus of food might have been utilised for fuelling an investment drive tilting towards the service rather than the industrial sector. These tensions exert unwarranted competition between the service and industrial sectors for marketed surplus of food with the effect that industrial competitiveness would be hampered by higher food prices that do not conform to industrial wage levels.

1. INTRODUCTION

The development strategy that the Ethiopian government is pursuing strongly hinges on the presumption that strong inter-sectoral linkages either exist or could be forged between the two goods-producing sectors, i.e., agriculture and industry. Such an assumption invites a number of questions, however: do these inter-sectoral linkages exist in the first place? If so, what forms do they take? Where are they stronger and which would constitute the weakest link in the chain?, etc.

The key factors that would determine the strength of the inter-sectoral linkages are those affecting the processes of generation, mobilisation and utilisation of agricultural surpluses. The extent to which surplus could be generated is a function of production conditions, livelihood patterns, institutional/structural factors, policies, etc. Mobilisation of the surplus generated depends on exchange conditions, infrastructure, institutional factors, policies, etc. Utilisation capacity is conditioned by levels of production and consumption, as well as policies, etc. These processes are interdependent such that if the capacity to generate surplus in a meaningful magnitude is constrained, then not

only will mobilisation be difficult (leakages, etc.) but also there will actually be very little to mobilise, and little of that will be available for utilisation. Similarly, if less of this surplus is utilised in expanding productive capacity (investment in industry), then capacity to generate surplus will further be hampered in the next cycle.

The structure of the Ethiopian economy is characterised by a dominant but poor performing agricultural sector on the one hand, and a weak but also fragile industrial sector on the other, in terms of volume of output, and providing employment and source of livelihood for the people. It is also characterised by the existence of a thriving service sector. Recent statistics would show that each of these sectors contributes respectively 51.5, 10.7, and 37.8 per cent to the GDP (UNDP 1998). Trends would show that agricultural share in total GDP has been declining, that of service increasing, while industrial (particularly manufacturing) share has not been showing any sign of improvement. Clearly the picture that is portrayed is not an example of a healthy economic transformation process. For one thing, the country's dependence for output, foreign exchange earning, employment, etc., on the agricultural sector has not waned much. For another thing, the decline in the share of agricultural GDP value-added has not been matched by an increase in the share of the industrial sector. This is because the service sector has been expanding much faster, in effect thwarting the agriculture-industry inter-linkages, and further compounding the inter-sectoral imbalances. A number of factors could be identified for such an imbalance in the economic structure. This paper sets out to describe some of the mechanisms that could have led to such an imbalance, and identify some of the tensions that exist in the system.

The paper has two sections. The first outlines the conceptual issues as relates to inter-sectoral linkages and the place and function of agriculture in the process of economic transformation; particular emphasis is given to the food-supply problem as an agricultural constraint. The second relates this with the Ethiopian experience and explores it from two major angles. First, it characterises the food supply response of Ethiopian agriculture and outlines the factors that underpin it (i.e., from the source side). This is followed by an exploration into what actually happens to the marketed surplus of food, however small it may be, once it reaches its destination (i.e., from the user side). Evidences would be provided on the investment patterns in support of the argument that, as far as at least food supply is concerned, agriculture-industry linkages have been thwarted by a service sector with its own peculiar characteristics, which not only diverts real resources away from the good-producing sectors (particularly from manufacturing) but also generates high demand for marketed surplus of food effectively crowding out the industrial sector. Thus, the picture that is portrayed by the current economic structure of Ethiopia, namely a declining share of agricultural GDP matched by a pompous service but a feeble manufacturing sector, can be partly explained by this tension.

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2. THE FOOD SUPPLY PROBLEM IN INTER-SECTORAL LINKAGES

For countries such as Ethiopia where the agricultural sector is predominant within their economy, the economic transformation process inevitably depends on the extent to which agriculture can make positive contribution. The pace and extent of the drive to industrialisation (economic transformation) would be determined by the success of the agricultural sector, not only to finance industrialisation but also to be able to back the latter up through generating effective demand for the industrial sector. Some studies suggest that a 10 per cent growth in agricultural output can bring about 13 per cent growth in non-agricultural output (Islam 1989 quoted in Jazairy et al., 1992).

