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MODELLING POVERTY AND ITS DETERMINANTS IN ADDIS ABABA: A FOCUS ON MULTINOMIAL LOGIT SELECTION MODEL

Abbi Mamo Kedir*

ABSTRACT

I have used different econometric models (OLS, probit and multinomial logit selection) to analyse factors leading to poverty. The main emphasis of the study is to model determinants of standard of living in Addis Ababa using two-stage estimation techinique. In the first step, a multinomial logit model is applied to distinguish between three socio-economic groups. The second stage regression, determinants of standard of living (i.e. total household expenditure per adult equivalent per month) are identified after incorporating the correction term for sample selectivity using the Lee-Heckman method. Among others, variables such as education, access to credit, employment status, gender, marital status and food shortage experience are significant determinants of welfare.

INTRODUCTION

To many, living in urban centres is considered as a better way of life. They do not seem to realise how poverty is prevalent in such areas. Urbanisation is associated with higher incomes, improved health, higher literacy and improved quality of life. Other benefits of urban life are less tangible but no less real: access to information, diversity, creativity and innovation. Yet along with the benefits of urbanisation come environmental and social ills, some of them at staggering proportions. Such problems include lack of access to basic facilities such as housing, drinking water, health and education. Most of the problems are caused by poverty and these same problems can be the cause of poverty as well. It is academically interesting and practically challenging to examine the factors that cause poverty. This study, apart from its policy significance, has a methodological motive.

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E-mail: LEX8AM@LZN2.LASS.NOTTINGHAM.AC.UK. This work is a tribute to the late Mekonnen Taddesse and my wife Menbere Zemedu who had been a great source of inspiration in my life and career development. On this occasion, I would like to thank my supervisor Dr. Andrew McKay and the two anonymous referees of the article for their critical and constructive comments. The final version of this article was submitted in February 2000.

Urban poverty is pervasive in most developing countries and it is becoming increasingly urgent to raise urban incomes. Due to its peculiar features from rural poverty, studying urban poverty separately is appropriate. So far many studies focus on rural Ethiopia. But that does not imply that urban Ethiopia is affluent. Rather the depth and severity of poverty in the urban areas can be more serious. This study tries to model poverty using a probit model and the determinants of poverty in Addis Ababa using a multinomial selection logit model. The analysis is based on the first round urban household survey of the Department of Economics of Addis Ababa University which was conducted in 1994. In fact few studies dealt with determinants and those which touched upon the issue used different models such as probit or logit models (Sahn and del Ninno 1994; del Nino 1994); multinomial logit model (Coloumbe and McKay 1996) and models that capture the dynamic factors that determine changes in standard of living and the mobility of households in and out of poverty from panel data (Grootaert *et al.*, 1995; Mekonen 1997). This study adopts the multinomial logit model used by Coloumbe and McKay (1996) in their attempt to identify the determinants of poverty in Mauritania.

We study the poor themselves (i.e. characteristics of household members and economic heads). Poverty is explained by individual circumstances and/or characteristics of poor people. The study depends on case theories of poverty. Some studies focus on the macro-economy rather than focusing on the poor and that approach follows a generic theory of poverty. Though it is not the purpose of this study, poverty can also be explained by economy-wide problems.

The objectives of this research are to contribute to the understanding of poverty in Ethiopia by identifying individuals or socio-economic groups that experience poverty and why they experience it by using a different approaches; to bring the scale of the poverty problem to the attention of policy makers and to fill the research gap as few studies have already been done on poverty in Ethiopia. There is only a single study on determinants of poverty (Mekonon 1997).

The paper is organised as follows. The first section gives a general background about the Ethiopian economy and poverty studies made so far. Relevant literature is reviewed in section two. It is split into two parts: review of theory and of empirical work. The third section deals with the standard of living measure considered in this study with the rationales for doing so. Section four discusses issues related with the data. Then based on the descriptive results, section five gives the poverty situation in Addis Ababa. The sixth section is about conceptual issues involved in modelling the determinants of poverty. Section seven reviews possible methodologies that can be adopted to model poverty and its determinants. The final section discusses the results and the possible policy recommendations. Then, the paper concludes.

1. LITERATURE REVIEW

1.1. Theoretical Issues

Poverty is the outcome of complex interaction of social, economic, cultural and political factors. One of the theoretical considerations in studying poverty is to adopt an appropriate definition. The concept of absolute poverty is the working definition in this study. Details have been omitted for the sake of concise presentation. The definition of absolute poverty is consumption based. An individual or a household in absolute poverty fails to have the necessary income that can purchase the basket of goods and services that are considered very basic in the context of a given society. In other words, such an individual or household fails to attain a minimum level of income above the poverty line. Illiteracy, malnutrition and ill-health are common features of families that are entrapped in absolute poverty. (see Alckock (1993); Townsend (1979); Sen (1985); Donnison (1982) for details)

Another theoretical problem is related to the measurement of standard of living of a household. Standard of living is affected by various factors such as income, expenditure, health status, educational level, area of residence and it is difficult to summarise all of its dimensions in a single aggregate figure. Growth in per capita GNP, HDI (human development index) and measures based on income and expenditure are the conventional measures. For household-based analysis expenditure (total or per capita) is generally preferred to income in LDCs. The expenditure approach is the one applied here. There are three reasons. First, current consumption is often taken to be a better indicator of current standard of living. Besides, it is assumed that instantaneous utility depends directly on consumption, not on income per se. Second, current consumption may also be a good indicator of long-term average well-being, as it will reveal information about incomes at other dates, in the past and future. This is because incomes of the poor often vary over time in fairly predictable ways. In such circumstances, there are typically consumption smoothing and insurance opportunities available to the poor, such as through saving and community-based risk sharing. Third, in economies where most people earn their living from employment in the informal sector, the expenditure approach is more realistic than other approaches [Deaton (1992); Glewwe (1991); Coulombe and McKay (1996); Mekonen (1996); Dercon and Mekonen (1997)]. Practical considerations such as adjustment for cost of living differences and household composition are required. As we are focusing only on Addis there is no need to make cost of living adjustment but adjustments for household composition using adult equivalent scales is made.

1.2. Empirical Literature

There are different sets of poverty determinants studies for different countries such as House (1991) for Sudan; Glewwe (1991) for Cote d'Ivoire; Appleton (1995a, 1995b) for Uganda; Appleton and Mackinnon (1997) for Uganda; and McKay and

Coulombe (1993, 1996) for Mauritania. We briefly review each study focusing only on the method adopted.

Studies of poverty using household survey data from developing countries have typically concentrated on measurement issues and on describing the characteristics of the poor. This work is sometimes technically very sophisticated and is a necessary first step for evaluating interventions targeted at the poor. However, there are surprisingly few studies which are based on multivariate analysis of the determinants of poverty; of estimating what could be termed 'poverty functions'. Such poverty functions might give more insight into what type of interventions could reduce poverty. They would also permit more valid inferences about the causes of poverty than are provided by the simple-often bivariate or univariate decomposition of poverty indices presented in conventional poverty profiles. Furthermore, they can control for more than one factor at once (Appleton 1995a:1).

When we talk about determinants of poverty we need to distinguish between economy wide factors and those that relate to individual households. Household size, religion and ethnic group of the head, education and health status, region of residence...etc. relate to household characteristics; on the other hand, transfers, government services, regulation of markets, asset redistribution (e.g. land reform) relate to economy wide factors. The macro factors can affect different households in different ways. Therefore, policies can focus on either of these factors or both to reduce poverty. The econometric analyses examine the factors related to individual households.

Glewwe (1991) identified determinants of household welfare in Cote d'Ivoire by regressing total household expenditure (i.e. the measure of the standard of living) on different explanatory variables. He used the Cote d'Ivoire Living Standards Survey (CILSS) conducted in 1985. Household characteristics are identified as determinants of poverty and he restricted himself to that portion of welfare due to consumption of goods and services. He brought to attention the fact that some regressors can be endogenous (e.g. stocks of both human and physical capital).

Appleton (1995a) introduced the concept of a poverty function, modelling the shortfall of household consumption from the poverty line as a function of reduced form determinants such as human capital and land holdings. A tobit model is estimated using data from a national household survey in Uganda. The welfare measure considered is real consumption per adult equivalent, sometimes right censored and expressed in logs. Parameters from the model are found to be similar to those from consumption functions, indicating that the poor receive comparable rates of return on their assets to the non-poor. Education of both men and women appears to raise the welfare of the poor as well as the non-poor, in both urban and rural areas.

Appleton and Mackinon (1997) analysed the survey data of 1992 collected from all districts in Uganda. They modelled poverty as discrete choice variable by using the poverty measures developed by Foster, Greer and Thorbecke (1984). Variations in consumption above the poverty line are not modelled. The focus is only on what happens to the poor. They estimated a tobit poverty function on the consumption of the poorest half of the population, with the dependent variable for the non-poor being set at the poverty line. The consumption functions are estimated for the whole population; with the same regressors as the tobit allowing for community level fixed effects. Their modelling exercise revealed that the results of modelling the determinants of poverty are fairly close to results from the simple consumption function.

The study by Coulombe and McKay (1996) focuses on the determinants (i.e. characteristics of household economic heads and households) of poverty in Mauritania using a household survey data for 1990. They provided summaries of the pattern of poverty by residence and socio-economic group and also of the relationship between the standard of living and demographic and other characteristics of households and their economic heads before the econometric estimation. They focused on the use of multivariate analysis to highlight more precisely the socio-economic determinants of living standards. To assume away with endogeneity of some variables they assumed exogeneity of some variables in the short run (e.g. household size and region of residence). However, at some level, many of the explanatory variables are endogenous. Their explanatory variables, for working households, include demographic characteristics, the sector of activity, measures of the size, permanence and formality of the enterprise and the value of its capital assets. For non-working households access to rental income, transfers, borrowing, savings, and ownership of any significant assets are taken as regressors. They used the multinomial logit selection model developed, among others, by Lee (1983). They applied a two stage estimation; the first capturing the choice of a socio-economic group (i.e. the estimation of the multinomial logit selection model) because the socio-economic group to which a household belongs is itself potentially a determinant of living standards. The second captures the determinants of the standard of living for each socio-economic group (i.e. using OLS) after correcting for sample selectivity. They did the analysis for urban and rural areas separately.

The study by House (1991) explores the nature, extent and principal determinants of income inequality (or socio-economic differentiation and relative poverty) for a sample of peasant households in Southern Sudan. He used OLS to estimate production and wage functions. House explained differences in household welfare, which is measured in terms of income per adult equivalent, in the context of the Chayanov model of peasant behaviour. He attempted to identify the causes of poverty and inequality by examining the links between income and sources of income; crops grown and sold; crop prices; socio-economic group; and household endowments along with their allocation to high or low yielding activities.

1.3. Similar Studies on Ethiopia

Why the study of determinants so important in Ethiopia? Poverty studies based on disaggregated household data have started to emerge as late as 1995 and they focused only on deriving poverty lines and calculating poverty indices. No attempt has been made except a study by Mekonen in 1997 to analyse the factors that lead to poverty. Therefore, little has been known about the nature of poverty in the country. In addition, the country has experienced a number of problems over the years and the impact of those problems on the standard of living can also be studied by identifying the determinants of poverty.

