

# TRADE LIBERALIZATION AND THE COFFEE SUB-SECTOR: SOME IMPLICATION FOR THE FOOD SUB-SECTOR\*

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## **Abstract**

*In this study an attempt is made to examine trade liberalization and its implications for the coffee sub-sector. Pre and post-reform data are analysed on the basis of 'the before after approach'. The study shows that the liberalization carried out is strongly associated with an increase in the level of export. This result is chiefly attributed to the exchange rate policy pursued. The micro evidences examined show that the supply price elasticity for coffee is either small or statistically insignificant. This implies that price liberalization by itself may not bring a major change in the coffee sub-sector. The study also underscores the problem of ensuring food security by relying on unreliable world primary commodity markets.*

## **1. INTRODUCTION**

Coffee is the major export commodity of Ethiopia, contributing an average of 65% to total export earning (foreign exchange) and providing a source of livelihood for a large number of farmers. The volume of coffee export, prices and farm income are dependent largely on both national and international markets as well as trade policies. It is therefore important to assess the impact of domestic and international agricultural trade policies on coffee exports in Ethiopia and how this affects national and household food security.

There are a number of policy measures, both national and international, that have an impact on the export sector and food security in Ethiopia. One of the most relevant of these measures that needs to be considered in the context of this study is the Structural Adjustment Program (SAP), prescribed by the IMF and the World Bank and under implementation in Ethiopia since 1992. This policy package, which includes

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trade liberalization as one of its components, has the same effect as the implementation of the Agreement on Agriculture (AoA). In this agreement Ethiopia had already committed itself to lifting most agricultural subsidies and reduced tariffs substantially although it is not a member of the World Trade Organization (WTO).

This study is concerned with the evaluation of the components of SAPs that are relevant to the coffee sub-sector and their implications for food security. The paper is organized as follows: Section two will outline the methodologies employed in evaluating liberalization schemes such as SAPs and justify the approach adopted in this study. In section three Ethiopia's external trade policy is examined in order to give a background for the analyses in sections four and five. Section four deals with the evaluation of liberalization and its impact on the coffee sub-sector. Section five is devoted to draw implications for food security by examining the existing micro-based studies. Section six provides the conclusions of the paper.

## 2. THEORETICAL ISSUES IN EVALUATING LIBERALIZATION PROGRAMS

Since the 1980s, the World Bank and IMF, and increasingly WTO- inspired programs of liberalization have been carried out in almost all African countries. There is a serious disagreement about the effect of these programs in the literature (see Alemayehu 2002). One major problem in understanding the effect of these programs is lack of agreement on the methodology appropriate to evaluate such liberalization schemes. There are at least five approaches employed in the evaluation of the impact of Bank/Fund supported programs in general and trade liberalization in particular: (1) the *before-after* approach; (2) the *with-without* approach; (3) the *actual-versus-target* approach; (4) the *modeling/simulation* approach, and (5) the *econometric* approach (See Khan 1990; Pio 1994)

The literature on evaluation of structural adjustment programs and the attendant liberalization is dominated by the *before-after* approach. Other works cited include, *inter alia*, Killick (1984), Zulu and Nsouli (1985), Poster (1987) (see Goldestin and Montiel, 1986; Khan 1990). This approach basically compares performance of the economy (or major macro variables) before and after liberalization or before and after the implementation of SAPs. Although it is to apply, the approach is fundamentally based on the *ceteris paribus* (other things being equal) assumption which makes it difficult for it to capture the independent effect of the reform (Khan, 1990: 2001). In other words, it has no mechanism to filter out the effect of other factors other than the reform, which could have a bearing on the outcome.

The *with-without* approach is designed to overcome the weakness of the *before-after* approach and hence serves as a supplement to it (Goldestin and Montiel, 1986:305; Khan, 1990:201). The approach attempts to distinguish between the program and

non-program countries and compares the outcomes. It assumes that countries with and without a (liberalization) program face an identical environment and, hence, any difference observed in the program countries is attributed to the effect of the program. The *with-without* approach was first used by Donovan (1981, 1982). Later works using this approach include Loxley (1984), Gylfason (1987) and Pastor (1987) (all cited in Khan 1990). The major weakness of this approach is that countries with and without the program, however accurately they are selected, could not be identical. Moreover, as noted by Khan (1990), program countries are not randomly selected. Instead, they are selected for having relatively poor economic performance prior to the program period. Goldestin and Montiel (1986), however, suggest that identifying and controlling the specific differences in the initial position of the program and non-program countries can overcome this limitation. With this modification they came up with *Modified Control Group* approach.

The other methodology in the literature is the *actual-versus-target* approach. This approach compares the actual outcome of major macro variables with the targets set for such variables (see Pio 1994; Khan 1990). Although it is not frequently used, one of the major weaknesses of this approach is the bias that could arise during evaluation as a result of targets that might have been set either below or above what could realistically be attained.

The *Modeling/Simulation* approach compares the outcome of different policies, such as liberalization, using an economy-wide (usually macro) model. It is basically a counterfactual analysis. Comparatively speaking this approach is theoretically neat. According to Khan (1990), it has three advantages. First, one can draw on a wider body of adjustment/liberalization experiences. Second, since the policy simulations can be specific, one does not have to worry that incomplete implementation of the policies will blur the result. Finally, the approach by its very nature focuses on the relationship between policy instruments and policy targets (Khan, 1990: 207). This approach is, however, extremely demanding in terms of having an empirical model and is vulnerable to what is called the 'Luca's Critique'<sup>2</sup> (Khan, 1990).

The final approach cited in the literature is the *econometric approach*. This approach makes use of regression analysis to evaluate policy performance, after making correction for socio-economic and external variables (Pio, 1994:299). This approach is basically similar to that of *Modeling/Simulation*. The difference between the two approaches is that the econometric method is a partial equilibrium based analysis while the modeling approach is closer to a general equilibrium analysis.

All these approaches have strengths and limitations of their own. This is partly the reason for obtaining a wide range of results, which more often are conflicting. Ideally it would have been enlightening to employ all the methods. But, neither data nor availability of models allows us to do that in this paper. Thus, the paper basically

<sup>2</sup> Parameters of the predicting model could change along policy change/simulation.

employs the *before-after* approach. At times it resorts to the *econometric* approach based on research undertaken by the Department of Economics of Addis Ababa University.

### **3. ETHIOPIA'S EXTERNAL TRADE POLICY**

#### **3.1 The Pre-1991/92 (Pre-Reform ) Period**

Before 1974, the foreign trade policy of the country was largely influenced by 'the free trade' doctrine. Measures such as the establishment of the Chamber of Commerce, the establishment of boards (Coffee Board, Grain Marketing Board and Office of National Standards) were taken to facilitate trade. These measures were aimed at controlling the quality of imports and exports and facilitating trade. With regard to imports, capital goods and raw materials were imported duty-free while others were taxed (Ministry of Trade, 1987).

The period 1974 -1991 was on the other hand, characterized by a centralized economic system where the state was given a significant role in all spheres of economic activity, including external trade. This period was characterized by attempts: (a) to control the participation of private capital in trade and strengthen the role of the state both in export and import trade; (b) to closely monitor the price, quantity and distribution of goods; (c) to focus on the external trade sectors deemed essential for economic growth and to engage in the trading of medical equipment and goods that ensure the health and security of the population and (d) to diversify the type and destination of goods (especially those from developed capitalist countries to socialist countries) externally traded.

#### **3.2 The Post-1991/92 (Post-Reform) Period**

The post-1991 foreign trade policy of the government has the following objectives: (a) ensure private sector participation; (b) manage the sector by issuing foreign exchange and import-export regulation; (c) provide adequate incentives to the export sector; (d) replace quantitative restrictions with tariffs; (e) encourage diversification of exports and minimize illicit trade; and (f) carry out restructuring of the state-owned trading enterprises (MTI, 1997).

To realize these objectives, the government has implemented policies the most prominent of which are: (a) liberalization of the exchange rate market using the auction system that provides foreign exchange both to the private and the public sectors; (b) simplification of the licensing procedure; (c) provision of supportive services to private exporters in the area of transport, package training, overseas market research, etc; (d) a simplification of tariff structure and introduction of foreign exchange retention scheme (MTI, 1997).

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In relation to point (d) above, most goods which used to be imported duty free and those with specific duty rates are replaced by *advalorem* rates. Goods subject to duty or not are given a tariff code and classified on the basis of their type and characteristics into 21 sections and 99 chapters. These chapters contain 5291 goods classification of which 169 are duty free, 5119 with *advalorem* rates from 5-50 percent and 3 with specific rates (used clothing, and other textile produces and rags). Currently the weighted-average tariff rate is 24.6 percent, the minimum and maximum tariff rates being 5 and 50 percent, respectively. These rates were used to be as high as 230 percent during the previous regime (MTI, 1996: 17; MTI, 1997: 3).