It could be hypothesised that, in the short-run, the most important linkage remains to be:

- a) Whether surplus food (since this is a wage good) can be produced in desired magnitude without a serious rise in its price; otherwise, it will reduce industrial profit, stifling incentive for industrial investment. It would be important to identify the factors that determine this as well as characterise what the present scenario looks like in the Ethiopian context.
- b) Whether domestic raw materials and inputs would make a significant proportion of industrial raw materials so that the industrial value-added would be meaningful. Similarly it would be helpful to investigate what the general picture looks like in the Ethiopian case, and identify some of the crucial issues to be considered.
- c) Whether the economic transformation process is supported by a vibrant export sector. What does the export structure look like; what ought to be done?
- d) Whether the industrialisation drive is supported by effective and rising demand for its products. This has numerous implications: if there is one thing to be learnt from past industrialisation processes, one of the factors that led to the failure of those strategies has been lack of effective demand; namely, the inter-sectoral backward and forward linkages have been relegated to secondary importance while foreign markets could not have been penetrated easily.

Infusing dynamism between the different sectors implies that incomes would improve in all sectors. For a successful economic transformation process to take place, the rural economy should move from a more self-sufficient and subsistent sector to a more specialised and market-dependent situation. A healthy and desirable inter-sectoral linkages would presuppose that the sectors are interdependent, and the flows of the resources are ensured and facilitated by appropriate policies, institutions, etc., that determine not only the strength but also the nature of the linkage itself. Also, for an economic transformation to take place, more of the resources should progressively be used in the industrial sector where the value-added to the used-up resource is larger than in agriculture, thus accelerating the accumulation and economic transformation process.

Against this general framework, this paper sets out to present a very limited and specific element of the inter-sectoral linkages—namely, the food supply problem. The food supply problem is central to inter-sectoral linkages because it determines not only the success of industrialisation (or economic transformation process in general) but also combines several important impacts: first it has an employment impact both in agriculture (through its production) and in non-agricultural (via its impacts on wage levels) sectors. Second, food supply has a balance of payment impact in terms of foreign exchange savings and/or earning. Third, it has an income impact because it constitutes an important source of income for peasants and also because real wages in the non-agricultural sector depend on its price. Finally, food supply has a welfare impact in terms of ensuring food security.

Classical economists presumed that a rise in price of wage-goods due to food supply growing too slowly to offset population growth (employment) would reduce investible profit. Ricardo's analysis concerns both the constraints to agricultural growth and the impact of these constraints on the process of accumulation. Accumulation, in the classical formulation, was perceived to result from high savings and investment of profits. And, large food supply was supposed to depress food prices so that wages could be maintained at low levels. The agricultural constraint (termed the 'Ricardian trap') would then set in due to wage increases, the result being food prices rising so as to eventually consume all the profits. For classicists, the size of supply and price of food (wage-goods) are the strategic variables determining the rate of accumulation. Ricardo stressed the significance of cheap food supplies because otherwise its disincentive effect on the part of capitalists to expand investment would be pernicious. Liberalisation of food imports as an important public policy instrument formed the cornerstone of the Ricardian antidote for overcoming the agricultural constraint to development, seen either from a political or purely economic viewpoint.

In modern development discourse, the 'dualistic growth model' is one that attempts to conceptualise, albeit in a somewhat partial form, the role of agriculture in the process of industrialisation in the context of inter-sectoral linkages. The seminal work of Arthur Lewis (1954) that the transfer of 'unlimited supply of surplus labour' provided the theoretical groundwork for the dualistic model. The model describes how surplus rural labour whose supply is perfectly elastic could be productively absorbed in the modern sector, thereby leading to economic development. Dualistic models assume that such labour transfer and accumulation is possible because a continuous labour transfer to the modern sector tends to result in a labour shortage in agriculture; it would, therefore, induce technological progress in order to maintain food production levels. The major implication of this model is that growth can only be self-sustaining if agricultural productivity increases through technological progress (see also Hayami 1997:75, Hayami and Ruttan 1985).