Mekonen (1997) attempted to address, simultaneously, two aspects of poverty in Ethiopia; determinants and dynamics of poverty. The study uses three rounds of urban household surveys conducted in 1994, 1995 and 1997. Consumption data was used to measure welfare and construct poverty profiles. In modelling determinants and dynamics of poverty, emphasis was placed on major socio-economic characteristics. Following Coulombe and McKay (1996) and Grooteart, *et al.*, (1995), the determinants of living standards are broadly classified into two; those that reflect household needs which includes household size and composition and those that determine the income-generating opportunities available to the household such as education, employment and ownership of assets. The study by Mekonen is different from other poverty determinants studies which are based on cross-section data. It tries to capture the factors that determine changes in standard of living and the mobility of households in and out of poverty from panel data. The model is estimated using OLS and is derived from the standard utility maximisation assumptions and uses real household expenditure per capita as money-metric measure of utility which takes into account differences in household size and relative prices. Total household expenditure per adult equivalent is used as the dependent variable with exogenously determined household characteristics as regressors.

2. THE DATA

The first round Ethiopian Urban Household Survey (EUHS) which was conducted in November 1994 in seven of the large urban areas of the country is the basis for this study. These are Addis Ababa, Awassa, Bahar Dar, Dessie, Diredawa, Jimma and Mekelle.The survey was administered by the Department of Economics of Addis Ababa University in collaboration with the University of Gotenborg, Sweden.

3. POVERTY IN ADDIS ABABA

In this section, I will discuss the situation of poverty in Addis Ababa at the household level. Some household-based studies (e.g. by the World Bank) have attempted to compute a poverty line and most of them classified households that are at the lower

end of the income distribution (i.e. 40 percent) as poor. According to the index showing incidence of poverty, Mekonen (1996) identified 47 percent of the sampled urban population in Ethiopia as poor and MEDAC (1997) showed 40.2 percent as poor. The different percentages are reflections of different poverty lines used by the different authors.

In recent years and the past, there have been many indications of declining living standards in the capital city. Scenes of increasing numbers of street dwellers and beggars, rising crime, prostitution, unemployment and inflation are common. Unemployment seems a more serious problem of all. New entrants into the labour market such as demobilised soldiers, those who are laid off from public enterprises and the civil service, increased number of school leavers (in hundreds of thousands), migrants (both permanent as well as seasonal) and refugees makes the situation even worse. Those developments will lead to increased casualisation of the labour market, with work opportunities becoming more unreliable and likely to be daily paid. Many households are engaged in female business income activities. Many households in the North and North West of Addis are engaged in weaving and pottery. Some sell local alcoholic drinks, firewood and charcoal, and home-made food items. Many individuals serve as housemaids to relatively better off families or as clothes washers. These are commonly done by school-leaving girls and female heads of households. Boys are often employed as daily labourers, assistants in garages, and engage themselves in shoe shining. In recent years, there are changes in livelihood sources for the city's dwellers. Most people are now employed as casual labourers or petty traders due to the changes related in the labour market following the economic reforms since 1991. The importance of employment in government institutions, factories and the army has declined.

Impressive strides in areas of urban infrastructure, education and health facilities, access to clean drinking water, housing, job opportunities...etc. are not observed even though one can not deny some positive developments attempted by the present government. Correspondingly, due to the presence of unemployment, poor sanitation, limited access to health facilities, there are deteriorating situations in living standards of many people living in Addis Ababa. The poor in the city have lower primary school enrolment rates (hence lower literary rates), lower access to sanitation and safe water, more sickness prevalence rates, ...etc. The main sources of drinking water are unprotected wells, rivers and lakes from where 72 percent of the national poor and 28 percent of the urban poor obtain their drinking water. Sanitation-wise, 89 and 49.9 percent of the national and the urban poor respectively use fields and forests as toilets (MEDAC, 1997).

All of the features of urban poor households discussed above have implications for living standards in the short and long term. Obviously, the absence of basic facilities and services lead to lower earning potentials (e.g. labour days lost due to illness) and perpetual poverty.

Having this background about the welfare situation of poor households in Addis, this section discusses the pattern of poverty in the city. The data used in the discussion is based on the sampled 878 households which are classified into three socio-economic groups. Demographic characteristics which involve the construction of bulky tables are omitted.

There is a country specific poverty line for Ethiopia. Specifically, for the purpose of this study the poverty line defined for Addis Ababa by Dercon and Mekonen (1997) is adopted. The objective here is to look at the pattern of poverty across different groups of households within Addis Ababa. This is done by computing the poverty indices for each group. Indeed, it can be argued that it is the choice of the poverty line which is the single most important determinant of poverty. Different poverty lines give different estimates of poverty.

Dercon and Mekonen used the approach suggested by Ravallion (1993) basically due to its transparency and wide application in developing countries. Building on Rowntree's seminal work Ravallion suggests the construction of one bundle of goods that represent the basic needs of a person. The value of this bundle is then the poverty line, under which one cannot obtain minimum basic needs. Problems remain however in how to account for differences in needs, if one is willing to consider them (Dercon and Mekonen 1997:5) In addition, there is a problem of identifying the minimum bundle.

The authors compared urban and rural poverty in Ethiopia and constructed two poverty lines; the first based on a single basket of food for all sites (i.e. assuming a representative national diet) and the second one using a separate diet for different parts of the country. The second set of poverty lines is more sensible as they take care of the differences in food culture in the country. Therefore, this study used the second set of poverty lines to look at the pattern of poverty in Addis Ababa by socio-economic group. The food poverty line for Addis Ababa is 66.25 Ethiopian Birr per adult per month and the total poverty line is 85.1 Ethiopian Birr per adult per month.

This means only about 10 to 13 US dollars per adult per month, which is far lower than the one typically recommended by World Bank of a dollar per person per day (World Bank, 1990). Therefore the poverty lines can not be compared at all with some of the international poverty figures (Dercon and Mekonen 1997:9). We also need to note that there are serious difficulties in computing the exchange rates to make the comparison. Since the focus of this study is not poverty level comparisons, we will not discuss the implications of the lines for poverty comparisons across countries. Rather the figures in terms of standard exchange rates can highlight the seriousness of poverty in Ethiopia. In fact, there is a need to consider the relatively cheap cost of living given foreign currencies. But still the amounts are not sufficient and can only enable one to purchase relatively poor and cheap types of food, which may not offer more than basic calories and a few other nutrients.

Using the food expenditure per capita data and the food poverty line adopted above, three poverty measures following Foster, Greer, and Thorbecke (1984) are derived for each of the socio-economic groups identified in Addis Ababa. These indices have a characteristics of being decomposable. Therefore, we can look at the contribution of each of the socio-economic groups to the total poverty in Addis Ababa. The calculation of the indices and their decomposition is explained in the Annex.

Table 3.1. Descriptive statistics, Poverty Indices and Decomposition of the indices by Socio-economic Group

Socio-economic group	Sample share	Average Standard of living*	St. Dev.	P0 (Incidence)	P1 (Poverty gap)	P2	C0	C1	C2
Wage-employed Households (445)	0.51	84.97	73.4	0.49	0.41	0.23	0.46	0.46	0.47
Self-employed households (274)	0.31	78.98	70.5	0.58	0.45	0.26	0.33	0.32	0.32
Unemployed Households (159)	0.18	78.76	73.2	0.59	0.46	0.27	0.20	0.19	0.20
All (878)	1.00	80.90	72.40	0.55	0.44	0.25	0.99	0.99	0.98

Note: * = The average standard of living is given in terms of the national currency (the Ethiopian Birr).

According to the summary statistics in the above table, the average standard of living is not significantly different among the socio-economic groups considered. The self-employed and the unemployed have fairly similar average living standards. Wage-employed households have the highest welfare according to the mean value (i.e. 84.97), which is also above the average for all households. But both self-employed and unemployed households with 78.98 and 78.76 fall short of the total average: 80.9. The standard deviation in column four shows that there is more inequality among wage-employed and unemployed households than self-employed ones.

The table also tries to indicate the pattern of poverty in Addis Ababa. The P_α measures were calculated for each socio-economic group and for all households considered in this study. P_0 indicates the incidence of poverty, the highest being for unemployed households followed by self and wage-employed households. According to the incidence index, 55 percent of the sampled households are classified as poor. A similar pattern exists when we consider P_1 and P_2 measures. For all the three values of α, the unemployed households are the poorest and the wage-employed are the least hit by poverty while the self-employed remain in between.

The depth of poverty, measured as P_1/P_0, is more serious in wage-employed households than the other two groups of households. In other words, the ratio can be interpreted as the average income gap for the group of households that are below the poverty line. The average income of wage employed households below the poverty line is 17 percent of the poverty line income level. For self-employed and

unemployed households we have 24 and 22 percent respectively. These are surprisingly low figures.

The contribution of each of the socio-economic groups to total poverty is computed for each of the poverty indices. With respect to the contribution to total poverty in Addis Ababa by different groups, we see that the wage-employed households contribute the most. In fact, this is partly due to the large sample share that this group of households got. Self-employed and unemployed households seem to contribute to poverty slightly higher than their population share. Their contribution is 0.33 and 0.20 respectively. Correspondingly, the wage-employed households contribute slightly lower than their population share even if their contribution to the total poverty is higher than the other two groups. There is no significant variation in the contribution of poverty by each socio-economic group as alpha increases or as emphasis is placed on the poorest among the poor.

It is not surprising to note that unemployed households are the worst hit by poverty as we can see from the indices calculated. This group of households constitutes a heterogeneous group of households that are more likely to have lower living standards. They include pension and remittance receiving households, households with inactive and active unemployed, handicapped members...etc.

The above results showed the pattern of poverty in Addis Ababa. The major objective of the research is to model determinants of poverty. Thus, the following section will focus on the methods used in this study.

4. METHOD OF ANALYSIS

4.1. General

The regression results are based on different models. The first set of results pertains to the model of OLS, which is estimated taking the standard of living measure as a continuos dependent variable. The estimates are generated for two alternative standard of living measures viz. food expenditure per adult equivalent per month (PCF) and total expenditure per adult equivalent per month (PCT). The latter measure is used in the final regression since it is a more sensible measure of the standard of living of a household. In addition, using PCT has improved the overall fit of the model.

The second set of results relate to a probit analysis in an attempt to model poverty per se. The probit results reported are based on the poverty line defined for Addis Ababa. Poverty is modeled by defining the poverty index (i.e. incidence of poverty) as a binary dependent variable. The third set of results is based on the multinomial logit selection model.

4.2. The Probit Model

One of the objectives of this study is to determine the socio-economic factors causing poverty. The focus is on socio-economic factors since the survey data used here has a lot of information about socio-economic characteristics of households and individuals. The households surveyed were classified into different socio-economic groups depending on their major source of income. Then the variables that pertain to all groups in general and to each group in particular were identified. A probit analysis based on a poverty line defined for urban Ethiopia is attempted. The idea is to model poverty per se instead of modeling standard of living. The coefficients of the estimated model give the factors that more likely make households poor. Before discussing the results of the model, I have briefly reviewed the theoretical outline of the model.

The probit model is useful to model the behavior of a dichotomous dependent variable and uses the normal distribution (see Maddala 1983; Gujarati 1995; Greene 1997). In each case, we can construct models that link the decision or outcome to a set of factors in using regression. One approach will be to analyze each of the choices (whether one is poor or not is relevant here) in the general framework of probability models;

$$\text{Prob(event j occurs)} = \text{Prob}(Y = j) = F[\text{relevant effects: parameters}] \qquad [4.1]$$

The great majority of recent empirical work in economics has used models of binomial choice. For illustration, consider a model of labor force participation. The respondent either works or seeks work (Y = 1) or doesn't (Y = 0). A set of factors, such as age, marital status, education, work history, and so on, gathered in a vector X could explain the decision, so that

$$\text{Prob}(Y = 1) = F(X'\beta)$$

$$\text{Prob}(Y = 0) = 1 - F(X'\beta) \qquad [4.2]$$

The set of parameters β reflects the impact of changes in X on the probability of participating in the labor force (Greene 1997:873). Similarly, the set of parameter estimates show the impact of changes in X (say household and individual specific characteristics) on the probability of being poor.