Apart from customs duty, sales and excise taxes are also paid on imported goods, the sales tax being 15 percent of the value of goods. Similarly excise tax varies from item to item, the highest being 200 percent and the lowest 10 percent of the value of goods taxed (MTI, 1996: 19)<sup>3</sup>

With regard to imports, an attempt is made to facilitate import-licensing procedures. Currently there is no export duty except on coffee. The amount of customs duty on coffee is Birr 15 per 100 kg. There is also a transaction tax of 2 percent of sales and Cess tax of Birr 5 per 100 kg. In addition, surtax is collected on coffee based on the daily surtax rate of the international coffee market prices (MTI, 1996: 25; See also Taye 1997).

The EPRDF government has also established two types of duty incentive schemes: 'Duty Drawback Schemes' to those who are wholly or partially engaged in exporting and 'Duty-free Importation Scheme' to those who are wholly engaged in the business (MTI, 1996: 25). Moreover, exporters can retain 50 percent of their export earnings and remittance in foreign currency in retention accounts. From the 50 percent the account holder should offer 40 percent for sale no later than 21 days (currently extended to four weeks) from the date of receipt of the foreign exchange to commercial banks at negotiated rates, or to the auction market through his/her banks. The remaining 10 percent should be used by the account holder for the purpose of importing goods and services, export promotion and any other payment specifically approved by the National Bank (MTI, 1996).

In general, compared to the pre-1991 period a major policy shift is observed in the post-1991 period. Essentially the policy regime has shifted from a 'controlled regime' toward a 'more liberalized' one. This change is chiefly related to the Structural Adjustment Program the country has been implementing since 1992. The next section will explore the impact of this liberalization scheme in the coffee sub-sector.

<sup>3</sup> These taxes are now ( by 2003) replaced by a new 'value-added' tax of 15 percent.

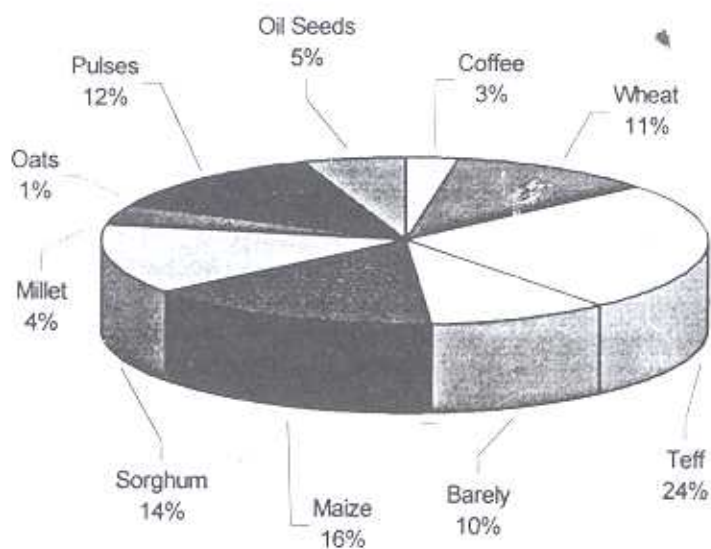
#### 4 THE ROLE OF COFFEE IN THE ETHIOPIAN ECONOMY AND THE IMPACT OF LIBERALIZATION

As noted above coffee is the most important export crop of Ethiopia. Accordingly, its contribution towards the growth of a dynamic economy by allowing the importation of developmental goods and the creating of employment is enormous. This section will briefly examine the pattern of production in the sub-sector, the place of coffee in the total exports of Ethiopia and the contribution of coffee to the government's revenue.

##### 4.1 Pattern of Production in the Coffee Sub-Sector

Figure 1 shows total area of the country under cultivation in 1997/98. It is based on the agricultural sample survey conducted by the Central Statistical Authority. As can be seen from the Figure coffee occupies only 3 percent of the total area under cultivation (195,700 hectares). The combined share of coffee, pulses and oil seeds is about 20 percent, leaving the bulk of the area under cultivation for food crops.

Figure 1: Area Under Cultivation (for the year 1997/98)



Source: Central Statistical Abstract (CSA): Agricultural Sample Survey 1990EC (1997/98)

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As can be seen from Table 1, the area under coffee cultivation has been increasing since 1991/92. The increase lasted from 1991/92 until 1995/96 and declined a little thereafter. Notwithstanding this decline, area under cultivation in 1997/98 was much higher than the 1991/92 levels.

In general, it may be concluded that area under coffee cultivation has increased since the onset of the liberalization program in Ethiopia. Between 1992 and 2002, the Birr (the local currency) depreciated from Birr 5 per USD in 1992 to Birr 8.59 per USD (in 2002). This implies that the return from coffee in terms of local currency has increased and this could be considered as one of the reasons for the increase in area under coffee cultivation. If a fixed supply of factors of production (in particular labour and land) and full employment of these resources is assumed, and no fundamental change in productivity exists, it is reasonable to predict that area under food production has declined<sup>4</sup>. This could be against the notion of 'food sovereignty' – a concept advocated by critics of trade-based food security (see below).

**Table 1: Area Under Coffee Cultivation: (000 hectares)**  
Year

Ethiopian Calendar	European Calendar	Area
1986	1993/1994	130.84
1987	1994/1995	183.56
1988	1995/1996	202.13
1989	1996/1997	191.63
1990	1997/1998	195.70

Source: Central Statistical Authority, Agricultural Sample Survey, Various Issues

Table 2 shows the productivity and production of major coffee producing regions in Ethiopia. The peasant sector (smallholder producers) is the dominant feature of Ethiopia's coffee production. This sector accounts for more than 95 percent of the coffee produced in the country, leaving less than 5 percent to the modern (commercial farm and state) sector. As can be seen from Table 2 the modified forest coffee (normally grown in a single stand with very little activity such as slashing once a year to facilitate picking) and garden coffee (coffee grown around home, intercrossed with food crops) constitute more than 90 percent of the total coffee production (see also Taye 1997, Itana 1999). Table 2 also shows that the bulk of

<sup>4</sup> The fixed factors of production (both land and labour) assumption can be contestable. This is in particular true because the available arable land which is uncultivated is large. The micro level evidence cited below, however, seems to suggest a possibility of substitution of cash crop production for food crops (I thank one of the referees of the journal for pointing out this point).

coffee in the country is produced in five regions: Keffa, Illubabor, Wellega, Sidamo and Hararghe.

Taye (1997), based on the 1984 'National Coffee Survey', notes that 85.3 percent of the coffee in the five major regions is grown by small holders, 88 percent of the land under coffee is also found in these regions and this accounts for more than 90 percent of natural (wild) coffee output. Another interesting aspect of coffee production in Ethiopia is that a significant amount of total output is lost due to Coffee Bury Disease (CBD).

**Table 2: Production pattern: The Peasant Sector**

Type	Productivity, Yield/ha	Share of Total	Region
Modified Forest*	350kgs/ha	55%	Keffa, Illubabor, Wellega
Garden Coffee**	450kgs/ha	35%	Sidamo, Shoa and South and North Omo
Hararghe Coffee***	400kgs/ha	5-10%	Harraghe

\* Grows under shades at densities around 4000 trees per hectare

\*\* Planted at low density (100-1800 trees/ha and sometimes inter-cropped with food crops)

\*\*\* Grows in marginal climate at 900-1200 trees/ha, sometimes inter-cropped with food crops/Chat

Source: ULG consults Limited (1987) (Itana, 1999, Page 75).

## **4.2. Liberalization Scheme Relevant for the Coffee Sub-Sector and Its Impact**

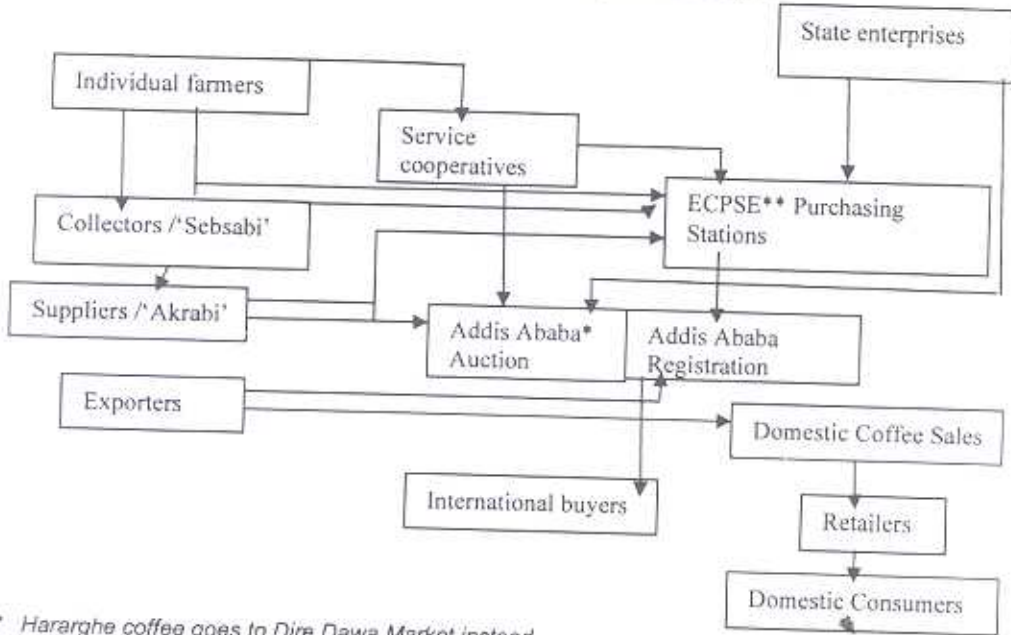
### **4.2.1 Domestic Trade Liberalization**

Domestic trade liberalization is one of the components of the liberalization scheme relevant to the coffee sub-sector. This can be seen from two important angles: measures taken in marketing and pricing. These two issues are briefly discussed in this sub-section.