Kalecki's '*Financing Development*' (1976) presents a more elaborate identification of the food-supply problem as a crucial bottleneck for accumulation processes. The slow-growing food supply from the peasantry, which is institutionally constrained, is

central to Kalecki's model. He links real industrial wage determination to the institutionally constrained food supply, which is inelastic. He further interprets the 'problem of financing development' as the adjustment of planned aggregate output to the available supply of necessities and the application of a progressive tax in order to reduce total consumption. The crucial variable is the possibility of expansion of the supply of necessities in response to demand, so that economic development can be financed with no inflationary price increases of necessities, among which a chief item is staple food. The relationship follows:

Kalecki argues that the supply of necessities should be expanded to balance the demand growth in order to minimise the inflationary pressure exerted by industrial expansion, which, in turn, would have regressive distributional consequences (see Saith 1990: 104). Assuming a stable income distribution, for a certain aggregate economic growth projection (r) there will exist a determinate rate of growth (c_n) in demand for necessities which is a function of income elasticity of demand (e) and population growth (q) where (e) is less than one, following Engel's Law such that

$$c_n = q + e(r - q)$$

Kalecki states that the key to financing a more rapid growth is the removal of obstacles to the expansion of agriculture, such as land ownership and domination of peasants by moneylenders and merchants.

The food supply constraint might, therefore, operate in different ways. Whether or not and the extent to which it is binding depends on several factors. For example, history reveals governments' attempts to short-circuit the agricultural supply constraint through institutional mechanisms (e.g., by resorting to foreign aid or loans or breaking the marketed surplus constraint by setting up of state farms). In such cases, which social class bears the brunt of accumulation differs, depending on the circumstances. For example, if accumulation is financed through inflationary mechanisms (i.e., the agricultural constraint operating through the real wage basket for labour and depending on the degree of downward flexibility of wages) then the major cost might be borne by wage labourers.¹ But if the state resorts to bypassing the constraint, to selective commoditisation schemes and controlling the production of marketed surplus (such as happened in Ethiopia), then the peasants would bear the cost through exclusionary policies and practices. A third possibility is conceivable in which both the industrial workers and the peasantry suffer as a result of internal terms of trade shifting in favour of industrial consumer goods with the effect of lowering farm incomes and real industrial wages.

Leading from this discussion, a question is in order, namely, 'How can such problems be avoided in a dynamic way?' Mellor (1966) attempts to address this through a combination of technological and policy interventions. He argues that an increase in food demand must be met with a corresponding increase in its supply mainly through unit-cost-reducing factors. Mellor advocated treating agriculture as a separate

delineable sector in theories of development, because growth of agriculture depends not only on the sector itself but also on what happens in the rest of the economy. A specific focus on increasing the supply of food to mobilise labour and to contain the rising capital intensity in developing countries was crucial for Mellor because 'economic development is characterised by a substantial increase in the demand for agricultural products, and failure to expand food supplies in pace with the growth of demand, can seriously impede economic growth' (Mellor 1966) such that high food prices would bid up wages, thus lowering employment and depressing growth.

More recently, Mellor (1988) showed the undesirability of turning the domestic terms of trade in favour of agriculture through higher food prices relative to non-agricultural goods since it redistributes income in favour of a low-saving sector, which discourages the flow of rural labour to urban jobs. Central to Mellor's argument is that food prices should not be allowed to increase on the premise of providing incentives to farmers to increase production. Instead, he suggests an alternative in enhancing technological change so that average costs of production could be significantly lowered. Hence, a high-level equilibrium between food production and employment could be achieved, which 'could be justifiable both on social welfare grounds and because it leads to a higher overall rate of growth'.

3. THE FOOD SUPPLY PROBLEM AND INTER-SECTORAL LINKAGES IN THE ETHIOPIAN CONTEXT

First and foremost, there is the special case of the 'food-supply problem', which is that, peasant households produce food for their own-consumption as well as for the market. If only the marketed surplus of food were the focus, this could then be achieved relatively easily through several mechanisms. Two issues are worthy of note in this regard. The first relates to the determinants of the magnitude of the marketed surplus of food supply. It is the same as asking the question: 'Is there food surplus at the point of its production'? Aggregate estimates of food supply (cereals) response to prices would suggest that both short and long-run elasticities have been low, i.e., in the areas of 0.4 and 0.7 respectively. Individual crop responses are not essentially different: ranging from 0.11 to 0.24 for sorghum and teff respectively in the short-run, and from 0.25 to 0.55 for the two crops respectively in the long-run (see, Abebe 2000). This would imply that even if output prices were increased significantly, food supply might not come forth in desired magnitudes.