Thus, for a given regressor vector, we would expect

$$\lim_{\beta'X \to +\infty} \text{Prob}(Y = 1) = 1$$

$$\lim_{\beta'X \to -\infty} \text{Prob}(Y = 0) = 0 \qquad [4.3]$$

The normal distribution gives rise to the probit model,

$$\text{Prob}(Y = 1) = \int \phi(t)\, dt = \Phi(\beta'X) \qquad [4.4]$$

The function $\Phi(.)$ is a commonly used notation for the standard normal distribution.

4.3. Modeling Poverty

Total household expenditure per capita or total household food expenditure of the ith household (E_i) can be modeled in a reduced form as a function of demographic characteristics of the head (such as age, gender, religion, ethnic group, marital status) D_i; and other members (percentage of children and old people, household size) O_i; education and health status of the head, EH_i; other variables such as access to credit, remittance, pension, farming activity, tenancy, and vulnerability,...etc. R_i.

$$E_i = b_1 D_i + b_2 O_i + b_3 EH_i + b_4 R_i + U \qquad [4.5]$$

This is one simple regression of real expenditure with U_i as the error term. It allows one to identify those observable factors which are correlated with household welfare and suggests casual inferences. This equation is the basis for the OLS results of the next chapter. However, caution must be exercised in making inferences due to the possibility of simultaneous or reverse causation (Appleton and Mackinon 1997).

Modeling the welfare of the whole population is not the same as modeling poverty per se. A probit model is estimated to model poverty itself in Addis Ababa. In particular, if one is solely interested in poverty, then variations in the welfare of the non-poor are irrelevant. Hence, factors which affect poverty should be separated from the processes determining the consumption of the non-poor. In stead of using the consumption of all as the dependent variable one could take the measure of household poverty, P_i, suggested in the P_α measure (Foster *et al.*, 1984). For instance, Coulombe and McKay (1993) used a probit model to analyze what

determines whether a household is poor or not. That means the P_i measure is defined as a binary discrete variable. It takes the value of one when the total expenditure per capita (E_i) is below the defined poverty line (e.g. 66.25 Ethiopian Birr per month) and a value of zero otherwise. Or

$$P_i = 1 \quad \text{if } E_i \leq PL(\text{the poverty line})$$

$$P_i = 0 \quad \text{otherwise} \qquad [4.6]$$

4.4. Modeling Standard of Living

In this study, three socio-economic groups are identified and they fall in the category of unordered choices in the context of the econometric literature of qualitative and limited dependent variable models. Both multinomial probit and logit models can be used for the study of ordered and unordered multiple choices. The multinomial probit model is computationally more complicated than the multinomial logit model but it is less restrictive. It requires much more computer time per iteration than the logit model. Other discrete choice models include nested logit and conditional logit models. Under multinomial logit model, there is a single vector of characteristics, which describes the individual or the household and a set of parameter vectors. In the case of nested logit model, these are essentially reversed. The set of parameters is each characterized by a set of attributes. Thus for my purpose, I can not use the nested logit model to model the standard of living of households. In addition, conditional logit is irrelevant because it is appropriate only when the data consist of choice-specific attributes instead of individual-specific characteristics. However, the conditional logit model is more or less the same as the multinomial logit (Greene 1997:917). Since I have individual or household specific characteristics as determinants of standard of living the multinomial selection model is appropriate and it is adopted in this study. In the literature review part, it is mentioned that the same methodology is used by Coulombe and McKay for Mauritania. The details of the model are outlined below.

4.5. The Multinomial Logit Model

The choice of a socio-economic group by a given household is considered as endogenous. But as argued above, it is difficult to conclude that this choice is purely endogenous. This endogeneity is taken care of by adopting a two-stage modeling following Lee (1983).

In a framework of discrete choice models, one observes the attributes of the choices (i.e. that of the socio-economic groups in this case). The probability of each

household (i) being in j (where j is the socio-economic group) is given as (Maddala 1983);

$$P_{ij} = \exp(X_i'\beta_j) / 1 + \sum_{k=1}^{m-1} \exp(X_i'\beta_k) \qquad [4.7]$$

where J = 1,.....,m-1.

K = sum over all other choices

β = vector of unknown parameters associated with the vector of regressors X which are assumed to be exogenous. The X's are characteristics of the observed households and their members.

$$P_{i,m} = 1/ 1 + \sum_{k=1}^{m-1} \exp(X_i'\beta_k) \qquad [4.8]$$

where $\sum_{j=1}^{m} P_{ij} = 1$ is the sum of all individual probabilities.

The probability of each outcome (i.e. the choice of the socio-economic group) is a function of X. Equation 4.7 above is referred to as the multinomial logit model.

The model implies that one can compute j log odds-ratios which can be given as

$$\ln P_{ij} / P_{i,0} = X_i'\beta_j$$

One could normalize on any other probability as well and obtain

$$\ln P_{ij} / P_{i,k} = X_i (\beta_j - \beta_k). \qquad [4.9]$$

From the point of view of estimation, it is useful that the odds ratio, P_j / P_k, does not depend on the other choices. This follows from the independence of disturbances in the original model (Greene 1997:915).

I shall now consider the estimation of this equation based on sample size of n. In the present context, n is the number of households. Each of the n households will fall into one of the categories (i.e. the socioeconomic groups) with the probabilities of falling in a specific group given by equation [4.7]. Then the probabilities P_{ij} and $P_{i,m}$ for the ith household are obtained.

I also defined a set of dummy variables such that

$Y_{i,j}$ = 1 if the ith household falls in the jth socioeconomic group.

$Y_{i,j}$ = 0 otherwise

Then the likelihood function for the multinomial logit model can be written as

$$L = \prod_{i=1}^{n} P_{i,1}^{\ y_{i,1}} * P_{i,2}^{\ y_{i,2}} * \ldots * P_{i,m}^{\ y_{i,m}} \qquad [4.10]$$

A simple monotonic transformation of (7.10) gives us the log likelihood as:

$$\log L = \sum_{i=1}^{n} \sum_{j=1}^{m} Y_{i,j} \log P_{i,j} \qquad [4.11]$$

Differentiating equation [4.11] numerically w.r.t the parameters (β_k), we get the maximum likelihood estimates of the model. Methods such as the Newton-Raphson iteration method are employed due to the non-linear characteristics of equations [4.7] and [4.8].

The second derivatives of the log likelihood are negative which guarantees the existence of a unique maximum and the iteration procedure converges to the maximum. In the next section, based on the above general exposition of multinomial logit models I will discuss the multinomial logit selection model.

4.6. The Multinomial Logit Selection Model

Multinomial logit models can be viewed as special cases of a general model of utility maximization. They are applied to many situations such as the choice of occupation (Schmidt and Strauss 1975); selection of sector of employment (Krishnan et al., 1998); choice of socioeconomic groups (Coulombe and McKay 1996) and choice of transport modes (Theil 1969). In this study, a similar exercise as that of Coulobme and McKay is attempted for Addis Ababa.

Three socio-economic groups are identified and I am interested in analyzing the implications of being in one of them. Such an analysis is important because one's welfare or living standard depends on the socioeconomic group that one belongs to. For instance, being in self-employment, more likely, may make a household poor. This may be due to factors such as irregularity of income, lack of initial capital to set up businesses due to credit market imperfections, the high probability of this group to be out of employment for a long period time...etc.

Let the selection function is denoted by Y. Let Y_i be a discrete choice variable which takes on the value j if the household i is in group j (j= 0,1,2,...,k), k can be considered as the last socioeconomic group we have. Y_i^* is the latent variable of the model denoting, say, the indirect utility associated with being in group j. It is unobservable. But Y_i is a polychotomous observable realization. Let Z_i is a vector of characteristics of the head and other characteristics of the household and u_i is the error term which is independently and identically distributed (iid). Similarly X_s is a matrix of explanatory variables for households in group s and η_i is the error term independent of X_s. γ_s and β_s are group-specific coefficients. All right hand side variables are exogenous.

The relationship between the variables is expressed as:

$$Y_i = j \text{ if } Y_i^* = \text{Max}\,(Y_{i1}^*, Y_{i2}^*, \ldots, Y_{ik}^*)$$
$$Y_i = 0 \text{ otherwise}$$

where

$$Y_i^* = Z_i \gamma_s + \eta_i \qquad [4.12]$$
$$Y_i = X_i \beta_s + \sigma_s u \qquad [4.13]$$

Household i (i = 1,2,...,N) selects group j if and only if :-

$$Y_{ij}^* > \text{Max}\, Y_{ik}^*; \quad \forall\ s \neq k$$

This might be interpreted as saying that they obtain a higher level of welfare (or utility as proxied by the total consumption expenditure per capita) from that group than any other. One will be better off and will be in a certain group if the group can generate higher utility or higher purchasing power.

Equation (4.12) is modeled as a function of household-specific explanatory variables, estimated as a multinomial logit and considers the same variables across all households (Coulombe and McKay 1996). Therefore, the subscripts on the X's can be dropped.

What is the log likelihood function for this polychotomous choice model?

Let i be a polychotomous variable with values 1 to M and denote i = s if category s is chosen. Equivalently,

$$I = s \text{ if and only if } Z_i \gamma_s > \varepsilon_s \qquad [4.14]$$

where

$$\varepsilon_s = \text{Max } Y_s^* - \eta_s \qquad [4.15]$$

$$s = 1,\ldots,M$$

For each pair (u_s, ε_s) where u_s is the error term specified in socioeconomic group specific equation below. Suppose the specified marginal distribution of u_s is $G_s(u)$ and the implied marginal distribution of ε_s is $F_s(\varepsilon)$. Let $g_s(.)$ be the density function of $G_s(.)$. Define dummy variables D_s, s=1,..., M such that

$D_s = 1$ if and only if $I = s$
$D_s = 0$ otherwise

The log likelihood function for this polychotomous choice model with random samples of size N is

$$\ln L = \sum_{i=1}^{n} \sum_{s=1}^{m} \{ D_{is} \ln g_s((Y_{is} - X_{is}\beta_s)/\sigma_s) - D_{is} \ln \sigma_s + D_{is} \ln \Phi((J_{1s}(Z_{is}\gamma_s) - \rho_s J_{2s}(Y_{is} - X_{is}\beta_s))/(1 - \rho_s^2)^{1/2}) \} \qquad [4.16]$$

where $J_{1s} = \Phi_0^{-1} F_s$ and $J_{2s} = \Phi_0^{-1} G_s$

ρ = the correlation coefficient between u and ε.

When the marginal distributions of u_s are normally distributed N(0,1) (the assumption which we use here), two stage technique can be used to estimate the equations;

$$Y_s = X_s \beta_s - \sigma_s \rho_s \phi(J_{1s}(Z_s \gamma)) / F_s(Z_s \gamma) + \eta_s \qquad [4.17]$$

If the polychotomous choice model is multinomial logit model (as in this case), and the marginal distributions of the potential outcome functions Y_s are normal, we have a multinomial logit-OLS two-stage estimation method (Lee 1983:511).