The liberalization scheme adopted in Ethiopia has a significant impact on coffee marketing. Before the 1992 reform, the Ethiopian Coffee Marketing Corporation (ECMC) had the monopoly of purchasing and exporting coffee. It controlled more than 80 percent of the total supply to the official market. While the ECMC was engaged in the purchasing and sale of coffee both to the domestic and export markets production was managed by two public institutions, the Coffee Plantation Development Corporation (CPDC) and the Coffee Development and Project Implementation Department (CDPI). CPDC was responsible for running nationalized commercial farms; CDPI for managing the small peasant sector. This centralized controlling of the marketing activity came to an end after the 1992 reform. The Ministry of Coffee and Tea Development was reduced to an "authority" and was

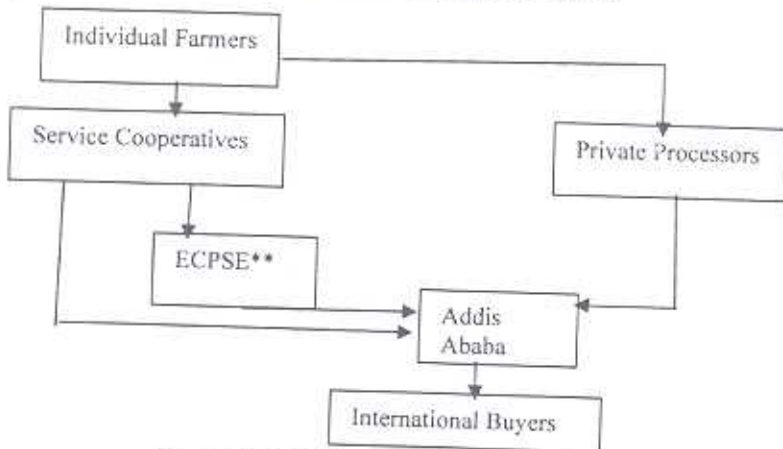
mandated to promote the growth of coffee and tea production, trade and processing. Coffee development activities are largely left for regional bureaux. Moreover, two institutions, the Ethiopian Coffee Purchase and Sale Enterprise (ECPS) – limited to domestic operation – and the Ethiopian Coffee Export Enterprise (ECEE) – which operates competitively with the private sector- were established (See Taye 1997: 36-39). Figures 2a and 2b below depict the new marketing structure. The two Figures show agents of the marketing network . The collectors and suppliers are the intermediaries that supply to the central market, since the individual farmers do not have direct access to the central market. Agents having export licenses sell, primarily through the central market (Addis Ababa registration). They can also sell directly to the domestic market if they wish, or if they do not find international markets. The figures also show that the role of these agents is reduced due to the fact that cooperatives and state enterprises are given less importance in the post-Derg regime.

Figure 2a: Market Structure for Sun-dried Coffee



\* Hararghe coffee goes to Dire Dawa Market instead  
 \*\* Ethiopian Coffee Purchase and Sell Enterprise

Figure 2b: Market Structure for Washed Coffee



Source: Adapted from Taye (1997)

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The pre-reform period was also characterized by price control. The government determined the price after setting the level of taxes and marketing margins. The basis for computing the local price (which includes taxes surtax) had initially been the price for the Brazilian Santos 4, then the 'composite price of ICO' was adopted. Both of them depart from the world price for coffee. Since 1990 the base for the calculation of coffee surtax and the auction price has been the fob daily price of Jimma 5. To arrive at the auction price deduction for clearing costs, transport, bank and insurance charges, taxes and exporters' margin are made out of the fob price.

Since 1992 a floor farm-gate (producer's) price has also been introduced. The price varies across regions as shown below and participants in this market may compete above this price level. Since actual farm-gate prices were not available the analysis below is based on the official farm-gate prices.

Table 3: Farm-gate Price

Regions	Producer's Price (Birr/Kg)
Jimma	4.20
Illubabor	4.20
Wailaga	7.00
Sidamo	6.50
Hrarghe	9.10

Source: Coffee and Tea and Development Activity (cited in Abdurahman 1995, Teye 1997)

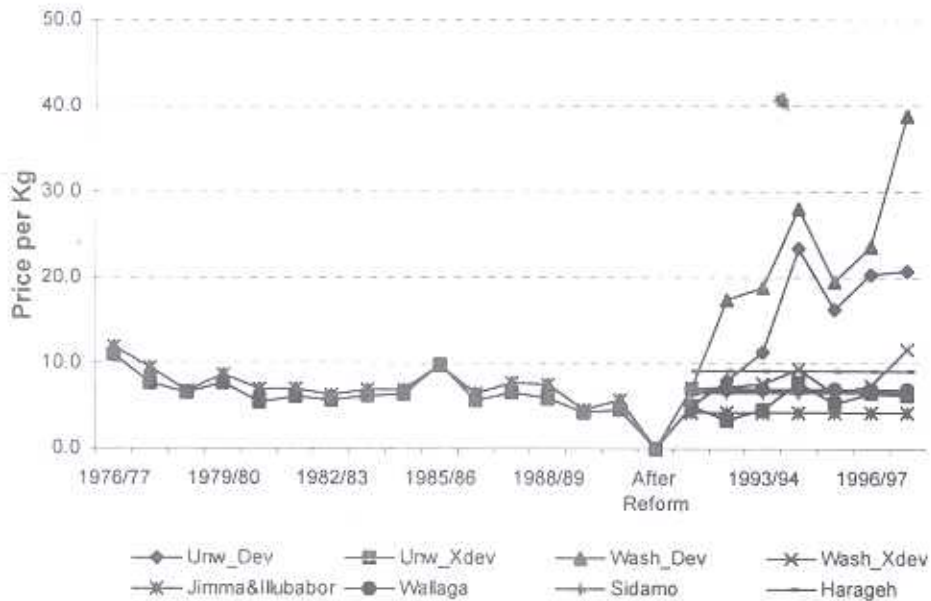
Figure 3 shows the farm-gate and fob prices for unwashed and washed coffee. The data for each type of coffee (washed and unwashed) is computed both using actual price in Birr (which includes the effect of exchange rate liberalization) – denoted Wash\_Dev and Unw\_Dev, respectively, and a hypothetical price where the exchange rate is assumed to remain as it was before devaluation (Birr 2.07 per USD)- Wash\_Xdev and Unw\_Xdev.

The Figure shows that the farm-gate prices of both washed and unwashed coffee are above the floor set for farm-gate prices of only Jimma and Illubabor. If the effect of the devaluation is not taken into account, the fob prices would have been below the floor farm-gate price set for Hararghe. From this analysis it can readily be inferred that other liberalization schemes (except devaluation) had no significant effect on the unit fob (in Birr) value of both washed and unwashed coffee.

However, when the effect of the devaluation is taken into account the fob price (in local currency) increased dramatically. This upward trend has a similar pattern both for unwashed and washed coffee, the highest being for the latter, which might be related to the relatively high quality nature of the washed coffee. The highest floor

price (the Hararghe farm-gate price<sup>5</sup>) constituted 25 and 50 percent of washed and unwashed coffee fob prices, respectively, in 1997/98. It is worth presenting this analysis in the context of early farm-gate price studies. The earliest study undertaken by Teshome (1979) puts the producers' share of FOB price between 61 and 69 percent in mid 1960s to 1970s. The next study, which attempted to examine the effect of liberalization on the share of coffee producers' price, by Hamza and Azanaw (1995) noted that the average share increased from 42 percent the Derg period (1974-1991) to 75 percent by 1992-94. Recently, Love (2000) examined carefully various studies, and estimated the share of coffee producers to be in the range of 61-64 percent of the national auction prices and between 50-56 percent of the FOB prices. Given these findings, it is reasonable to assume that a good percentage of the effect of devaluation (or at least the *change in price, ceteris paribus,*) passes to the producers.

Figure 3: Farmgate and Fob Price (based on Table 10)



<sup>5</sup> There is no time series data on farm-gate price. Abdurahman's (1994) study for Hararghe shows that the actual farm-gate price ranges from Birr 11 to 20 per kg in 1994.

#### 4.2.2 Foreign Trade Liberalization

The liberalization of foreign trade in coffee is part of the general liberalization program commenced in 1992. Two important issues can be singled out in this connection. The first relates to an enormous simplification of entry into the coffee exporting business. This is contained in Proclamation No 70/1993 that amended the Coffee Trade Proclamation No. 263/1984. This amendment gave both the licensing and license renewal fees for engaging in the coffee exporting business sector. A second and related reform measure is the simplification of coffee export taxes. The post-reform period witnessed an enormous reduction and simplification of taxes levied on coffee exports (the details are given in section 4.2.4).