Moreover, inter-regional profiles of cereal production and marketed surplus would show that the bulk of cereal production was concentrated in few regions; three former provinces clearly dominated both the production and marketed surplus: Shewa, Arssi and Gojam, each contributing respectively 39 percent, 19.2 percent and 14.3 per cent of the total production. Together these account for 72.5 per cent of the total. If we consider only the two top-ranking regions, 80.8 per cent of teff comes from Shewa and Gojam, 80.5% of wheat comes from Shewa and Arssi, 71.9% of barley is from

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Shewa and Arssi, 51.9% of maize is from Shewa and Wellega, and 79.5 of sorghum comes from Hararghe and Shewa (see, CSA, various reports). Similarly, few regions have marketed surplus equal or in excess of 20% of their total production (Arssi, Shewa, Keffa, and Sidamo). The case of Keffa and Sidamo can be explained partly by the peculiarity of consumption patterns there; that is, tubers (enset) are the basis of diet for households. Keffa and Sidamo's share in total production is insignificant (6.6% and 5.4% respectively) in the total.

Table 1. Regional Profile of Production (1979-92 Average) and Marketed Surplus of Cereals (%)

	Teff		Barley		Wheat		Maize		Sorghum	
Region	share in output	share in market	share in output	share in market	share in output	share in market	share in output	share in market	share in output	share in market
Arssi	6.4	28.7	37.8	17.7	40.4	33.5	10.5	38.2	4.9	22.3
Bale	3.3	20.1	36.6	12.1	52.5	9.4	7.3	7.3	0.3	0.3
Shewa	27.2	25.8	17.6	15.5	16.4	18.5	24.3	21.1	14.4	10.2
Gojam	41.2	17.6	17.2	7.8	10.0	8.3	26.1	11.5	5.4	13.9
Wellega	23.0	17.1	5.7	11.9	1.5	7.2	53.1	15.2	15.6	16.8
Gonder	34.0	15.4	24.7	16.1	10.8	21.9	8.5	9.3	22.0	22.6
Wello	17.8	9.2	29.6	8.6	11.5	8.2	7.9	8.6	33.2	22.2
Keffa	16.8	34.8	5.2	27.3	3.4	29.1	54.7	20.4	19.8	16.2
Illubabor	25.5	14.6	4.4	20.2	3.2	26.2	52.3	16.8	19.9	8.6
Sidamo	8.0	72.7	9.6	40.1	2.4	32.8	76.0	50.5	4.0	12.5
Hararghe	4.6	39.6	3.2	23.2	4.4	26.5	26.0	15.4	61.9	11.5
Gamugofa	17.2	n.a.	19.6	n.a.	3.2	n.a.	30.4	n.a.	29.6	n.a.
National*	23.0	0.31	17.1	n.a.	15.1	0.28	30.2	0.30	14.8	n.a.

Includes millet, oats, pulses, and oilseeds. Source: computed from CSA, various reports; AMC Statistical Digest, 1987; The marketed surplus for the national estimates is obtained from GRMP/CSA, 1996 Rural Household Survey.

A relatively high concentration of marketed surplus in one or two crops is also noticeable. About half of total marketed surplus of Arssi and Bale comes from wheat alone; 55% of marketed surplus in Gojam comes from teff only; maize constitutes 52%, 49%, 55%, and 78% of total marketed surplus in Wellega, Keffa, Illubabor and Sidamo respectively; while sorghum dominates the scene in Wello (56%) and in Hararghe (48%). Only in Shewa and Gonder is the source of marketed surplus diversified over a number of crops.

To explore whether the distributional pattern of regions' marketed surplus does correspond proportionally to their production pattern, Spearman's rank correlation coefficient was computed between percentage of production and percentage of marketable surplus. Results indicate that for most regions a weak but positive r^2 would characterise the pattern. A particularly strong and positive r^2 (0.90) was detected for Shewa, indicating a fairly strong correlation between share of crops in production and in

marketing. Three regions—Keffa, Illubabor, and Hararghe—showed negative r^2 , suggesting that minor rather than major crops are the important components of marketed surplus in these regions. It also implies that, since these regions are known for their cash crop production (coffee, t'chat), the bulk of cereal production is for household consumption. Therefore, when the major source of cash income does not come from crop sales one would expect a negative and strong r^2 ; while for those regions whose cash demand is met primarily from grain sales a positive r^2 is expected. It is important to note that certain cereals are cultivated primarily for sale rather than for household consumption (e.g., teff contributed to 8% and 4.6% of total cereal production in Sidamo and Hararghe respectively, but nearly 73% and 40% of it was marketed).