As indicated in equation [4.17], after the selection of the socio-economic groups, we also estimate equations that are specified as linear functions for each socio-

economic group separately. These equations give the living standards of the household as a function of relevant explanatory variables. The regressors now vary across the socio-economic groups since I have included variables that are group specific. For instance, the dummy variable which asks whether the economic head is employed in the public or private sector is relevant to wage employed households not to self-employed households. In addition, regressors that are common to all socio-economic groups can have different degree of importance from group to group. The education, ethnic group and credit dummies are cases in point. Education might be more important to determine whether a given household belongs to wage employment than it determines whether the household belongs to the self-employed or unemployed households. Ethnicity also matters. Some ethnic groups (e.g. the Gurages) tend to be engaged more in self-employment.

It is also important to note that equation [4.13] can be rewritten as;

$$Y_w = \beta X_w + \varepsilon_w \quad [4.18]$$

$$Y_{se} = \beta X_{se} + \varepsilon_{se} \quad [4.19]$$

$$Y_u = \beta X_u + \varepsilon_u \quad [4.20]$$

where Y_w, Y_{se} and Y_u ,respectively, represent the standard of living for the wage-employed(w), self-employed(se) and unemployed(u) households.

X_w, X_{se} and X_u are group-specific regressors.

ε_w, ε_{se} and ε_u are group-specific disturbances or heterogeneity terms.

An explanation of the living standards of households in the short run potentially requires an explanation of the socioeconomic group to which a household belongs and conditional on than choice, an explanation of the determinants of the household's living standard within that group. If the first is indeed endogenous, then a selectivity bias would arise in considering the second only. In such a case, the two elements need to be explained jointly. Meaning equations [4.12] and [4.13] must be considered jointly. They can be estimated using a two-stage procedure as long as a Heckman-like selectivity term (Maddala 1983), derived from the multinomial logit estimation equation [4.12], is included in equation [4.13]. Having included this term in equation [4.13], it may then be estimated by OLS to get consistent estimates (Coulombe and McKay 1996).

4.7. Estimation: Selectivity and Heckman Two-Stage Technique

Selectivity concerns the presence of some characteristics of the treatment (or control) group that is both associated with receipt of the treatment and associated

with the outcome so as to lead to a false attribution of causality regarding treatment and outcomes (Johnston 1997:447). The idea in the econometric exercise of modeling standard of living involves an explanation of the socioeconomic group to which a household belongs and conditional on that choice, an explanation of the determinants of the household's living standard within that group. In previous discussions, I have noted that the choice of a socioeconomic group is endogenous. Thus selectivity bias would arise only in considering the second. The simplest way to account for this is to run separate regressions. For instance, one could have different standard of living equations for each socioeconomic group. If allocation into the different groups is not random, however, our estimates in each equation may be contaminated by selectivity bias. One of Heckman's insights was that it is sometimes possible to control for this. He suggested a two-step method. This method is often used in situations where selectivity bias may present.

Due to the presence of a selectivity bias, the two-stage procedure is adopted in this study. The first equation captures the choice of socioeconomic group. The choice becomes an endogenous factor in the second equation: i.e. standard of living equation for each socioeconomic group. Some dummy variables (e.g. from the set of education dummy variables) are omitted to avoid the problem of linear dependence during estimation. The second equation then applies only to those households belonging to a certain group and gives the living standard of each of the households as a function of relevant regressors. As mentioned above, because of the selectivity problem the two equations must be considered jointly (Johnston 1997; Maddala 1983; Coulombe and McKay 1996). In other words the problems of selectivity bias refers to the fact that if equation [4.13] is estimated by OLS without the selectivity term, we get inconsistent estimates of the parameters.

There are obvious limits to how much can be inferred about the determinants of welfare and poverty from household level cross sectional survey data, even when employing multivariate analysis. Both the range of possible causation which can be explored and the confidence which can be placed in any inferences is restricted (Appleton 1995a:3).

5. RESULTS

The regression results below are based on probit and multinomial logit models. The multinomial logit selection model has been estimated before the selectivity corrected OLS model. Meaning a two-stage estimation technique was used. The logit model which is estimated at the first stage related to socioeconomic group choice. Using the Heckman-like selectivity term from the first stage, in the second stage OLS is used to arrive at consistent estimates for each of the socioeconomic groups identified.

5.1. Probit Results

Following the theoretical discussion, a probit model is estimated for each of the socioeconomic groups and all households taken together. The results are presented in Table 5.1. The magnitude of the coefficients obtained from the probit model estimation can be taken as measures of the relative influence of the different explanatory variables on the probability that the household is poor. The larger the coefficient, the greater is the effect of the explanatory variable on the probability that the household is poor.

Most of the probit results are consistent with OLS results which are estimated for the sake of comparison but not reported here. But inconsistencies can also be observed given the sensitivity of the dependent variable under probit to the poverty line adopted. Age reduces the likelihood of being poor while age squared does increase it. The older the head of the household, it is less likely for the household to be poor. Being in any of the ethnic groups increases the probability of being poor for all households and socioeconomic groups. There are different social and economic explanations why some ethnic groups seem to achieve a higher level of welfare than others. Obviously, dependency increases the risk of being poor. Farm and/or livestock ownership has the same impact and this is in direct contrast to the OLS results. We may argue that keeping livestock or having a farm is more expensive in Addis than other urban centers. This is due to the high cost of animal feed (mostly imported) and high cost of land which makes households net debtors. Ownership of livestock and farm can reduce the risk of poverty in the long run but in the short run the opposite effect might dominate as we can gather from this one shot cross-sectional analysis. Besides, households with farm and livestock ownership are very small in number in the sample considered and the positive impact of such a variable might have been taken care of by other regressors. Another inconsistent result with the OLS results relates to credit. For self-employed and unemployed households, it reduces the probability of being poor but increases it for the wage-employed households and all households taken together. But for the latter set of households the coefficients are statistically significant and hence the results are more credible. Therefore, on balance, taking loans increases the probability of being poor.

Receiving remittances increase the likelihood of being poor except for self-employed and wage-employed households. Transfers exist among the poor in poor communities owing to strong family ties. These transfers may reduce inequality among the poor but not the incidence of poverty. Except in the case of unemployed households, if the economic head is male, the household is more likely to be non-poor. For unemployed households, whether the household is female headed or not, it is equally more likely to be poor. The result supports the widely held view that female-headedness is related to being poor. But it is difficult to be that conclusive as the other two regressions tell us a different story. Illness contributes positively to the chance of being poor for self-employed and unemployed households. The result is statistically significant for wage-employed and for all households in the groups. This

may suggest that household welfare analysis based only on the health status of the head may be misleading. Rather a better picture could have been observed if the health status of all household members (at least the economically active ones) is considered. However, it is difficult to define health status. If the head is married, it is more likely for the household to be poor and households which have migrated are less likely to be poor. Given the probit results, religious difference (unlike expectations) does not seem to matter in affecting the probability of being poor. Households with heads who have no education and only primary level of schooling are more likely to be poor. For wage employed households attaining, at least, primary education makes it more likely for them to be non-poor. Many individuals are employed in low level public sector employment in the city earning 105 Ethiopian Birr which is the recent minimum wage and above the poverty line defined here. But for self-employed households, even tertiary education (except vocational and technical training) increases the probability of being poor.

Table 5.1. Probit Results

Regressor	Wage Employed	Self-employed	Unemployed	All
Age	-0.024(-4.2)	-0.001(-0.2)	-0.02(-2.50)	-0.0205(-6.5)
Age Square	0.001(14.3)	0.001(7.9)	0.0002(3.0)	0.001(24.0)
Amhara	0.036(1.9)	0.129(4.7)	0.060(1.10)	0.127(6.9)
Child	0.051(1.0)	0.50276(7.8)	0.066(0.64)	-0.136(-3.5)
Credit	0.025(1.2)	-0.0456(-1.73)	-0.0001(-0.02)	0.03498(2.3)
Farm	0.094(1.7)	0.214(5.12)	0.00332(0.04)	-0.0041(-0.2)
Gift	-0.009(-0.3)	0.006(0.11)	0.060(0.6)	0.009(0.5)
Gurage	0.079(2.0)	0.0023(0.1)	0.095(0.9)	0.103(4.0)
Head	-0.002(-0.1)	-0.019(-0.5)	0.646(1.1)	-0.025(-1.4)
Health	-0.037(-1.6)	0.034(1.3)	0.041(1.0)	-0.142(-8.8)
Married	0.115(4.8)	0.028(0.9)	-0.029(-0.5)	0.072(4.0)
Migrant	-0.113(-3.6)	-0.245(-4.9)	-0.019(-0.3)	-0.036(-1.8)
Muslim	-0.129(-2.1)	-0.830(-12.5)	0.769(3.2)	0.065(0.4)
Noed	0.039(1.2)	0.97(5.2)	-	0.676(9.5)
Old	0.941(10.8)	2.43(15.5)	0.008(0.04)	0.806(12.6)
Orthodox	-0.109(-3.5)	-0.911(-16.2)	0.738(3.4)	0.001(0.01)
Pension	-0.069(-2.3)	0.133(2.6)	0.061(1.3)	0.086(4.9)
Pred	-0.070(-2.4)	1.019(6.6)	0.012(0.2)	0.66279(9.7)
Public	0.021(1.09)	-	-	-
Remit	-0.004(-0.14)	-0.148(-4.4)	0.123(2.6)	0.071(4.4)
Retrench	0.076(1.7)	-0.22(-2.7)	0.14(1.4)	-0.07(-2.1)
Sced	-0.057(-2.1)	0.835(5.3)	-0.768(-1.0)	0.679(10.3)
Size	-0.036(-9.1)	0.832(-5.7)	-0.0003(-0.04)	-0.044(-15.31)
Tenancy	-0.001(-0.1)	0.211(7.9)	-0.01(-0.2)	-0.11(-7.5)
Ter2ed	-0.031(-1.0)	1.11172(6.4)	-	0.73(10.4)
Tered	-0.013(-0.3)	-0.42(-1.4)	0.17(-1.1)	0.57(7.3)
Vulner	-0.022(-1.1)	0.097(2.2)	0.062(1.5)	0.121(7.20)
Oromo	-	-	-	0.0487(4.6)
Tigre	-	-	-0.023(-0.2)	0.155(5.4)
Other	-	-	-	0.094(0.5)
Tred	-	0.899(5.7)	0.070(1.1)	0.687(9.6)
Hrfba	-	-0.007(0.2)	-	-
Constant	-1.32(-10.0)	-2.34(-9.8)	-1.905(-6.3)	-2.36(-11.4)

Note: Coefficients for some regressors are not reported due to two factors. One if the regressor considered is group specific and two the software rejected them during iterations. The figures in the parentheses are t-ratios.

This might have important policy implication to the education curriculum of the country which will be discussed in the policy section below. Only household heads with vocational and technical training have a lower chance of being poor. Households with pensioner heads are more likely to be poor. This is consistent with the small amount of pension income that pensioners receive and the limited social security benefits they get from the government. Wage-employed households that work in the public sector and that have retrenched economic heads are less likely to be non-poor. In addition, unemployed households with laid off heads are more likely to be poor and this strengthens the fact that households which are more likely to be poor are those which have heads who become unemployed due to reforms. This group of households might constitute what are recently termed as the newly poor.