The overall effect of this liberalization program in the foreign trade sector is to raise the participation of private economic agents in exporting coffee. For instance, the share of private coffee suppliers increased from 20 percent in 1989/90 to 82 percent in 1992/93 while the share of private exporters increased from 37 percent in 1989/90 to 85 percent in 1992 (Abdurahman 1995). In 1997, 62 private exporters were engaged in the coffee exporting trade. This figure was merely 13 in 1991. According to Taye's figure, obtained from Coffee and Tea Authority, the share of private exporter in the total exports jumped from 13.52 percent in 1989/90 to 52.51 percent in 1995/96 (Taye, 1997: 44). Currently it is estimated that the share of private exporters is in the vicinity of 70 percent. Similarly, the number of coffee processing stations has increased following trade liberalization. According to the figures of the Coffee and Tea Authority, by August 1998 there were a total of 388 wet coffee processing stations (164 owned by cooperatives, 195 by private and 29 by public). On the other hand the number of 'dry coffee processing' stations were 206 (of which 135 are owned by the private operators).

#### 4.2.3 Exchange Rate Liberalization: Devaluation

One component of the liberalization program that has a direct bearing on the coffee sub-sector is the exchange rate policy pursued after 1992. The exchange rate reform commenced by devaluing the currency that was fixed at Birr 2.07 per 1 USD for nearly two decades. This reform, made in October 1992, devalued the Birr by 140 percent, making one USD exchangeable for 5 Birr. Such massive devaluation was partly justified by the premium on the parallel market that was close to 238 percent.

In 1993, the National Bank of Ethiopia (NBE) introduced the auction-based exchange rate system, which used to be conducted on fortnightly basis and took the form of the 'Dutch Auction' system (discriminatory price), where the marginal rate, which cleared the market, was taken as the ruling rate for the following two weeks. The supply of funds for this market came from export earnings and loans & grants. The auction-based exchange rate system was initially working side by side with the official exchange rate. This system was overseen by a committee composed of the

representatives of the NBE, Ministry of Finance, Ministry of Economic Development and Cooperation (MEDaC) and two members of the private sector.

In the course of the implementation of the system more liberalization efforts (such as reducing the bid cover requirement, abolishing of negative import list as well as the ceiling on demand for foreign exchange etc) were made. After the 86<sup>th</sup> auction (in July 1996), the NBE introduced a weekly auction replacing the previous one that used to be held on fortnightly basis. By August 1995, the official or fixed exchange rate (that had been used for importation of fertilizer, petroleum and pharmaceutical products as well as paying Ethiopia's contribution to international organizations and external debt-servicing ) became unified with the auction rate (Table 4 shows the evolution of the official, the parallel and the auction rates). Moreover, the NBE replaced the retail auction system by a wholesale auction system where banks are taken as wholesale bidders.

**Table 4: Exchange Rates in the Post-Reform Period (Birr per US\$)**

Annual Average, Birr/US\$b	1993/94	1994/95	1995/96	1996/97	1997/98 (Qrt I)	2002/03
1. Official Rate	5.09	5.86	6.32	6.47	6.80	~8.59
2. Marginal Rate	5.77	6.25	6.32	6.47	6.80 (Sept.)	~8.59
3. Divergence = [1-2]	Birr 0.68	Birr, 0.39	unified			
4. Parallel Market	7.05	7.30	7.64	7.16	7.23	~ 8.70

Source: NBE, Quarterly Bulletin, 1997/98. ~ Recent daily rate (approximate value)

The immediate implication of the devaluation and the subsequent auction-based exchange rate determination is raising the value of coffee export earnings in terms of domestic currency. This, it is presumed also raises the farm-gate prices of coffee. The latter may in turn encourage resources (such as land and labour) shift towards the coffee sector. This shift could well be at the expense of other sectors – most importantly the food sector. The existing evidence on this issue is discussed in section five.

The export earnings from coffee, subject to the National Bank's interventions, have also a direct bearing on the determination of the auction-based exchange rate. This is because coffee export earnings form part of the supply of foreign exchange in the auction market. Thus, not only the auction-based exchange rate affects the supply of exports but it is also affected by the export earnings. This in turn implies that an increase in supply of coffee might have a dynamic detrimental effect (through lower auction-based exchange rate) on the income of coffee suppliers.

#### 4.2.4. Tax Reforms and Coffee's Contribution to Government Revenue

The tax reform provisions on coffee are provided in proclamation No 70/1993 - 'A Proclamation to Amend the Coffee Trade Proclamation No. 263/1984' and

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Proclamation No 99/1998 which is a 'Proclamation to Provide the Payment of Tax on Coffee Exported from Ethiopia'. The former basically provides for the coffee trade and license issuance and renewal fees as shown below.

**Table 5. Fees for Issuance and Renewal of License**

No.	Description of License	Fees for Issuance and Renewal (Birr)
1	Coffee Export License	200
2	Coffee Supply License	150
3	Coffee Clearing License	150
4	Coffee collecting License	150
5	Coffee Trade Auxiliary License	150
6	Coffee Washing License	150

Source: Proclamation No 70/1993 in *Negarit Gazeta*, 4<sup>th</sup> Year No. 18, 1998.

Proclamation No. 99/1998 has the objective of: (a) consolidating the taxes and duties, levied by different Proclamations and Regulations into a single tax facility, (b) converting specific rates into *advalorem* rates so as to ensure equitability of tax and (c) to lay down procedures to protect revenue against fluctuations due to changes in prices and adjust the tax rate on the basis of market trends (See Proclamation No. 99/1998 in *Negarit Gazeta*, 4<sup>th</sup> Year No. 18, 1998).

This proclamation declares that the FOB price (selling price quoted at the port, agreed between the exporter and the customer, and approved by the National Bank of Ethiopia, which excludes freight and insurance costs) is the basis for calculating the tax. The tax rate is set at 6.5 per cent of the FOB price. The issuing of this new law repeals previous Proclamations and Regulations. These include: Transaction Tax Proclamation No. 205/1963, The 'Third Schedule' (export duties) attached to the Customs Tariffs Regulation No. 42/1976, Coffee Surtax Regulations No. 280/1964 and all subsequent amendments as well as Cess on Coffee Exported from Ethiopia, Regulation No. 47/1976 (see Proclamation No 99/98 in *Negarit Gazeta*, 4<sup>th</sup> Year No. 18, 1998).

Apart from generating foreign exchange to the country, coffee is an important source of tax revenue to the government. For this reason, it is important to examine the impact of the above reform measures on the contribution of coffee to the government revenue. Table 6 shows the type of tax levied on coffee export and their combined contribution to the government revenue. As can be read from Table 6 there are three types of taxes (Coffee Surtax, Coffee Duties and Coffee Cess tax – in the order of their importance) levied on the export of coffee. There is a marked difference in the contribution of coffee to tax revenue in the pre and post-reform periods. In the pre-reform period the contribution of coffee export (leaving the abnormal period of 1990) to total government revenue was around 8 %. This figure has dramatically dropped to an average of about 1 %. This figure includes the abnormal increase in the

contribution of coffee taxes' due to a huge rise in surtax in 1994/95. If this abnormal year is excluded, the average figure would drop to 0.89%.

The tax revenue from coffee export for the post-reform period, notwithstanding its small size compared to the pre-reform period, shows a positive growth trend. This positive trend is largely attributed to the growth in the tax base. Thus, it can be concluded that the immediate effect of liberalization was reducing government revenue dramatically. Although, such a decline might come from a decline in price and quantity supplied, this was not the case in the Ethiopian context. Both quantity and unit price increased during the period under analysis (see Table 10). This definitely had a detrimental effect on the government's ability to provide necessary services. The liberalization advocates argue that this initial drop in revenue will eventually be captured by a surge in the volume of trade in the long run. Although the evidence in Table 6 seems to point to that direction, the figure for the share of taxes from coffee export in total government revenue has been in the vicinity of 1% for a long time.

**Table 6. Coffee Taxes in Total Government Revenue (Millions of Birr)**

Year	Coffee* Duties	Coffee Surtax	Coffee* Cess & Others	Total tax on Coffee	Total Gov. Revenue	% of Coffee tax in total Gov. Rev. (exc. Grants)
<b>Before Reform</b>						
1982/83	15.2	173.1	0.8	189.1	2183.8	8.66
1983/84	13.2	224	5.1	242.3	2242.8	10.8
1984/85	10.1	152.2	1.2	163.5	2323.3	7.04
1985/86	9.1	236.7	5.8	251.6	2806	8.97
1986/87	12.2	118.1	4.1	134.4	2925.9	4.60
1987/88	10.4	117.4	3.9	131.7	3467.1	3.80
1988/89	11.1	134.8	5.5	151.4	3898.9	3.88
1989/90	13.3	19.4	12.6	45.3	3142.6	1.44
1990/91	7.9	5.6	6.3	19.8	2706.3	0.73
<b>After Reform</b>						
1991/92	2.2	1.4	1.9	5.5	2208.0	0.25
1992/93	6.3	2.7	3.1	12.1	3191.3	0.38
1993/94	13.0	17.5	7.3	37.8	3938.8	0.96
1994/95	11.5	171.4	7.2	190.1	5912.9	3.22
1995/96	14.2	83.2	9.7	107.1	6966.1	1.54
1996/97	17.9	72.9	9.0	99.8	7877.4	1.27

Source: National Bank of Ethiopia, Quarterly Bulletin, Vol.13 No.1, 1997/98 and Various Issues and MEDaC

Note: For the period 1982-1988/89 'Coffee Duties' (shaded) appeared as 'Coffee tax' and 'Coffee Cess & others' as 'others'.