Table 2. Inter-crop Distribution of Marketed Surplus by Region (%)

Region	Teff		Barley		Wheat		Maize		Sorghum		Total		Average
	m/Q	m/M	m/Q	m/M	m/Q	m/M	m/Q	m/M	m/Q	m/M	m/Q	m/M	
Arssi	1.84	6.77	6.69	24.63	13.54	49.85	4.00	14.73	1.10	4.05	27.16	100.0	29.1
Bale	0.67	6.68	4.43	44.17	4.93	49.15	-	-	-	-	10.03	100.0	14.5
Shewa	7.03	36.26	2.73	14.08	3.04	15.68	5.13	26.46	1.47	7.58	19.39	100.0	16.6
Gojam	7.25	54.97	1.34	10.16	0.83	6.29	3.00	22.74	0.76	5.76	13.19	100.0	13.6
Wellega	3.94	25.55	0.68	4.41	0.11	0.71	8.08	52.40	2.62	16.99	15.42	100.0	16.1
Gonder	5.24	30.22	3.97	22.90	2.37	13.67	0.79	4.56	4.97	28.66	17.34	100.0	18.5
Wello	1.63	12.37	2.54	19.27	0.95	7.21	0.68	5.16	7.38	55.99	13.18	100.0	12.1
Keffa	3.72	25.88	0.89	6.27	0.84	4.37	8.78	49.34	1.71	14.18	15.95	100.0	23.9
Illubabor	5.86	23.32	1.42	5.58	0.99	5.27	11.17	55.05	3.21	10.72	22.64	100.0	15.2
Sidamo	5.84	11.84	3.84	7.78	0.80	1.62	38.36	77.75	0.50	1.01	49.34	100.0	52.4
Hararghe	1.81	12.20	0.74	4.99	1.15	7.75	4.01	27.04	7.12	48.01	14.83	100.0	15.1

m/Q represents the share of marketable surplus of a crop in total cereals production,
m/M indicates percentage of marketed surplus of each crop in total marketed surplus.

Source: Same as in Table 1.

One of the important factors affecting the potential surplus is the existence of spare capacity of agricultural land both at macro and micro levels of production organisation. There are growing evidences that in many rural areas, given the state of technology and prevalent patterns of size of holdings, households have difficulties meeting mere subsistence by operating on their land let alone producing surplus (see, Abebe 2000; Berhanu, 1991). The critical minimum land size that is required to cover minimum calorie needs, cost of production, basic needs and allowing for normal fluctuation, is not significantly larger than the landholding size, thus leaving little, if not none, room for the generation of surplus beyond the subsistence needs. Peasant surplus is not only meagre in magnitude, but also is seasonal in its availability. Therefore, structural factors do the bulk of the explaining for the lack of responsiveness of food supply to prices.

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Implicit in this argument is that the level of productivity is very low - (examples from other cases such as Asia would imply that this size of land is not actually very small) – but significant investment is necessary especially in the areas of infrastructure including irrigation networks. But, some food is coming to urban centres, however small. Our model assumes that the contribution of this food is to assist industrialisation process in a sustainable manner. In fact there is a need for increased productivity of agriculture so that food can be supplied at reduced average cost structure so that food prices are not rising significantly. That is, the pattern of the economic transformation process dictates not only the manner in which the food supply is utilised but also its productivity levels. Conversely, patterns of its use determine the pace and orientation of process of economic transformation.

The movement of changes in the structure of Ethiopia's economy over the last twenty years indicates that agricultural share has declined, service sector expanded, while manufacturing did not significantly increase. This might suggest that food surplus has not been used mainly for expansion of productive capacities—namely the contribution of food supply towards the industrialisation process has been paltry (this is despite the notable mobilisation efforts of the previous regime largely in terms of squeezing it). Rather, it has been used to feed the expanded state apparatus and the army (see Eshetu and Mekonnen 1992; Abebe 1996, 2000).