If the household owns dwellings and has a large family size, it is less likely for it to become poor. This is true for all except for self employed households. Except for the sample of households studied here, the results can not be bases for generalizations. This is because the type of the majority of the housing units owned by households are low quality dwellings which are mostly not conducive for the welfare of family members. Therefore, ownership of a dwelling unit does not necessarily contribute to the probability of being non-poor. Besides, the result related to family size is not consistent with the OLS, logit and the selectivity corrected OLS results. Except for wage-employed households, those who experienced food shortages are more likely to be poor. Food shortage families do not have savings and any food reserves to fall back on in times of disaster. This has implication for a food security policy. Among self-employed households those households whose heads are engaged in female business activities are more likely to be poor.

5.3. Multinomial Logit Results

The multinomial logit selection model which was discussed in the previous section is estimated for the selection of the three socioeconomic groups identified in this study. Conditional on the socioeconomic group to which a household belongs, living standards are modeled as a function of relevant factors for each of the three groups. The final regressors considered are based on the discussion in the previous section and on the above OLS and probit results. The results of the two-stage estimation technique are reported in Tables 5.2 and 5.3. The former gives the first stage results of the regression show the marginal effects of the multinomial logit model and the latter gives the second stage results of the regression give the selectivity corrected OLS estimation results. Variables such as TRED and TERED are omitted from the education dummies defined to avoid the problem of perfect linear dependence among the variables.

The marginal effects reported show the influence of the regressors considered on the probability that a particular household belongs to the socioeconomic group in question.

Table 5.2. Marginal Effects, Part I, Multinomial Logit Results

Variable	Wage Employed	Self-employed	Unemployed
Constant	0.1949(0.368)	-0.389(0.000)	0.0000(1.000)
Noed	-0.1571(0.024)	0.3142(0.000)	0.026(0.000)
Pred	-0.1574(0.009)	0.3148(0.000)	-0.019(0.000)
Sced	0.0063(0.926)	-0.0126(0.639)	-0.020(0.000)
Tered	0.0747(0.424)	-0.149(0.000)	0.0008(0.864)
Age	-0.0015(0.878)	0.0029(0.434)	0.0094(0.000)
Age Squared	-0.00003(0.810)	0.0001(0.232)	-0.0002(0.000)
Head	0.0277(0.589)	-0.0554(0.008)	-0.0000(0.998)
Married	0.0215(0.685)	-0.0429(0.043)	0.0035(0.178)
Size	-0.0004(0.962)	0.0007(0.807)	0.0027(0.000)
Log Likelihood(unrestricted) = -730.9 Log Likelihood(restricted; slopes=0) = -893.7			

Note: Figures in parentheses are probability values.

Among all the variables considered, education seems to be a significant factor influencing the choice of socioeconomic group. If the head of the household has no education, it is not likely for the household to be in the group of wage-employed households. Instead, it is more likely for it to be self-employed and unemployed. Likewise, primary level of schooling has a negative influence for households to be in wage-employment and unemployed. But it has a positive influence for them to be self-employed. Secondary and tertiary level education have positive influence for households to be wage-employed but negative influence to be self-employed. Households are less likely to be unemployed if their heads have secondary education. If the household is male-headed, it is more likely to be wage-employed but not self-employed and unemployed. If the head is married, it has a positive influence on the probability of being in the group of wage employed and unemployed households but a negative influence on the probability of being in self-employment. Large family size has a positive influence on being unemployed and self-employed and a negative influence on being wage employed. This can be related to the education variable result. The smaller the size of the family, the greater the opportunity for it to support the schooling of its members and hence the greater the chance for it to be wage-employed. In addition, families with large numbers of members are more likely to be engaged in self-employment and often children from such families participate in children business activity to support their family and cover their subsistence and schooling expenses. Consistently, wage employed households have relatively fewer family members and better living standards than self-employed and unemployed households. Herein below we discuss the selectivity corrected OLS results.

Based on Table 5.3, for each of the socioeconomic group equations, lambda(λ) is reported before the constant term. It represents the Heckman-type selectivity correction term in the regression. It is significant for wage-employed and self-employed households.

For wage-employed households education has a positive impact on living standards. To make estimation possible (or to avoid perfect linear dependence) TERED and TRED are omitted from the education dummies. Quite surprisingly, even having no education has a positive impact. This might be due to existence of other factors (such as inheritance, ownership of profitable small enterprises, remittances) which raise living standards. These factors do not necessarily require attainment of a certain level of education. It is possible for the rich to be illiterate and it is so in many parts of the country, Addis Ababa being not an exception. For self-employed and unemployed households, if the heads have no education or only primary education, living standards are negatively affected. At higher levels of education beyond the primary level, these groups have higher levels of welfare. Age contributes positively to the welfare of all households. However, it has negative contribution to self-employed and unemployed households respectively. Except in the case of unemployed households, having male heads is associated with lower living standards. Therefore, contrary to popular convictions, we can say that (at least for Addis Ababa) families with female heads are not necessarily poor. In all the groups, family size and credit have significant negative impacts on standard of living. Access to credit may not be an indicator of better production and welfare-enhancing opportunities for urban households as it is for their rural counterparts. This may be the reason for the negative association between loans and living standards in the capital.

Table 5.3. Model of Determinants of Standard of Living
OLS Results (Part Two of the Two-Stage Procedure)

Variable	Wage Employed	Self-employed	Unemployed
Dependent Variable	PCT	PCT	PCT
Lambda	-254.26(0.006)	-154.20(0.013)	-112.77(0.303)
Constant	171.72(0.002)	424.26(0.001)	331.4(0.196)
Noed	147.96(0.015)	-95.412(0.006)	-56.913(0.053)
Pred	164.08(0.007)	-50.264(0.124)	-18.333(0.681)
Sced	35.74(0.001)	56.722(0.017)	5.8190(0.846)
Ter2ed	54.373(0.002)	191.70(0.00001)	138.00(0.0003)
Age	3.648(0.087)	-1.9609(0.451)	1.2153(0.727)
Age Squared	0.016(0.612)	0.019(0.499)	-0.029(0.215)
Head	-36.014(0.041)	-16.881(0.228)	7.3766(0.877)
Size	-12.110(0.000)	-5.559(0.0141)	-9.209(0.089)
Married	-11.219(0.337)	0.281(0.984)	7.133(0.738)
Credit	-12.359(0.141)	-13.522(0.206)	-12.75(0.409)
Tenancy	6.867(0.403)	20.820(0.065)	30.765(0.051)
Muslim	25.981(0.262)	-2.163(0.935)	70.426(0.169)
Orthodox	-12.927(0.349)	-32.321(0.167)	-20.665(0.611)
Child	-50.021(0.019)	-73.305(0.007)	-2.515(0.944)
Amhara	0.734(0.929)	25.566(0.061)	-6.208(0.686)
Gurage	-8.866(0.523)	6.157(0.654)	1.987(0.944)
Sample	444	275	159
R Squared	0.30	0.22	0.31
Adjusted R Squared	0.28	0.17	0.23
F-Statistic	10.52	4.22	3.72
Prob Value	0.0000	0.0000	0.00001

Note: The figures in parentheses are probability values. All results are generated using a software of limited dependent variable models, Limdep Version 7.0.

The result is consistent with a study made in Cote d'Ivoire (Glewwe 1991) and inconsistent to the finding of a study made for Mauritania (Coulombe and McKay 1996). It is not clear whether the result reflects the fact that poor households are less creditworthy, or that non-poor households are not poor because they did not take out loans. Generally the result should not imply that credit for the urban poor is not essential to improve living standards. Group lending for self-help groups and loans granted to set up micro-enterprises are essential channels of assistance to the majority of poor people in the developing world. For wage-employed households, marriage has a negative impact on welfare while it has a weak positive impact on the welfare of self-employed and unemployed households. In all groups, ownership of dwellings has a positive impact on standard of living. Owning a house may give households the chance to rent it out to somebody else and get some money to live on. Most households do this in the capital, especially for migrants, but often at a very low monthly rent. The standard of living that we are talking about can be very low and the positive impact of owning the dwelling unit might be a slight improvement from this very low level of living standard. Being a Muslim is related to higher welfare except in the case of self-employed households, which is statistically insignificant. For all groups of households whose head is an orthodox Christian have lower living standards. This is in line with expectations. Consistent with all regressions, dependency has a negative impact on household welfare. For wage employed and self-employed households, having a head from the Amhara ethnic group has a positive impact on welfare but a negative impact for unemployed households. If the head is a Gurage, this has a positive welfare impact on self-employed and unemployed households and a negative impact on wage employed households. The Gurages are often engaged in small and large scale trading and are rarely engaged in wage employment.

6. RECOMMENDATIONS

Based on the above discussion of the regression results, the following major and priority policy areas have been recommended. The recommendations should not be considered as conclusive and the reader should recognize that they emerge from a single case study based only on Addis Ababa. They are context sensitive.

Education seems a key factor throughout in this study in affecting the living standards of households. Increasing enrollment at the primary level can be an area of priority. Ethiopia's enrollment ratio is one of the lowest in the world. The costs of expanding the provision of education and restoring quality in the educational sector are considerable. Improving quality and expanding services for the growing population of Ethiopia would remain in the hands of the government. Investment in education is generally recognized to be essential for long-term economic and social development (Mulat 1997). According to our results, households who have at least primary schooling are more likely to be self-employed if not wage-employed. Emphasis on improving the content of the curriculum may bring a substantial benefit.

It is more appropriate and beneficial if it focuses more on topics with substantial practical orientation. In the era of adjustment, the movement from formal to informal sector of employment is common (Pramila *et al.*; 1998) and education can be a good mechanism to enable households better survivors in the informal sector. Some individuals even with good higher education background could not be able to do nothing more than the office routine which can be mastered by anyone. They lack the practical aspect of educational training that enables one to be creative and engage oneself in self-supporting activities. So the content of the curriculum is crucial and need to be revised in light of current labor market demands.

In Ethiopia, like in many other developing nations, well-developed pensions, public transfers and social assistance (safety net) schemes are lacking. The population instead has to rely on traditional practices. We have seen that the probability of being poor has not been reduced due to the existence of transfers among households in the sample. This is often due to the fact that it is the poor who make the transfers to/from the poor. In addition, pensioners are relatively poorer than other groups of society. This requires increased government responsibility in providing some social security (e.g. increased pension payments in line with rising inflation rates, new social benefit schemes. .etc.). Providing social assistance by the government has benefits beyond improving household welfare. For instance, the absence of any meaningful social security system in the country is one of the most responsible factors for high fertility rates because parents do not have any support in old age and they resort to the decision of having more children for old-age insurance purposes. Therefore, it is possible to change the attitude of households towards having large families by improving the social security schemes that are in place now.

Family composition and size are important variables in the analysis of poverty in a country such as Ethiopia, which is the second most populated nation in Sub-Saharan Africa. The regression results reaffirm their importance and the need for appropriate attention and urgent action by the government to deal with them. A combination of policy measures (e.g. education and population policies together) can have a series of positive results. Educating mothers can reduce fertility and hence family size, which will lead to better living standards. Thus, more education means not only more employment opportunities but also it means limited family size and better welfare.

Food shortage is a common problem in Ethiopia and all households surveyed with prior food shortage experience have a higher probability of being poor. Thus, the government can reduce the incidence of poverty in the nation by ensuring food access to households. For urban households this can be achieved by providing food at subsidized prices especially by focusing on food items that are commonly consumed by the poor.

Poverty in Addis is to some extent a result of rural-urban migration. Most migrants come to Addis in search of a better life. All those who migrate to the city do not have better living conditions and some even are worse off by making the decision to leave

their original place of residence. The government can reduce the extent of the influx of migrants by creating similar facilities and living opportunities in other parts of the country. Lip-service to all these policy recommendations is futile and self-defeating. What matters is their implementation for which the government has to commit itself in no time.