#### 4.3 Ethiopia's Export Performance and the Coffee Sub-Sector: Before and After the Reform.

Ethiopia's export-sector is characterized by huge fluctuations of output and price, as well as extreme dependence on a few primary commodities. As can be read from

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Table 7, in the last 10 years, the export sector is characterized by over-dependence on a few commodities such as coffee which constitutes nearly an average of 65 percent of export earning, followed by hides and skins. The combined share of six major export items constitute, on average, more than 80 percent of total exports.

**Table 7: The Share of Ethiopia's Major Exports in the Total Value of Exports for Selected Years (in Percent)**

Year	Live Animals	Haricot Bean	Sugar	Coffee	Hides & Skins	Petroleum & Petrol	Combined Share
<b>Before Reform</b>							
1988	3.4	2.3	1.7	65.0	14.4	3.0	89.9
1989	1.5	1.4	1.8	65.1	14.6	4.0	88.4
1990	1.6	7.0	6.0	44.4	20.5	6.9	86.4
1991	0.4	0.9	0.9	61.6	13.3	0.7	77.8
<b>After Reform</b>							
1992		0.5	0.8	54.4	16.4	6.7	78.8
1993	0.5	1.0	2.5	64.1	16.1	4.0	88.1
1994	0.5	2.5	0.1	65.3	14.3	5.2	87.8
1995	0.2	3.3	-	60.5	12.7	2.7	79.4
1996	0.1	3.6	-	66.5	12.5	3.4	86.0
1997	0.4	2.7	-	65.3	10.1	0.7	79.2

Source: Computed from Data Obtained from Customs Authority

Table 8 shows the annual growth rate of major export items of Ethiopia. The annual growth rates of these major exports are characterized by extreme fluctuations. This is aggravated by the concentration of exports in a few commodities such as coffee which have cyclical and declining world price trends. This is the major factor behind export earning instability in Ethiopia. This in turn has implications for capital formation instability. Weather conditions, production and marketing problems are responsible for such poor performance.

Table 8: Annual Growth Rates of Major and Total Exports (Selected Years, Volume)

Year	Total Exports	Coffee	Annual Growth Rates		Live Animals
			Hides & Skins	Petroleum & Petrol	
<b>Before Reform</b>					
1989	-4.7	21.3	18.8	4.2	-56.4
1990	-7.1	-37.0	-22.5	-3.2	-31.7
1991	-70.9	-20.5	-54.7	-96.2	-89.6
<b>After Reform</b>					
1992	92.5	-14.1	23.2	1715.1	-
1993	19.4	58.9	79.0	2.8	-
1994	46.0	15.0	6.1	41.6	95.2
1995	-27.6	-4.9	3.1	-40.9	-74.1
1996	26.1	44.1	-11.3	7.1	-73.2
1997	7.3	7.7	24.6	-65.1	1389.4
<i>Average Rate of Growth(1989-1997)</i>	9.0	7.8	7.45	173.9	165.7

Source: Computed from Data Obtained from Customs Authority

When focusing on coffee, actual time-series coffee production data is hard to obtain. Hence, researchers use coffee arrival at the central/terminal markets of Addis Ababa and Dire Dawa as indicators of total supply<sup>6</sup>. Table 9 shows these data in the period before and after the 1992 reform. The data clearly show that there is unprecedented increase in the supply of coffee following the liberalization program. The total supply has reached its historic pick of 165 thousand metric tones in 1996/97. The table also shows that the share of exports in total arrival has shown a declining trend. This is attributed both to a relatively high quality control and a deterioration in quality.

However, the share of exports out of the total arrival, although is showing an increasing trend in the post-reform period, is generally lower when compared to the pre-reform period. In the early days of the reform period this is attributed to low level of exports in absolute terms while the trend in the recent past is attributed to the relative increase, specially compared to the late 1970s to mid 1980s, in total supply. One also notes that domestic consumption is significant in Ethiopia.

<sup>6</sup> However, this is quite a relevant variable for export supply, upon which much of the analysis in this study is made.

**Table 9: Coffee Arrival and Approval for Exports (in metric tons)**

Year	Arrival for Inspection	Approval for Domestic Sales	Accepted for Export	
			(In Metric Tons)	(as share of arrival)
<b>Before Reform</b>				
1978\79	102692	2176	83133	81.0%
1979\80	96429	2946	82142	85.2%
1980\81	89006	3843	75447	84.8%
1981\82	91766	4077	80157	87.4%
1982\83	112140	3331	87573	78.1%
1983\84	102432	4849	94957	92.7%
1984\85	70123	3731	66392	94.7%
1985\86	91997	6451	54490	59.2%
1986\87	156295	19955	154066	98.6%
1987\88	64287	2859	53244	82.8%
1988\89	109299	3268	77707	71.1%
1989\90	90650	4498	83251	91.8%
1990\91	77316	2500	53456	69.1%
<b>After Reform</b>				
1991\92	60155	4024	36076	56.0%
1992\93	87669	3290	69263	79.0%
1993\94	113680	n.a.	73004	64.2%
1994\95	102302	n.a.	78420	76.7%
1995\96	141361	n.a.	101823	72.0%
1996\97	165536	n.a.	117979	71.3%
1997\98	na	na	na	
1998\99	na	na	na	

Source: NBE, Quarterly Bulletin, 1998.

Table 10 shows a rather extended version of the export data given in Table 9. The late 1980s witnessed a decline both in volume and unit price of unwashed coffee. This obviously had a depressing effect on value. A similar trend is observed for washed coffee, which is relatively a high quality product.

The period after liberalization is opposite to the situation described above. Both the volume and unit price have shown a sustained upward trend in the post-reform period. This, in particular, is true of the huge growth in the volume of unwashed coffee. A similar trend is also observed for the washed coffee. Thus, following the *before-after* approach it is sensible to conclude that the liberalization carried out have a positive effect on coffee export growth.

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Table 5b: Volume and Value of Coffee Export by Coffee Year, Washed and Unwashed

Year	Washed				Unwashed				Total (Unwashed + Washed)			
	Qty (tons)	Value \$00 Bar	Unit Value(\$/ton)	Hypothetical rate <sup>2</sup>	Qty (tons)	Value \$00 Bar	Unit Value(\$/ton)	Hypothetical rate <sup>2</sup>	Qty (tons)	Unit Value(\$/ton)	Hypothetical rate <sup>2</sup>	
1976/77	30031	425882	14182	11012	3528	46668	13228	11644	42959	11201	11201	
1977/78	64430	507716	7879	10112	51745	6472	12447	5402	73440	7411	7411	
1978/79	74227	497428	6704	10410	31655	8227	26017	8227	82296	8227	8227	
1979/80	71590	548106	7656	9844	60213	8671	14367	8671	77649	7749	7749	
1980/81	78076	428217	5486	8361	56062	6384	11206	6384	87006	5606	5606	
1981/82	60009	412695	6876	8950	106225	41179	3393	6369	78614	6009	6009	
1982/83	60667	451225	7438	9564	62618	8223	13194	8223	80766	6067	6067	
1983/84	84448	541007	6407	8123	8446	54231	6420	6663	81344	8134	8134	
1984/85	64000	368338	5754	8287	10158	60280	5936	6660	66663	6400	6400	
1985/86	62759	554270	8832	8711	12431	120228	9712	8712	73190	7312	7312	
1986/87	58743	329658	5614	8616	14669	92668	6320	8347	73432	5770	5770	
1987/88	62200	448862	7216	8404	13009	109866	8404	7072	83099	6200	6200	
1988/89	61648	345270	5601	8323	22374	185724	8323	7814	84022	6348	6348	
1989/90	66583	278029	4176	8181	18347	73225	4046	4448	82030	6348	6348	
1990/91	38729	180331	4656	8521	11168	61132	5473	5603	56967	4777	4777	
1991/92	32796	182420	5562	8264	7334	51678	7046	7646	40100	5336	5336	
<b>Total Revenue</b>												
1982/83	58638	458111	7831	1257	9882	173048	17336	1177	69610	8225	8225	
1983/84	70800	736697	10404	1452	9120	171944	18815	7502	73920	12120	12120	
1984/85	68843	1688004	24528	3542	10461	280035	26762	8231	78244	23862	23862	
1985/86	92512	1911872	20666	2687	13127	265762	19964	6372	138630	16178	16178	
1986/87	93009	1900751	20438	4029	17387	409801	23560	7276	111206	20958	20958	
1987/88	100333	2271468	22633	6173	15030	514365	34001	11657	125384	22016	22016	