The second aspect concerns the patterns of utilisation of the surplus generated. Some information on the patterns of investment during the last 7 years is presented below to show how the balance has tilted in favour of the tertiary sector both in terms of number of projects approved and the investment capital allocated. The total approved investment projects between July 1992 and July 1999, the shares of the primary, secondary, and tertiary sectors were respectively 25.5%, 44.5% and 30%. In terms of investment capital, the shares of the three sectors were 14.5%, 33.9% and 51.6% respectively. Of these, 45.89% of the investment capital of those projects which commenced operation went to the tertiary sector. Note that in terms of the number of projects that commenced operation, the share of the primary and secondary sectors (respectively, 38% & 49% of the total) are larger than that of the tertiary sector (13.5%); this might have been due to the fact that the average capital intensity of the tertiary sectors have been larger, which is exaggerated due to electricity generation requirement of heavy investment capital.

Partly, what determines the investment patterns is the capacity of the domestic investors to generate sufficient amount of savings and capital (in view of the undeveloped nature of capital markets) to finance it. But, even when we consider those projects that are entirely foreign, half of the total newly approved projects between July 1992 and July 1999 were in the tertiary sector. Primary and secondary sectors received 14% and 36% respectively. In terms of investment capital the shares of the primary, secondary and tertiary sectors were respectively 6%, 23% and 71%. But, equally, it could be argued that private investment behaviour in this country seems to have been dictated more by copying and speculating tendencies rather than

enterprising. If we have to go by our intuitions and by what we casually observe, wherever we travel around the country, in each perceivable town of a district, zone, or region, the single most important investment venture has been hotels. This is also reflected in the patterns of investment within the tertiary sector. Hotels and tourism would constitute about 23% of approved projects within the tertiary sector, only surpassed by the real estate development. Of those new projects that commenced operation, hotels and tourism constituted 42% of the tertiary sector.

Similarly, the regional distribution of investment projects would indicate that hotels and tourism have been the most important ventures within the tertiary sector. They would constitute for 56% of the total new domestic investment projects in Tigray and Amhara regions during the last seven years. In SNNP and Oromiya regions they make up for 53% and 42% respectively. In some particular cases, such as Benishangul-Gumuz, it accounts for 100% of the total. This should be a subject of concern because unlike bigger cities, the outlying rural areas have actually been seeing quite few industrial investment projects. The role of rural industrialisation for a successful agricultural and economic transformation cannot be exaggerated.

Arguably, this has to do with history and culture—the higher social class that appropriated the agricultural surplus during the imperial times had been engaged in prodigal consumption. The little surplus that was generated in the economy went to finance the extravagant life-styles led by the members of the higher class (which was unsustainable by the economic base) instead of having been used for productive investment. Excessive spending that is associated with ‘squandering of money over festivities and leisure’ has been idolised rather humorously for quite some time by a large segment of the society. In some sense, the flourishing of hotels throughout the country during the last few years would be considered as reincarnation of the state of affairs in the past. As a result, we have now a big army of a ‘consumer’ social category who tends to measure its success by the amount of money spent over excesses and leisure, thus guaranteeing a reliable and steadfast market for the venture. In these circumstances then, most private investors would naturally resort to making an easy-and-quick profit through such investment patterns rather than taking the risk of waiting and being engaged in aggressive marketing strategies that industrialisation, particularly manufacturing, would require.

In this context, it is important to note that the linkage that the agricultural sector is forging is not mainly with the industrial sector, which not only would expand productive capacities but also produce means of production for the agricultural sector, it is rather with a sector that is consumptive rather than productive in the strictest sense of the term. The expansion of this sector has generated high demand for the ‘marketed surplus of food’ with the effect that food prices have risen tremendously to the extent that the movement of food price indices does not conform to industrial wage levels (with the consequence that the purchasing power of industrial workers’ wage has been eroded significantly) or to that of the profitability of the industrial sector either. In effect, we have a marketed surplus production pattern that is tuned to the demands of

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the service sector rather than the industrial sector. One has to note that area cultivated under teff production—the single most important marketed surplus of food crop—is by far the largest compared to any other crop in the country.