CONCLUSION

The following list briefly summarises the study.

A.) Three different approaches (OLS, Probit, Multinomial logit and selectivity corrected OLS) are used to model poverty and its causes in urban Ethiopia. All the approaches were previously used by different authors for two countries in different times. For Cote d'Ivoire, Glewwe (1991) has estimated a reduced model (OLS) to derive estimates of household welfare, and for Mauritania, Coulombe and McKay have estimated a probit and OLS models in 1993 to examine the causes of poverty and a multinomial selection logit model in 1996.

All the results (with few exceptions) that are generated in this study using the approaches are consistent and hence the results obtained can be considered as credible. The multinomial logit model is preferred to the other two because it dissaggregates households into different groupings instead of considering them as similar. And based on that socio economic choice, the determinants of the standard of living are identified. The OLS focuses both on the poor and the non-poor and in some way similar with the selectivity corrected OLS. But if the focus is only to examine the welfare of only the poor, the probit is better.

Instead of comparing the pros and cons of the approaches, an interesting result emerges which is the consistency of most of the results under the different approaches. It seems that methodological differences do not lead to significantly different conclusions. The results of the study are consistent with a similar study (with a different methodology) for urban Ethiopia (Mekonen 1997).

B.) Education matters a lot for the welfare of households in Addis Ababa. Households with better level of education are relatively richer. But this does not mean that all economic heads with better income have better education.
C.) Urban poverty is a serious problem in Ethiopia and need to be treated separately since it has unique features.
D.) Female-headedness is not necessarily related to lower standards of living.
E.) Married households are not necessarily better off than divorced, separated and widowed households.
F.) Food shortage significantly contributes to lower household welfare.
G.) Unemployment and poverty are positively correlated in Addis Ababa.
H.) Credit access is negatively correlated with living standards.

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ANNEX

A. Poverty and Decompositon Indices

The discussion of the P_α measures is based on the formula described below. They are computed for the poverty line defined in this study. These measures are the head count index (P_0), the poverty gap index (P_1) and a measure of poverty intensity (P_2). As discussed in the text, two aspects are of interest: incidence and the depth of poverty. The former is conveniently summarised as the proportion of households in the populations of interest who are poor, and,the latter by the mean proportion by which the welfare level of the poor falls short of the poverty line. Both of these may be derived as special cases of the widely used P_α indices of poverty proposed by Foster, Greer and Thorbecke (1984) and defined as follows;

$$P_\alpha = 1/n \sum_{i=1}^{q} (z - y_i/z)^\alpha .$$

where
n = the total number of households
q = the number of households identified as poor
z = the poverty line
y_i = the standard of living measure of the household identified as poor.
α = a non-negative parameter reflecting the relative weight given to the poorest among the poor.

Individuals have been ranked from the poorest (i = 1) to the richest (i = n). In the special case in which α = 0, the index reduces to a measure of the incidence of poverty;

$$P_0 = q/n$$

This index takes into account the number of poor people, but not the depth of their poverty. In the case in which α =1, the index may be written as follows;

$$P_1 = q/n * Z - \mu_p/Z$$

where μ_p is the mean income of the poor.

The index P_1 is thus the product of the index P_0 and a measure of the average amount by which poor households fall below the poverty line; in other words, P_1 takes account of both the incidence and the depth of poverty. It is not, however, sensitive to a mean preserving redistribution among the poor. For higher values of α,

increased weight is placed on the poorest of the poor; the P_2 index, for example, takes account not only of the incidence and depth of poverty, but also of the distribution among the poor.

Apart from their ability to capture the different dimensions of poverty, another useful feature of the P_α class of indices is their property of decomposability. This means that, if the population can be divided into m mutually exclusive and exhaustive subgroups (as it has been done here), then the value of the index for the population as a whole can be written as the weighted sum of the values of the poverty indices relating to the subgroups ($P_{\alpha j}$, where j = 1,..., m), where the weights are the population shares of the subgroups (X_j);

$$P_\alpha = \sum_{j=1}^{m} X_j P_{\alpha j}$$

Given this decomposition, the contribution of group j to national poverty or total poverty in a particular region/city can be calculated as

$$C_j = X_j P_{\alpha j} / P_\alpha$$

In this study, the contribution of each of the socio-economic groups to the poverty in Addis Ababa is examined.

B. Adult Equivalent Scales

To arrive at the per capita figures of the living standards measure, we use household size. The size of the household is defined in adult equivalents. Because, children consume less than adults, they are given less weight in the adjusted measure of household size. We need to note also the differences in consumption among the sexes. There is no any scale developed for Ethiopia. Calculation of Adult Equivalent Scales (AES) for each household is cumbersome and it is not an ideal alternative. Therefore, I have used scales used by a study in Ethiopia in 1997 with some modifications. The scale is more disaggregated and takes into account the differences in consumption between males and females. I have modified the scales since some of the original scales seem unreasonable. Initially equal weights were given to a baby less than 1 year old and to a 6-year-old child. I have, then disaggregated the lower scales into three groups based on a scale used in a study for Uganda following Ravallion and Bidani (1994).

Age	Male	Female
<1 year	0.25	0.25
1-4 years	0.40	0.40
5-6	0.56	0.56
7-8	0.64	0.64
9-10	0.76	0.76
11-12	0.80	0.88
13-14	1.00	1.00
15-18	1.2	1.00
19-59	1.0	0.88
>60	0.88	0.72

C. The Socioeconomic Classification

It is important to know households or group of households which are experiencing poverty and more (or less) likely to suffer from it. It is often assumed that risk of poverty is related to class status such as working (wage or non-wage employment) or non- working...etc. Initially the idea was to have four groups of households but the number of groups was eventually reduced to three because of small sample sizes. Using the source of income of households as an indicator, the following three socio-economics groups are identified;

1. Wage-employed Households

This group consists of households (445) that obtain wage/salary from employment in the public and private sectors, casual work, international organizations, and producer and/or service cooperatives.

Few people are employed in the private sector which is believed to be well paying. Next to the public sector, casual work is an important source of wage income for households. This fact is important and need to be recognized when we analyze the regression results on the standard of living of wage employed households. More dependence on casual employment, for instance, implies more dependence on irregular income source which makes households more likely to be poor.

A rough inspection of the data showed that wage employment in the private sector is not accompanied by higher wages despite expectations. In most of the cases, the wages are similar or even less than the ones in the public sector employment except in some cases. The number of households is not as large as those employed in the public sector employment. Therefore, comparison is not possible and the idea of splitting the wage-employed households into two distinct socio-economic groups, viz. those employed in the public and the private sector is abandoned.

2. Self-employed Households

These households (274) generate their income from various activities such as small businesses (run by individuals as employers or own account workers), female and children business activity. 294 individuals own small businesses; 241 individuals are engaged in female business activity and only 52 children (the data which I very much suspect to be underreported) contribute to household income by participating in children business activity.

Almost all of the households owning businesses have participated in commercial and service giving activities. For instance, 49 individuals own shops; 43 undertake textile preparing/manufacturing; and 39 participate in food preparing. Other activities in order of importance include handicrafts (non-wood)-37; running a restaurant/bar/hotel-30; ***gullit*** (a local term which refers to an open and small market-place where small items such as vegetables, fruits and roasted grain is sold)-28; and transport-25.

Female-headed households are more likely to participate in female business activity than other types of self-employment activities. Those activities are survival mechanisms for most of Ethiopian women. Those who are divorced and who became female heads for various reasons invest in small household business activities to live on the insignificant profit that may accrue. The most important female business activities, in order of importance, are:

-making/selling ***tella/areqi*** (local alcoholic drinks)
-making/selling ***injera/dabo/kolo***(local names for a traditional pancake which is a staple food all over the country except few areas/bread/roasted grain)
-selling other food items
-making/selling handicraft/pottery
-selling vegetables/fruits
-collecting/selling firewood/dung-cakes

Households which are engaged in any farming or any agricultural activity (e.g. households that own livestock/poultry) are included within self-employed households. These are insignificant since we are looking at the most urbanized center of Ethiopia;- Addis Ababa (the capital). This activity is more common in the other urban centers.

3. Unemployed Households

This is a residual group and an aggregate of different types of households. This group of households (159) consists of households with one or more individuals receiving different types of remittance (domestic and/or abroad), gifts (in cash and/or in-kind), food aid, inheritance and pension and the economically inactive (children,

the elderly, handicapped....etc.) and those who are economically active but who are unable to find any employment.

Generally, we can see how the above classification involves a high degree of aggregation. This might hide some important facts about the standard of living of some households or individuals that we could have gathered otherwise. For instance, the case of separate treatment of households receiving remittance and pension from unemployed households, or the separate treatment of inactive households from those with economically active family members could have been more insightful. Even if the data allows it we suffer from small sample size if we use a disaggregaed classification. So for purposes of reasonable analysis given the data, the above classifications are the ones to be used in this study.

The above classification is based on income source; that is the highest income earning activity determines the socio-economic group of the household. The socio-economic classification picks only the source with the greatest contributions and neglects other income sources. In reality, for some households, income sources are diversified and are very limited for some others. To capture these differences, different dummy variables such as RETRENCH, PENSION, HHFBA, AND PUBLIC are defined (see variable definition below).

D. A Note on the Econometric Estimation

The data is stored in SPSS/PC+ form and the estimation using limdep could not be carried out without converting the data files into an earlier version of excel files which is acceptable to limdep. The OLS regression results in chapter eight are generated using SPSS 7.5 for windows while the probit and the multinomial logit models are estimated using LIMDEP Version 7.0.

Both results of probit and logit models are identical in the sense that in both models the least square results are used for the starting values. After estimating the logit model, the marginal effects had to be calculated since we are interested to examine whether the regressors chosen for this purpose have a positive or negative influence on being in one of the socio-economic groups we have defined. Theoretically, the model has no fit and there should be no significant coefficients.

To calculate the marginal effects, a programme listed on pages 479 and 480 of the manual for LIMDEP Version 6.0 was used with some modifications such as setting up the NAMELIST for X and the CREATE for the dependent variable at the top of the routine.

The second set of regressions performed using LIMDEP Version 7.0 include the estimation of the selectivity corrected OLS after estimating the multinomial logit selection model. Essentially, the estimation is made at two stages. Unlike the probit

estimation technique, λ (the selectivity term) is not computed using $\beta'X$. Rather we use a transformed variable. The model command for the two-stage estimation was taken from pages 621 and 622 of the manual for LIMDEP Version 6.0. The command requires the user to do programming to define subvectors of α, to compute the predicted probabilities for the logit model, to make the sample selection, compute lambda and delta and to define the regressor vector for the primary equation. After a failure of a number of attempts the results which are reported and discussed in chapter eight were obtained.

E. Definition of Variables

Based on the available data the following dependent variables and regressors were identified. Only variables that are believed to be more influential as determinants of standard of living and those that can be obtained from the data are defined.

Dependent Variable(s)

PCT= Total household expenditure per adult equivalent per month.
PCF= Food expenditure per adult equivalent per month.

Education Variables (defined for the economic head)

Noed= 1 if the head has never attended any schooling; 0 otherwise.