<sup>1</sup> Source: Coffee and Tea Authority  
<sup>2</sup> A hypothetical rate for Bar (1) coffee was no exchange rate reform and hence the exchange rate remains at Bar 2.07 per USD  
 From 1/9/07, 1/8/2/03, USD=4.02 Bar  
 For 1/8/2/03, USD=4.50 Bar  
 For 1/9/2/04, USD=5.13 Bar  
 For 1/9/4/95, USD=6.27 Bar  
 Exchange rate values are implied exchange rate export in Bar per unit

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Table 10. Volume and Value of Coffee Export by Coffee Year, Washed and Unwashed

Year	Unwashed				Washed				Total (Unwashed + Washed)		
	Qty (tons)	Value \$/US Bar	Unit Value (\$/ton)	Physical tons <sup>a</sup>	Qty (tons)	Value \$/US Bar	Unit Value (\$/ton)	Physical tons <sup>a</sup>	Qty (tons)	Unit Value (\$/ton)	Physical tons <sup>a</sup>
1976/77	30031	425482	14172	11912	3528	46668	13229	11949	42501	11500	11500
1977/78	68430	527716	7712	51236	5410	51269	9472	10072	72440	7441	6837
1978/79	76227	497428	6543	6143	7879	31655	4018	4272	82596	6363	6837
1979/80	71963	548106	7660	7260	6844	60213	8821	8871	78607	7749	7749
1980/81	73876	428217	5761	5261	8000	40602	5074	5804	47906	5804	5804
1981/82	69009	410366	5966	5650	10025	41179	4110	4393	78614	6099	6796
1982/83	80667	451225	5594	5164	10111	62618	6223	6223	80766	6664	6664
1983/84	86444	547007	6323	6123	8446	54231	6433	6663	87346	6190	6190
1984/85	58000	369338	6281	6281	10158	60950	6000	6660	68963	6366	6366
1985/86	60759	554270	9121	6711	12431	120028	9728	7728	17190	7342	7728
1986/87	58743	329666	5616	5616	14669	92648	6321	6347	17342	6770	6770
1987/88	65200	448062	6869	6469	13009	109966	7673	7673	18099	6990	6990
1988/89	61648	365270	5923	5923	22374	168124	7514	7514	34022	6348	6348
1989/90	66583	279059	4191	4191	18347	73205	4008	4488	82330	6348	6348
1990/91	35789	180331	4531	4531	11188	60133	5403	5603	36987	4777	4777
1991/92	32768	162420	4954	4954	7134	51678	7246	7046	40100	5738	5738
<b>Total Region</b>											
1992/93	58638	459111	7861	7861	9566	115049	12136	11777	64610	6225	6225
1993/94	70800	736697	10392	10392	9120	171594	18815	17502	73920	9220	9220
1994/95	68843	1688004	23358	23358	10401	280833	27962	32311	78244	23862	23862
1995/96	82612	1911472	23139	23139	13127	285762	21804	4372	136639	16378	16378
1996/97	106909	1909751	17909	17909	17387	409862	23580	1218	111296	20959	20959
1997/98	103955	2271498	22073	22073	10639	514905	30011	11557	120384	22019	22019

Source: Coffee and Tea Authority.  
 A: Hypothetical rate of exchange (in Birr) - always was no exchange rate reform and hence the exchange rate remains at Birr 2.07 per USD.  
 Note: For 1981/82, 1982/83, 1983/84, 1984/85, 1985/86, 1986/87, 1987/88, 1988/89, 1989/90, 1990/91, 1991/92, 1992/93, 1993/94, 1994/95, 1995/96, 1996/97, 1997/98, 1998/99, 1999/00, 2000/01, 2001/02, 2002/03, 2003/04, 2004/05, 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18, 2018/19, 2019/20, 2020/21, 2021/22, 2022/23, 2023/24, 2024/25, 2025/26, 2026/27, 2027/28, 2028/29, 2029/30, 2030/31, 2031/32, 2032/33, 2033/34, 2034/35, 2035/36, 2036/37, 2037/38, 2038/39, 2039/40, 2040/41, 2041/42, 2042/43, 2043/44, 2044/45, 2045/46, 2046/47, 2047/48, 2048/49, 2049/50, 2050/51, 2051/52, 2052/53, 2053/54, 2054/55, 2055/56, 2056/57, 2057/58, 2058/59, 2059/60, 2060/61, 2061/62, 2062/63, 2063/64, 2064/65, 2065/66, 2066/67, 2067/68, 2068/69, 2069/70, 2070/71, 2071/72, 2072/73, 2073/74, 2074/75, 2075/76, 2076/77, 2077/78, 2078/79, 2079/80, 2080/81, 2081/82, 2082/83, 2083/84, 2084/85, 2085/86, 2086/87, 2087/88, 2088/89, 2089/90, 2090/91, 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Table 11 shows the share of Ethiopia's export in the world coffee market. It shows that Ethiopia's share in the world market is in the vicinity of 2 %. Observed in the range of the entire period, this figure has shown a declining trend. It showed a small decline in late 1980s and early 1990s, and reached its lowest in 1991/92 (the period of change in government). Following the 1992 liberalization Ethiopia's share in the world market has shown some signs of recovery, although the historic maximum figure of 2.5 % (which was achieved in 1980/81) is not attained yet. This low share of Ethiopia's export in the world coffee market is partly attributed to the growth in the world supply of coffee not only from the traditional major suppliers such as Latin American (Brazil, Colombia etc) and African (Uganda, Cote d'Ivoire etc) countries but also new entrants into the market from Asia.

**Table 11: Ethiopia's Share in the World Coffee Trade under International Coffee Agreement (In Metric tons)**

	Exports of All Members to All Destinations [2]	Exports of All Members to Quota Markets [3]	Exports of Ethiopia to All Destinations [4]	Exports of Ethiopia to Quota Markets [5]	[4] as % of [2]	[5] as % of [3]
<b>Before Reform</b>						
1978/79	3887100	3518100	82906	63415	2.13	1.80
1979/80	3674640	3302280	78507	59728	2.14	1.81
1980/81	3567900	3083220	87906	72029	2.46	2.34
1981/82	3812040	3271440	79614	73676	2.09	2.25
1982/83	3943860	3305880	90768	80453	2.30	2.43
1983/84	4201080	3596100	97894	86991	2.33	2.42
1984/85	4136640	3447540	68963	59438	1.67	1.72
1985/86	4132740	3716220	73190	64844	1.77	1.74
1986/87	4383360	3925260	73412	66447	1.67	1.69
1987/88	3730560	3077040	83099	74576	2.23	2.42
1988/89	4302600	3497520	84022	77891	1.95	2.23
1989/90	4870260	4209900	82930	71197	1.70	1.69
1990/91	4458720	3806640	50967	47518	1.14	1.25
<b>After Reform</b>						
1991/92	4668300	3976608	40120	31149	0.89	0.08
1992/93	4670700	3912480	69610	60629	1.49	1.55
1993/94	4317600	3588660	79920	58447	1.85	1.63
1994/95	3826620		79244	63751	2.07	
1995/96	Na	na	Na	na		
1996/97	na	na	Na	na		

Source: Coffee and Tea Authority, 1996

In terms of the destination of exports the bulk of Ethiopia's exports are destined to industrialized countries (Germany, USA, Italy, France, UK, Japan) and Saudi Arabia in Asia, in particular. This pattern seems to remain unchanged over the past ten to fifteen years. The only exception could be the increasing importance of Asian countries (in particular Japan and Saudi Arabia). The data also show that a few countries such as Germany, Japan and Italy and recently Saudi Arabia are increasingly becoming important destinations to exports from Ethiopia. Figure 4 below shows the export market destination for 1997 (the latest available figure). The figure clearly shows the dominant position of Germany.

Figure 4: Export Market Destination for Ethiopia (1997) [See Table 12]

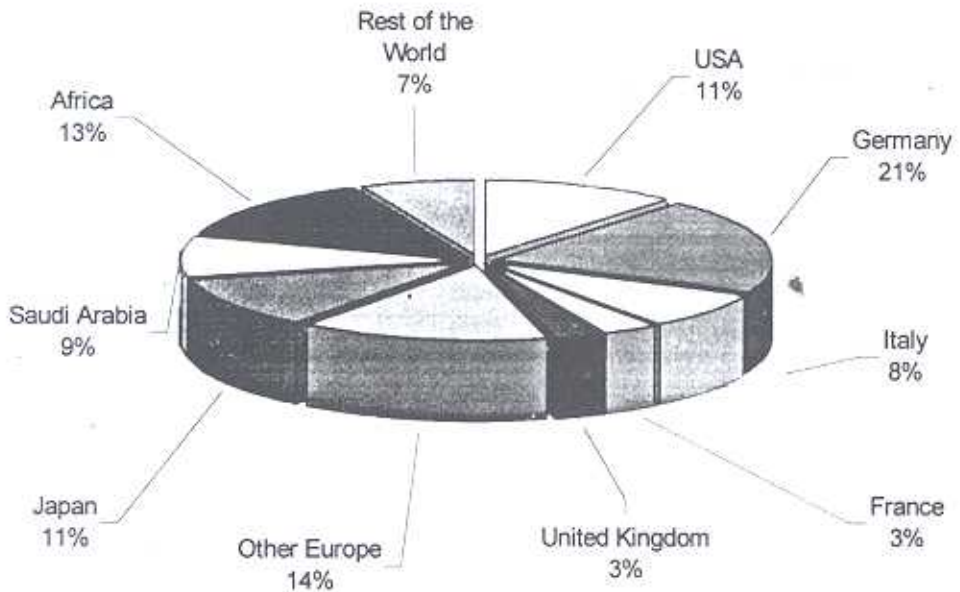


Table 12 shows the need to increasingly diversify the destination of exports so as to avoid over-dependence on few countries.