**Table 3. New Domestic Investment Projects (Tertiary Sector) by Region %
(July 1992-July 7, 1999)**

Region	Electric Gnrtn	Constn	Real Estate Dev't	Trade, Mainte- nance	Coffee Clean export	Hotel and Tourism	Trnsprt Storage Cmmnn	Edctn Service	Health Service	Other Business	Total
Tigray	—	6.25	4.17	10.42	—	56.25	4.17	4.17	6.25	8.33	100.00
Afar	—	85.71	—	14.29	—	—	—	—	—	—	100.00
Amhara	1.90	0.63	18.35	10.76	—	55.70	1.27	3.80	7.59	—	100.00
Oromiya	0.79	1.59	7.94	13.49	—	42.06	4.76	6.35	20.63	2.38	100.00
Somali	—	83.33	—	16.67	—	—	—	—	—	—	100.00
Ben-Gmz	—	—	—	—	—	100.00	—	—	—	—	100.00
SNNPR	1.12	10.11	7.87	14.61	—	52.81	—	4.49	6.74	2.25	100.00
Gambella	—	—	—	100.00	—	—	—	—	—	—	100.00
Harari	—	3.28	47.54	19.67	—	18.03	1.64	4.92	1.64	3.28	100.00
AA	—	8.47	37.71	7.20	1.69	12.15	3.39	11.86	7.63	9.89	100.00
DD	—	4.81	41.35	20.19	0.96	6.73	6.73	11.54	3.85	3.85	100.00
All	0.38	7.09	29.50	10.59	0.99	24.62	3.20	9.07	8.08	6.48	100.00

Source: Ethiopian Investment Authority, 1999.

The implication is clear: industrial sector is met with a fierce competition with the service sector not only for the investible capital but also for marketed surplus of food. This is exacerbated by the fact that the developmental processes of the industrial and service sectors are disjointed. Industry is constrained by both supply and demand factors. The few agro-industries that exist today import their inputs (e.g. wheat) with hard-earned foreign exchange rather than depending on the locally produced ones. Part of the explanation is the fact that local agricultural production capacity is very small, weak and extremely unreliable. A healthy balance between these two sectors would have been realised if the service sector development were largely triggered in response to the demands placed by that of the goods producing sectors (industry, agriculture, mining, etc). To the contrary, the engine that propels the service sector development seems to reside within the high propensity of a social force inclined towards 'consumption', which is also matched by a preferential allocation of bank loans for investment in this sector. This exerts tensions between the inter-sectoral linkages.

In the process, marketed surplus of food, which is meagre in absolute terms, is dissipated and vanishes from the production circuit without contributing to the industrial value-added that plays significant role in the economic transformation process.

4. CONCLUSION

In this paper an attempt has been made to amplify the food-supply problem as an important element of inter-sectoral linkages from two angles. The first is its centrality in determining the process of economic transformation. The second concerns the factors that determine its generation as well as patterns of its utilisation. It is shown that marketed surplus of food emerges from a rather narrow origin. It is limited to few crops on the one hand, and do not correspond with production pattern, in the main signifying that peasant production is governed by own consumption demands rather than for the market. On the other hand, investment patterns suggest that over the past few years it has concentrated on services rather than industry, which could perhaps be explained by propensities of investment driven by derivation of quick profits and limited tendency to take risks. I have argued that, given the state of affairs, agriculture-industry linkages have been thwarted by a self-serving service sector. The logical conclusion emerging out of the arguments is that such a structure does not depict a healthy structural balance.

But it could be asked: "what is wrong in the prevalent structural balances?" After all, the conventional wisdom that rural people derive their significant share of livelihood from agriculture is being contested at some quarters (looking at the settlement patterns, occupation, income sources etc), arguing for a corresponding reorientation of priorities that should be reflected in shifts of development strategies and policies. In concrete terms, such an argument calls for more focus to be accorded to the service sector in a number of terms (see, Brycesson and v.d. Laan 1994). Similarly, there are a number of countries that entirely depend on their service sector without necessarily going through industrialisation.

In the more conventional route of the economic transformation process, the development of the service sector is such as to respond to demands placed by the industrialisation derives. The question that should be posed, in a situation such as ours where a large and growing service sector coexists with a declining agricultural and stagnant manufacturing sectors is: (i) how could this be explained? And (ii) what are its possible implications for inter-sectoral linkages and for successful economic transformation process?