Tred= 1 if the head has attended traditional/religious school only; 0 otherwise.
Pred= 1 if the head completed primary school; 0 otherwise.
Sced= 1 if the head completed secondary school; 0 otherwise
Tered= 1 if the head completed technical/vocational training; 0 otherwise.
Ter2ed= 1 if head completed college or university level training; 0 otherwise

Other Characteristics of the Head

age= in years
orthodox=1 if head is orthodox Christian; 0 otherwise
other=1 if head is other Christian (Protestant, catholic...etc.); 0 otherwise
muslim=1 if head is Muslim; 0 otherwise
Head= 1 if head is a male; 0 otherwise
married= 1 if the head is married; 0 otherwise
Amhara= 1 if the head is Amhara; 0 otherwise
Oromo= 1 if the head is Oromo; 0 otherwise
Tigre= 1 if the head is Tigre; 0 otherwise
Gurage= 1 if the head is Gurage; 0 otherwise
Health= 1 if the head suffers any illness; 0 otherwise

Demographic Variables

Size= Number of household members
% child= proportion of household members aged less than 15 years
% old= proportion of household members aged more than 65 years
migrant= 1 if household migrated during the last ten years, 0 otherwise

Other Variables that Apply to all the Socio-economic Groups

credit=1 if the household takes credit; 0 otherwise
remit=1 if the household gets remittance and/or any other support; 0 otherwise
gift= 1 if the household gives out remittance and/or other support; 0 otherwise
pension= 1 if the household gets pension income; 0 otherwise
farm= 1 if the household is engaged in any farming activity or owns any livestock/poultry; 0 otherwise
retrench= 1 if anybody in the household is retrenched; 0 otherwise
Tenancy= 1 if the household owns a house; 0 otherwise
Vulner = 1 if the household ever experienced food shortage; 0 otherwise.

Variables Specific to Wage Employees

public=1 if the household head is employed in the public sector; 0 otherwise

Variables Specific to Self-employed Households

HHFBA=1 if the household is engaged in household female business activity; 0 otherwise

EXPORT EARNINGS INSTABILITY OF ACP COUNTRIES : A TIME-SERIES ANALYSIS

Belay Kassa*

Abstract

This paper examines the level of export earnings instabilities of ACP countries (African, Caribbean and Pacific states signatories of the Lomé Convention) ; their evolution through time and across countries. At present, this group comprises of seventy developing countries. This deliberate choice of the sample was done in order to examine whether fluctuations in export earnings of these countries have relatively decreased as envisaged by the STABEX system, of the Lomé Convention, introduced in 1975 by the European Economic Community. The country coverage of previous studies on export earnings instabilities was generally limited and most of the ACP countries have been rather ignored. Therefore, instability indices for merchandise exports were computed for a total of thirty-nine ACP countries over the periods 1970-1979, 1980-1990 and 1970-1990. The results of the study indicate that instability indices vary across countries. Moreover, a comparison of the indices for 1970-1979 and 1980-1990 reveals that for more than half of the countries in the sample (21), there was a reduction on the level of export instability between the two periods whereas for fifteen countries the reverse was true. It was only for three countries that instability indices remained the same between 1970s and 1980s.

1. INTRODUCTION

There is a growing literature that attempts to explain the economic impact of export earnings instabilities on the economies of Less Developed Countries (Coppock 1962 and 1977, Demeocq and Guillaumont 1986, Knudsen and Parnes 1975, MacBean 1966, Love 1987). However, no firm and general conclusion emerges from empirical studies about the effects of export instability on development. There are two types of empirical studies on export earnings instabilities: cross-country studies; and specific country studies

The former analyses export earning instability (its causes and/or consequences)

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among several countries and the latter focus on individual country studies. In general, cross-country studies do not take into account the specific conditions in each country and their results do not provide relevant information for a particular country included in the sample. Indeed, effects of export instability depend on economic policy reactions, which differ among countries; cross-country studies would then be inadequate to give economic and policy recommendations for any country under consideration[1]. Despite these anomalies cross-country studies helped to produce empirical evidence on the relationships between structural economic variables and export instability. They were also quite useful in revealing variations, in export instability levels, among different groups of countries and commodities. In the same line, Demeocq and Guillaumont (1986:2) argue that cross-section analysis may evidence some effects of export instability distributed over time even more easily than a specific country time-series analysis. However, specific country studies have the advantage of focusing on the specific reaction of countries to instability. This study was carried out on country by country basis. The specific objectives of this paper are: to compute export earnings instability indices for each country in the sample and to compare them across countries and sub-periods; and to investigate whether there are relationships between higher levels of export earnings instability and degrees of reliance on few export commodities.

The rest of the paper is organised in three sections. Section 1 deals with the methodology used in the study where the study period, countries included in the sample, definition of terms and instability measures are discussed. Section 2, presents the results of the study including some comments on the statistical results. The final section summarises the main empirical findings and draws appropriate conclusions.

2. METHODOLOGY

1.1. Data Coverage

Almost all studies on export earnings instability deal with periods ending before 1980; they, therefore, do not take into account the instabilities of the 1980s. This study covered 20 years, from 1970 to 1990. For most of the ACP countries consistent and reliable data on merchandise export values in US dollars are available only for the period beginning in 1970. Therefore, the absence of data on merchandise export earnings for many of the ACP countries, for the years before this period, rules out the possibility of extending the study period before 1970. As data on services exports were not available on consistent basis for many of the countries in the sample, in this study, merchandise export values were used to compute the instability indices[2].

With regard to the methodological approach, the analysis of export instability would be first made for the whole period (1970-1990) and then repeated by splitting it into two sub-periods (1970-1979 and 1980-1990). The two sub-periods are associated

with recognised phases of world economic activity. The early 1970s mark the beginning of unexpected and unprecedented large swings in the commodity prices including two oil crises. Although the latter produced a new group of rich developing countries, the non-oil exporting developing countries were severely affected by their mounting oil import bills and faced balance of payments problems. As the seventies proceeded, the oil crises and the glut of petrodollars resulted in massive commercial loans by financial institutions to many of the ACP countries. With regard to the situations in the 1980s, many ACP countries had been hard hit with the collapse of commodity prices, deterioration of their terms of trade and the debt servicing difficulties. These conditions had forced them to implement economic structural adjustment programs which, in turn, were believed to bring about substantial reduction in imports, devaluation of the national currencies and expansion of exports.

The analysis of the level of instability through different sub-periods helps, therefore, to examine any possible changes in the stability of foreign exchange earnings of the countries in the sample because for many of these countries export earnings are their only source of foreign currency. The foregoing discussions make it clear that the effects of export instability on the economies of the countries in the sample would be different in the 1970s and 1980s because of the higher possibility of resorting to foreign financing during the 1970s.

1.2. Country Sample

Data availability constrained the sample size. Due to lack of sufficient information on export earnings of thirty-one ACP countries over the period 1970-1990, they could not be included in the study. Thus, instability indices were estimated for only thirty-nine ACP countries[3]. The data used are derived from the International Monetary Fund (IMF) trade statistics for they are the sole sources which provide data both on the total export earnings and the receipts from major export commodities denominated in US dollars.

1.3. Definition and Measure of Instability

Instability has been defined in many ways. It is generally accepted now that instability must be defined relative to a 'normal' value. This approach involves equating trend values with the 'normal' or anticipated path of earnings and regarding deviations from trends as comprising instability (Love 1990:325).

At present, there is a consensus among researchers (Cuddy and Della Valle 1978, Erb and Schiavo-Campo 1969, Glezakos 1973 and 1983, Kenen and Voivodas 1972, Leith 1970, Love 1985, Massell 1964 and 1970, MacBean 1966, Tan 1983, Wong 1986, etc.) to eliminate any trend element from a time series in estimating instability. The removal of the trend is required to avoid interpreting consistent annual increase or decrease as indicating instability. Otherwise, instability, and therefore instability index, of a series with a rapid or even a constant growth rate would tend to be biased

upward (Aggarwal 1982, Cuddy and Della Valle 1978). In fact, for the purpose of measuring instability deviations both above and below the trend line should be taken into account. One can either ignore the difference in signs, and take the average of all the percentage deviations in absolute values or square all the deviations first and then take the square roots of the average of the squared percentage deviations in producing an index of instability.

As to the instability indices used in the previous studies, they generally differ from one study to another[4]. The most frequently used instability indices are: Coppock's log-variance measure; Normalised standard error measure; Semi-log standard error measure; Autoregressive moving average measure; Five-year moving average measure; and Average absolute deviation from the trend[5].

For this study, the average absolute deviation instability index is used. This index is defined as the average of annual percentage differences between observed and calculated (trend) values, disregarding the signs of the differences and expressing them as percentages of the trend values[6]. Unlike most of the indices, this one does not impose *a priori* the same trend form for the export series of all the countries in the sample (Demeocq and Guillaumont 1983:8).[7] This index allows, therefore, to use the best trend (linear or exponential) for each country in calculating instability indices. The absolute value formulation is also reported to modify the effects of outliers while squaring accentuates their influence (FAO 1987:70). Moreover, the average absolute deviation instability index takes into account the relative importance of the yearly changes in export proceeds because it measures instability for any one year as a prcentage of the trend values in that year. Glezakos (1973:672) noted that this index is independent of the size of the trend. This index is frequently used by UNCTAD in its Handbook of International Trade and Development Statistics.

3. STATISTICAL RESULTS

In fitting two-trend forms (linear and exponential) to the export series, the exponential trend provided by far the best fit for the majority of the countries in the sample. Thus, the linear relationship between the logarithms of export earnings and time was significant at the 1% level for ten of the thirty-nine counties in the sample; and at the 5% level for seven of the countries. The relationship was not statistically significant for Ghana, Madagascar, Nigeria, Sierra Leone, Somalia, Sudan, Tanzania and Zambia.

For fourteen countries, Burkina Faso, Camercon, Central African Republic, Côte d'Ivoire, Ethiopia, Gambia, Haiti, Malawi, Mali, Papua New Guinea, Senegal, Togo, Uganda, and Zaïre, the linear trend form provided by far the best fit. The linear relationship was significant at the 1% level for Burkina Faso, Cameroon, Central African Republic, Côte d'Ivoire, Ethiopia, Gambia, Haiti, Malawi, Papua New Guinea, and Senegal, and this relationship was not significant for Uganda.

A point of interest regarding the econometric results reported in Table 1 is that except for Benin, Gambia, Malawi, Tonga, Uganda and Zaïre where the estimation by the method of Ordinary Least Squares (OLS) did not show autocorrelation of the error terms, in all other cases the Prais-Winsten transformation was applied in order to calculate the respective trends and coefficients.

Table 1 shows that in fitting two-trend forms to the export series of different countries, in nine of the thirty-nine countries in the sample both the exponential and the linear forms, particularly the latter, did not fit the data well. For a more formal verification of the appropriate trend which may 'fit best' to the data, it was found logical to compare, for each country, the relatively better trend indicated in Table 1 with curves for actual export earnings and the one calculated using five years moving average method. A careful visual inspection of the different curves for the nine countries indicates that the five-year moving average trend form provides by far the 'best fit'. It was noted, however, that in the process of averaging, four terms were lost (two in the beginning and two in the end). Moreover, in using moving averages one should be alert to the fact that the length of the chosen interval influences the degree of smoothing, and where it is small, the moving average tends to absorb some of the short-term fluctuations possibly causing an underestimation of instability (Aggarwal 1982:63, Kenen and Voivodas 1972:793, Love 1987:6, Stein 1977:280). Love (1987:6) has also noted that the moving average is more strongly influenced by outlying observations than linear and exponential trends. As the moving average method has some anomalies in measuring instability and as one of the objectives of this study was to compare the degree of instability in different countries, it was imperative to fit a trend of the same form for export series of the countries in the sample, albeit, of course, that which best fitted the data for most of them. For the computation of the instability indices, it is in practice necessary to keep uniformity in the trend estimation methods. Hence the trend forms shown in Table 1 were used.