**Table 12: Share of Total Exports by Destination (1989-1997)**

	Share of Total Exports  (1988/89)	After Reform: Share of Total Exports (1992-97)					
		1992	1993	1994	1995	1996	1997
USA	12.4	3.9	9.1	6.5	6.4	6.1	11.4
Germany	23.2	9.7	19.7	31.7	29.1	29.7	20.6
Italy	6.5	6.5	7.6	8.1	8.6	7.4	7.8
France	4.9	5.0	3.7	4.9	5.0	3.4	3.2
United Kingdom	1.9	16.3	4.6	3.5	3.6	3.1	2.9
Other Europe	-	5.1	6.7	5.8	6.4	7.2	14.3
Japan	15.1*	21.5	19.0	14.5	13.0	12.0	11.2
Saudi Arabia	15.1*	20.1	9.9	5.3	9.0	10.6	8.6
Africa **		7.2	13.4	9.1	11.5	12.4	13.2
Rest of the World	-	4.8	6.3	10.5	7.3	8.0	6.8
<b>Total</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

\* The combined figure for Japan and Saudi Arabia is 15.1%.

\*\* Predominantly Djibouti (and recently Sudan and Egypt).

Source: Computed from National Bank of Ethiopia. Quarterly Bulletin, 1997/98.

## 5. SUPPLY RESPONSE AND THE IMPLICATION FOR FOOD SECURITY

### 5.1 Supply Response: The Macro and Econometric Evidence, A Brief Outline

The analysis in section four shows the impact of Ethiopia's liberalization program in the coffee sub-sector using the before and after approach. In section four we have used various macro data sets to see if there is any change before and after the reform period. The broad conclusion drawn from that section is that the liberalization in Ethiopia is associated with positive performance (except in contribution to government revenue) in the coffee sub-sector as measured by export supply, quality of export (washed and unwashed), area under cultivation etc. In this section we will explore the available micro/econometric evidence about the supply response and attempt to relate it to the issue of food security. The econometric evidence is compiled based on research carried out at the Department of Economics of Addis Ababa University.

## The Econometric /Micro/ Evidence

In the absence of a survey focused on the coffee sector, we have resorted to a review of micro-based econometric research carried out in some of the coffee producing areas<sup>7</sup>.

Taye (1997) made an econometric analysis of the coffee supply response to the liberalization or reform undertaken in Ethiopia. His analysis is based on a sample of farm households drawn from two districts (Gamma and Manna) of the Jimma region. According to his finding there is a micro level evidence that following liberalization there is an increase in movement of resources to the coffee sub-sector. This is shown by the fact that area under coffee cultivation in the two districts, number of coffee seedlings, hired labour and frequency of weeding as well as coffee yield increased (Taye, 1997: 92; See Table 13 below). Given the coefficients of 0.48 for land and 0.22 for labour in the coffee production function estimated by the author using a log-linear Cobb-Douglas production function, this shift in resources has definitely contributed to increase in the supply of coffee. Moreover, given the shortage of the two important factors of production (labour and land) in the study area, this shift must have occurred at the expense of food crops production.

**Table 13: Resource Shift Effect in Sample Households of Taye's Study**

	Pre-Reform	Post-Reform
Area under Coffee (ha)	0.4867	0.6265
Coffee Seedlings (no.)	201.00	497.61
Hired Labour (MDs)	19.19	30.49
Wedding (frequency)	2.20	3.08
Coffee Yield (kg/ha)	425.35	452.51
Spraying against CBD (kg)	18.10	2.06

Source: Survey Data of Taye (1997).

Taye's finding noted above has implications for food security, especially in the light of his other two findings: (a) land and labour are important resources with positive marginal and average product and (b) that the estimated marginal values of using land (216.96 kg per ha) is nearly equal to the value of food crop (maize) forgone – thus there is allocative efficiency. The implication is that in the context of the existing market structure it is rational for the peasants to substitute coffee for food crops. That was exactly what the peasants were doing. This brings us to the question of whether countries such as Ethiopia which are dependent on volatile world coffee market could afford to forgo 'food sovereignty' by relying on the possibility of ensuring food security

<sup>7</sup> The Department of Economics of AAU has also compiled a longitudinal data of both urban and rural households. If that data can be systematically compiled and analyzed it would have given more insight. Again this is both time and resource consuming. Future studies in this area can bring about value added to issues discussed in this paper.

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through higher export earnings – trade-based food security. The evidence noted thus far in this paper is not encouraging to pursue the latter option.

Another micro-based econometric study is Abdurahman's work (1995) on two districts in Hararghe highlands - another important coffee growing area. In this area average holding of the peasants is divided into 53 % for maize and sorghum (major food crops in the area) and an average of 30 % for coffee and *chat*. Using a survey data of two districts he found strong short-run (two years) supply price elasticity value of 0.60, which is statistically significant. He convincingly argued that this short-run response is attributed to marketing efficiency following liberalization, reallocation of labour to the cash crop sector and a shift of supply from smuggling to the formal channels. The finding about the latter is also in line with the study of Dercon and Lulseged (1994) about coffee smuggling, although Dercon and Lulseged argued that the effect of the parallel market is not as large as sometimes thought (Dercon and Lulseged, 1994: 71). Dercon and Lulseged (1994) noted that following devaluation there was a rising trend in coffee production although the increase was not large. The latter is partly attributed to the relative high price of other competing crops such as *chat*.

Abdurahman (1995) also found that land and labour are the most important constraints to production in the region. The positive supply price elasticity, acute shortage of land and labour and the food problem in the area demonstrate the limitation of using export earnings to ensure food security. The study area is a food shortage area. Traditionally farmers engaged in cash crop production such as coffee and *Chat* used to buy cereals/grain from other localities. The study by Abdurahman (1995) shows that peasants in the study area are food insecure and are dependent on precarious regional food markets/flows. Thus, even if one has the capacity to buy food crops from the earnings obtained by selling coffee, food security for that group of farmers is dependent on the sustained existence of the regional food market/food flow. Abdurahman (1995) also noted that, after liberalization the terms of trade have moved against the agricultural sector in general and food production in particular. This had a disincentive effect on the food production (Abdurahman, 1995: 57-58).

Another study by Yoseph (1994) that is based on a survey conducted in Gomma district in Jimma region also confirms the importance of land and labour as crucial inputs in coffee production. Yoseph's study shows that the supply price elasticity is not really important (in the range of 0.14 using a log-log model and statistically significant only at 13%). Rather an interesting finding of Yoseph is that in the sample area coffee producers spend 91.3% of their earnings from coffee on food crops. Moreover, in the period from 1992/3 to 1993/4 the price of food crops (maize and sorghum) increased by 11% while that of coffee by 61%. This certainly entails a huge incentive to shift to coffee production if only to spend the bulk of this earnings on food crops. Here, although food security may be attained at the household level indirectly (and hence sidestep the principle of 'food sovereignty') it is not dependable owing to volatile world coffee market and poor regional food market.

## 5.2 The Uruguay Round (The Agreement on Agriculture), Supply Response and Food Security

The rather delicate relationship between 'food security' and trade has attracted the attention of governments in developing countries, multilateral institutions and non-governmental organizations. Trade-based food security (imports of food paid by exports) has become an accepted norm in many multilateral circles. Many others (including some NGOs) question such an approach and opt for 'food sovereignty' instead. The latter implies introducing the elements of national-decision or policy making into food security. The issue of 'food sovereignty', as opposed to trade-based food security, has also supporting micro explanation that warrants its capacity to ensure household food security. There is evidence that a strong correlation exists between household food security and the proportion of food consumption, which is home produced. This is because women have control over the use of food crops and men on cash crops. Unless the increase in income from coffee is very high to offset the negative control effect, there could be problems to ensure food security based on earnings from cash crop production (Westlake, 1999: 29).

When a country relies on trade-based food security its actual food security will extremely be dependent on international trade (especially prices). In the Ethiopian context trade-based food security could be justified if only the international market for coffee is promising. A study commissioned by the Ethiopian government to design a 'strategy for development of the coffee sector' noted that there is no prospect of price rise for coffee in the coming 20 to 25 years. Moreover, the world coffee market is being characterized by a huge volatility (price in 2002 being substantially declining from a pick in 1996) (See Westlake, 1999). Trade-based food security is also dependent on the rules that govern international trade such as the Uruguay Round Agreement on Agriculture (UR-AoA). The AoA includes, *inter alia*, issues of increased market access, domestic support for farmers, food security, environmental protection and the like.