The immediate policy implication emerging from the arguments would be that there should be a package of policy instruments for investment in manufacturing sector in terms of having a 'big-push' effect that is different in orientation and purpose than that of investment in services sector. This is particularly important if industrialisation is desired not only for bringing about a faster rate of economic growth but also for achieving improved agricultural productivity levels in terms of supporting the agricultural sector by making available the required technological inputs (e.g., fertilisers, farm implements) and consumer items as well as soothing the rural land pressure by providing additional sources of employment and incomes (through rural industrialisation) for the majority of the Ethiopian population. This way, the strong

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reliance of the industrial sector, its dependence on and therefore vulnerability to the foreign sector, could be substituted by stronger domestic forward and backward linkages. Similarly, the impact on agriculture would be that direct dependence on and vulnerability to climatic factors could be mediated by a stronger domestic intersectoral linkages and inter-dependence.

¹ Kalecki (1976) attributes this process to the supply elasticity differentials between food (which is rigid) and industrial consumer goods (which is fairly elastic). The existence of excess capacity in industry allows quantity adjustment while it is the price that adjusts in agriculture, with the ultimate impact of improving the terms of trade of food producers and a decline of real industrial wages.

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ANNEX 1

**Total Approved Investment Patterns (Number of Projects, and Investment Capital)
July 1992-July 7 1999.**

Sector/Sub-sector	No.	Capital	% No.	% Capital	Capital Intensity
(a) Primary Sector	1,315	6,970.69	100.00	100.00	5.30
Food crops farming	250	1,999.18	19.01	28.68	8.00
Cash crops farming	107	1,001.92	8.14	14.37	9.36
Mixed food and cash crops farming	314	2,015.57	23.88	28.91	6.42
Livestock farming	340	468.35	25.86	6.72	1.38
Integrated crops and livestock farming	85	372.16	6.46	5.34	4.38
Agricultural services	168	578.11	12.78	8.29	3.44
Forestry	8	17.29	0.61	0.25	2.16
Fishing	6	9.38	0.46	0.13	1.56
Petroleum and natural gas	1	101	0.08	1.45	101.00
Mining and quarrying	36	407.73	2.74	5.85	11.33
(b) Secondary Sector	2,292	16,263.53	100.00	100.00	7.10
Food products	515	2,946.14	22.47	18.12	5.72
Coffee hulling	590	932.24	25.74	5.73	1.58
Beverages	39	2,131.43	1.70	13.11	54.85
Textiles except garment	18	1,005.37	0.79	6.18	55.85
Garment and related articles	64	200.26	2.79	1.23	3.13
Tanneries	49	630.14	2.14	3.87	12.86
Footwear	107	441.25	4.67	2.71	4.12
Wood products except furniture	8	256.61	0.35	1.58	32.08
Paper, paper products and printing	169	679.44	7.37	4.18	4.02
Chemical products	109	898.46	4.76	5.52	8.24
Pharmaceutical products	19	566.67	0.83	3.48	29.82
Plastic/rubber products except footwear	144	1,018.42	6.28	6.26	7.07
Non-metallic mineral products	123	1,807.73	5.37	11.12	14.70
Metal products, machinery & equipment.	195	1,718.66	8.51	10.57	8.81
Electrical machinery and apparatus	22	414.61	0.96	2.55	18.85
Radio TV and communication equip.	5	41.49	0.22	0.26	8.30
Medical instruments	12	107.93	0.52	0.66	8.99
Motor vehicles and other transports	16	192.15	0.70	1.18	12.01
Furniture	71	229.66	3.10	1.41	3.23
Other manufacturing	17	44.87	0.74	0.28	2.64
Tertiary sector	1,549	24,745.23	100.00	100.00	15.97
Electricity generation	13	2,722.33	0.84	11.00	209.41
Construction	189	5,609.34	12.20	22.67	29.68
Real estate development	394	6,153.48	25.44	24.87	15.62
Wholesale/retail trade, maintenance	153	499.3	9.88	2.02	3.26
Coffee cleaning and exporting	25	323	1.61	1.31	12.92
Hotel and tourism	351	2,909.20	22.66	11.76	8.29
Transport, storage and communication	46	3,487.61	2.97	14.09	75.82
Education service	142	1,151.41	9.17	4.65	8.11
Health service	129	1,255.95	8.33	5.08	9.74
Other businesses	107	633.35	6.91	2.56	5.92

Source: Ethiopian Investment Authority, 1999.