Although the AoA gives developing countries longer time to implement commitments, it is expected that most developing countries will be dependent on food imports due to higher productivity, protective policy practice as well as distortion effect of stocks in the developed countries. In 1983 for instance the Common Agricultural Policy of the European Union cost 70-75% of the entire EU budget, 50% of which was spent on handling surplus production. This ensures cheaper food supply which could crowd-out food production in developing countries.

Given the rather uncertain nature of dependence on trade-based 'food security' it is worth examining the trend of domestic production and food import in Ethiopia. Tables 14 and 15 show area under major crops for private peasant holdings, which constitute nearly 97% of total crop output and 98% of coffee production, in both pre and post-reform periods. The trend of area under major crops shows that although it is characterized by a huge annual fluctuation, it has increased in the post-reform period

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(from negative growth rates in the pre-reform period to a positive one in the post-reform period). Table 16 shows a similar pattern in output. Thus, notwithstanding the micro evidence of substitution of land under food-crop production for coffee, the macro data shows an increase both in area under cultivation and total output. This could be attributed, assuming the macro data is reliable, both to an increase in the size of total holding and/or a rise in productivity.

Despite the increase in the domestic production, food imports (See Table 17) constitute the fourth important item in the total imports of the country. The share, although varies annually (the highest figure being registered in drought years), has not fundamentally changed in the post-reform period. Moreover, the country is dependent on food aid. Over the period 1985-1996, the annual volume of cereal food aid varied from 2.3 to 26% of total domestic production. In a typical year the volume of cereals food aid can account for up to 25% of the marketed surplus (MEDaC, 1999: 2000). Both imports and food aid have price depressing, and hence negative incentive, effect on domestic production. The government is however attempting to tackle the food aid impact by efficient targeting of the needy (MEDaC, 1999:2000).

**Table 14: Area Cultivated under Major Crops for Private Peasant Holdings (Both Seasons, in '000 ha)**

Year	Cereals	Pulses	Oilseed	Total
<b>Before Reform</b>				
1984/85	4553.81	738.98	264.37	5557.16
1985/86	4666.80	668.24	275.36	5610.40
1986/87	4642.80	599.24	208.45	5450.49
1987/88	4915.40	729.00	185.10	5829.50
1988/89	383.14	37.88	17.20	438.04
1989/90	4851.10	627.96	220.94	5700.00
1990/91	4199.00	701.90	244.00	5144.90
<b>After Reform</b>				
1991/92	4087.00	683.15	237.47	5007.62
1992/93	7740.50	1032.6	373.33	9146.43
1993/94	6107.70	867.47	322.12	7297.29
1994/95	6448.50	919.57	342.03	7710.10
1995/96	7670.55	1005.67	394.36	9070.58
1996/97	7436.97	1012.26	484.51	8933.74
1997/98	6619.70	938.88	416.00	7974.58

Source: Ministry of Economic Development and Cooperation (MEDaC), 1999.

In sum, the macro evidence given in this section shows an increase in the production of food crops as well as imports and food aid. The latter two, through their price depressing effect, could bring detrimental effect on domestic production. This is especially important in the light of the micro evidence of supply response discussed in the previous section. What would be the net effects of these two opposing

tendencies? This is an empirical question that needs further investigation using carefully drawn macro and micro data.

**Table 15: Trends in Area Cultivated Under Major Crops (1980/81 - 1997/98)  
Period Growth Rates**

Crop Type	Before Reform 1980/81-1990/91	After Reform 1991/92-1997/98	Average 1980/81-1997/98
Cereals	-6.6	5.7	3.4
Pulses	-9.3	3.8	2.3
Oil Seeds	-6.4	8.6	4.6
Total	-6.9	5.6	3.3

Source: Ministry of Economic Development and Cooperation (MEDaC), 1999.

**Table 16: Estimates of Production of Major Crops by Private Peasant Holdings  
(Both Seasons, in '000 Quintals)**

Year	Cereals	Pulses	Oilseed	Total
<b>Before Reform</b>				
1984/85	38727	4838	1046	44611
1985/86	44278	4605	1153	50036
1986/87	62775	5741	1089	69605
1987/88	59570	5640	881	66091
1988/89	57472	5953	891	64316
1989/90	61383	6749	983	69115
1990/91	57131	9968	3141	70240
<b>After Reform</b>				
1991/92	55603	9702	3057	38362
1992/93	70639	8425	1240	80304
1993/94	61912	7501	1107	70520
1994/95	65891	7947	1172	75010
1995/96	92654	8662	1963	103279
1996/97	93591	8609	2168	104368
1997/98	74349	7323	1817	83489

Source: Ministry of Economic Development and Cooperation (MEDaC), 1999.

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**Table 17: Imports by Commodity Categories**

Year	Food	Textiles	Machines. & Transport Equip.	Manufactured Articles	Petroleum Product	Others	Total Imports (In Million Birr)
<b>Before Reform</b>							
1986	21.4%	1.5%	32.2%	22.6%	9.1%	13.2%	2278.7
1987	10.8%	1.7%	41.7%	24.6%	10.4%	11.4%	2279.4
1988	14.5%	0.8%	29.9%	21.1%	9.9%	14.8%	2246.0
1989	8.7%	1.7%	33.6%	31.9%	11.3%	12.9%	1967.2
1990	12.5%	2.0%	na	23.6%	11.9%	12.6%	2225.7
1991	4.0%	3.0%	38.8%	25.2%	19.3%	9.7%	1081.7
<b>After Reform</b>							
1992	11.4%	4.9%	24.7%	17.0%	30.4%	11.7%	2251.8
1993	10.8%	2.3%	24.7%	31.0%	25.8%	5.5%	4074.9
1994	18.4%	2.7%	25.9%	22.2%	22.7%	7.6%	6147.0
1995	11.2%	2.6%	30.5%	20.2%	22.6%	12.9%	8086.6

Source: Computed from Customs Office Data

### **6. CONCLUDING REMARKS AND POLICY IMPLICATIONS**

In this study an attempt is made to examine trade liberalization and its implication for the coffee sub-sector. The study is largely based on 'the before after approach' which is chosen for its simplicity. Using this approach the data in pre and post- reform period are examined. The following are the main conclusions and policy implications that are drawn from the study.

First, trade liberalization, which is one component of the Ethiopian government's Structural Adjustment Policy, has led to an increase in the level of export (both in quantity and quality), area under coffee cultivation, private sector participation both in the process and marketing of coffee. The rise in proceeds from coffee export is also found to be chiefly due to the liberalization of the foreign exchange market. Although by 1994 world price of coffee had increased and perhaps accentuated the positive impact of the exchange rate policy pursued, the pure world price effect in raising the income of coffee producers would not have been as high as what it were had it not been for the exchange rate policy.

Second, this liberalization scheme, however, does not show that SAP (or the AoA, which has a similar effect) has enhanced the competitiveness of Ethiopia's coffee in the international market. Ethiopia's share in the world market is still too small (around 2%) to bring about such an effect. In fact, most micro evidences examined in this study show that the price elasticity is either small or statistically insignificant. This

may point to the fact that price liberalization by itself may not bring about major changes in the coffee sub-sector and, hence, needs to be accompanied by supply side policies.

Third, the volume of export, prices and farm income derived from coffee are largely dependent on both national and international trade policies. Thus, government policy of liberalization in the sector as well as the reduction of coffee taxes were very important. However, this does not necessarily imply that the country would benefit from the international market. In fact, the evidence in this study shows that the world coffee market is volatile and with no prospect for a rise in prices. The latter points to the danger of relying on the international market to ensure food security.

Fourth, some of the micro evidences show that even if peasants' earnings from cash crop could increase following liberalization, effective access to food depends on the efficiency of inter-regional trade in food. This requires government investment in infrastructure and efficient information & marketing system to help ensure national food security.

Five, one of the potential impacts of liberalization schemes such as SAPs, WTO or AoA is dumping. Dumping could reduce domestic food production. In Ethiopia, the increasing trend of food imports and food aid need proper management and sensible intervention by the state so as to avert its potential detrimental impact on domestic food. Concrete policy implications here could be efficient targeting of the needy regarding food aid and domestic support or protection of peasants against the detrimental impact of food imports.

Six, trade liberalization in the coffee sub-sector has also resulted in the decline in the share of taxes on exports in total government revenue. This suggests the possibility of a transfer of resources from the government to the private exporters. It is worth examining the opportunity cost of this fund when used under the public or the private sector.

Seven, since countries such as Ethiopia are price takers in the international commodity market, global liberalization by all developing countries implies a relative increase in global supply which in turn depresses export earning and, hence, the weakness of 'trade-based food security'. This has the policy implication of either strengthening collective action to fight against the price taker position or resort to 'food sovereignty' by collective negotiation on the rules of the global market such as AoA.

Finally, an in-depth study using micro evidence about farm-gate price, resource substitution and food market efficiency, among others, is required to come up with much more micro focused policy implication.

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