Using the trend forms which provided the best fit for most of the countries considered (Table 1), the instability indices of ACP countries were calculated for the 1970-1990 period and the results are set out in Table 2.

Examination of the instability indices in Table 2 indicates that the countries which have experienced a higher degree of instability over the period 1970-1990 were Nigeria, Rwanda and Western Samoa, followed by Congo, Benin, Haiti, Somalia, Tonga, Niger and Sudan.

In fact, crude oil was the major export product of Nigeria and its share of total export earnings in 1970-1990 was nearly 90%. In the case of Rwanda, coffee constituted almost 65% of the total export revenues. As for Western Samoa, coconut oil contributed about 40% of its total export earnings.

Table 1. Results of Linear Regression between Logarithms of Export Earnings and Time : 1970-1990

Country	Correlation Coefficient	T-VALUE	F-VALUE	Durbin Watson	Level of Significance
Barbados	0.517	2.57	6.59	1.33	**
Benin	0.856	7.51	56.35	1.87	***
Burkina Faso (LIN)	0.884	8.00	64.07	1.59	***
Cameroon (LIN) (a)	0.917	9.18	94.86	1.88	***
Central African Republic (LIN)	0.774	5.18	26.84	1.98	***
Chad	0.713	4.31	18.60	1.97	***
Congo	0.747	4.77	22.77	1.36	***
Côte d'Ivoire (LIN)	0.705	4.21	17.76	1.58	***
Ethiopia (LIN)	0.703	4.19	17.53	1.65	***
Fiji	0.789	5.45	29.71	1.60	***
Gabon	0.582	3.04	9.21	1.34	***
Gambia (LIN)	0.906	9.35	87.40	1.60	***
Ghana	0.342	1.54	2.38	1.40	+
Haiti (LIN)	0.596	3.16	9.96	2.05	***
Jamaica	0.532	2.66	7.10	1.55	**
Kenya	0.559	2.86	8.20	1.94	***
Madagascar	0.428	2.01	4.03	1.80	+
Malawi (LIN)	0.926	10.70	114.42	1.33	***
Mali (LIN)	0.949	12.74	162.39	1.56	***
Mauritius	0.841	6.60	43.57	1.81	***
Mauritania	0.901	8.83	77.92	1.73	***
Niger	0.540	2.72	7.40	1.31	**
Nigeria	0.439	2.08	4.31	1.68	+
Papua New Guinea (LIN)	0.867	7.37	54.33	1.46	***
Dominican Republic	0.499	2.44	5.96	1.52	**
Rwanda	0.499	2.44	5.97	1.92	**
Western Samoa	0.524	2.61	6.83	1.71	**
Senegal (LIN)	0.824	6.16	37.93	1.97	***
Sierra Leone	0.135	0.57	0.33	1.59	+
Somalia	0.241	1.06	0.24	1.59	+
Sudan	0.064	0.27	0.07	1.66	+
Suriname	0.582	3.03	9.21	1.82	***
Tanzania	0.256	1.13	1.27	1.68	+
Togo (LIN)	0.805	5.75	33.01	1.94	***
Tonga	0.751	4.96	24.57	1.68	***
Trinidad & Tobago	0.548	2.78	7.72	1.39	**
Uganda (LIN)	0.073	0.32	0.10	1.34	+
Zaïre (LIN)	0.851	7.06	49.78	1.42	***
Zambia	0.187	0.81	0.65	1.72	+

Source: Calculated from data in IMF, International Financial Statistics, various issues.
LIN in parentheses denotes that the relationship between the two variables is linear.
+ Refers to cases where the trend estimates were not statistically acceptable ;
*** the estimated relationship is statistically significant at 1 % level or better and
** the estimated relationship is statistically significant at 5 % level.
(a) The period covered only 1970-1988.

Table 2. Export Earnings Instability Indices for ACP Countries: 1970-1990 (in percentage)

COUNTRY	INDEX (a)	COUNTRY	INDEX (a)
Nigeria	32	Senegal	17
Rwanda	28	Togo	17
Western Samoa	28	Ethiopia	15
Congo	24	Mali	15
Benin	23	Zaïre	15
Haiti	23	Burkina Faso	14
Somalia	23	Cameroon	14
Tonga	23	Côte d'Ivoire	14
Niger	22	Ghana	14
Sudan	22	Fiji	14
Trinidad & Tobago	20	Jamaica	14
Barbados	19	Kenya	14
Gabon	19	Sierra Leone	14
Mauritius	19	Malawi	13
Uganda	19	Surinam	13
Dominican Republic	19	Madagascar	11
Zambia	19	Mauritania	11
Papua New Guinea	18	Tanzania	11
Chad	18	Central African Rep.	
Gambia	17		

a- The indices were computed after correcting for serial correlation using Prais-Winsten method when appropriate and the countries are arranged in descending order of export earnings instability index.

Source: These indices were calculated from data in IMF, International Financial Statistics, various issues.

The other countries with higher export instability levels derive their foreign exchange earnings from exports of one or two commodities. For instance, Congo, Benin, Somalia and Tonga received more than 50 %, on the average, of their total export earnings from oil, palm products, live animals and coconut oil, respectively. Coffee accounted for almost 30 % of the total export revenues of Haiti. As for Niger, Uranium was the main export item and it accounted for 65% of its total export revenues and Sudan received a considerable part of its export incomes from cotton. It is obvious that the prices of most of these commodities have displayed excessive instability in the 1970s and 1980s.

Countries with low degrees of instability in Table 2 are equally dependent, for their foreign exchange earnings, on few primary commodities. This situation may lead to question the relationship between export earnings instability and the degree of commodity concentration. However, it is noteworthy that the low instability levels in some countries can be explained by the fact that export earnings from all commodities may not fluctuate at the same time and in the same direction. Thus, earning instabilities from some commodities might have been offset by the relative stability of proceeds from other commodities. It goes without saying that lower

instability level does not imply that export earnings instabilities were not harmful for the economic performance of the countries under consideration.

It is also important to note that the countries with high degrees of export instability in 1970-1990 were not the main beneficiaries of the STABEX transfers. This is because STABEX is a commodity specific compensatory financing system, in principle limited to trade flows of mainly agricultural commodities from ACP countries to the European Union market. Hence, transfers are made irrespective of the evolution of total export earnings of the countries. In other words, STABEX transfers can be made even when there is an increase in the total export revenues. In reality, an examination of STABEX operations over the period 1975-1990 shows that 527 transfers, amounting to 2.9 billion ECU, were made to fifty-three ACP countries for shortfalls in earnings from twenty-six commodities. The six main beneficiaries–Côte d'Ivoire, Cameroon, Senegal, Ethiopia, Sudan, Papua New Guinea–received about 55% of total transfers[8].

The measure of instability over a long period can overshadow the nature and degree of fluctuations in the short and medium terms. Moreover, the index computed for the entire period (1970-1990) does not take into account the change in the trend form or a break in the trend which may take place over the study period (Binkley 1987:406, Demeocq and Guillaumont 1985:62, MacBean 1966:365). It was worth, therefore, dividing the study period into different sub-periods in order to understand the nature of export earnings fluctuations in each country and their evolution over time. Towards this end, the trend values and the corresponding instability indices were estimated, for each country in the sample, over the periods 1970-1979 and 1980-1990[9]. As already noted, the "best fit" trend form for each country was selected on the basis of comparison of the coefficients of determination derived from regressions of export earnings against the exponential and linear trend forms[10].

For each Country in the sample, the trend form which was used to compute the instability index is specified (LIN for linear and EXP for exponential).

Table 3 shows that for most of the countries in the sample (21 Countries) export earnings instability declined between 1970-1979 and 1980-1990. For fifteen other countries of the sample, namely Barbados, Benin, Burkina Faso, Chad, Ghana, Madagascar, Malawi, Mali, Niger, Uganda, Sierra Leone, Somalia, Sudan, Surinam and Tanzania, instability increased between the two sub-periods. The instability indices of Ethiopia, Fiji and Western Samoa remained more or less stable over the two sub-periods.

Moreover, for nineteen countries of the sample, namely Barbados, Cameroon, Côte d'Ivoire, Dominican Republic, Ethiopia, Fiji, Kenya, Madagascar, Malawi, Mali, Niger, Rwanda, Somalia, Sudan, Surinam, Togo, Tonga, Uganda and Western Samoa the instability indices computed over the entire period 1970-1990 were greater than the ones computed for each of the two sub-periods. Whereas for twenty other countries,

namely Benin, Burkina Faso, Central African Republic, Chad, Congo, Ghana, Gabon, Gambia, Haiti, Jamaica, Mauritius, Mauritania, Nigeria, Papua New Guinea, Senegal, Sierra Leone, Tanzania, Trinidad & Tobago, Zaïre and Zambia the instability indices for the period 1970-1990 were less than or equal to the indices for the sub-periods.

Table 3. Export Earnings Instability Indices of ACP Countries : 1970 - 1979 and 1980-1990 (in percentage) [a]

	Indices			Indices	
Country	1970-1979	1980-1990	Country	1970-1979	1980-1990
Congo	50 LIN	13 LIN	Burkina Faso	12 LIN	17 LIN
Nigeria	43 LIN	28 LIN	Barbados	11 EXP	17 EXP
Trinidad and & Tobago	34 LIN	11 LIN	Central African Rep.	11 EXP	6 EXP
Gabon	34 LIN	16 EXP	Niger	11 EXP	13 LIN
Haiti	26 EXP	11 LIN	Uganda	11 EXP	17 EXP
Senegal	25 EXP	7 EXP	Sudan	11 EXP	19 LIN
Mauritius	21 EXP	20 LIN	Côte d'Ivoire	10 EXP	8 LIN
Gambia	20 EXP	11 EXP	Ethiopia	10 LIN	10 EXP
Papua New Guinea	20 LIN	10 LIN	Ghana	10 LIN	16 LIN
Rwanda	20 EXP	11 EXP	Cameroon	9 EXP	8 EXP
Zaire	20 EXP	9 EXP	Kenya	9 EXP	8 LIN
Zambia	20 EXP	16 LIN	Sierra Leone	9 EXP	14 LIN
Tonga	19 EXP	17 LIN	Somalia	9 LIN	20 LIN
Western Samoa	18 EXP	18 EXP	Mali	8 EXP	10 EXP
Togo	16 EXP	12 LIN	Benin	6 LIN	33 EXP
Dominican Republic	15 LIN	12 LIN	Madagascar	6 EXP	7 LIN
Jamaica	14 EXP	13 EXP	Malawi	6 EXP	12 LIN
Mauritania	14 EXP	7 EXP	Tanzania	6 LIN	11 LIN
Chad	14 EXP	18 EXP	Surinam	4 EXP	11 EXP
Fiji	13 EXP	13 EXP			

(a) The indices are computed after correcting for autocorrelation when appropriate.
Source: Computed from data in IMF, International Financial Statistics, various issues.

A review of the literature on export earnings instability reveals that there is no as such a threshold instability index below which export earnings fluctuations are not harmful to the economy of a given country. This fact makes it very difficult to regroup the thirty-nine countries in the sample into different categories according to the degree and period of instability.

Inspection of the instability indices in the period 1970-1979 indicates that the first four countries (with higher degrees of instability) are petroleum exporters and they had experienced considerable fluctuations of their export earnings as the result of the

oil price 'shocks' in the 1970s. Moreover, it is interesting to note that in these countries crude oil accounted for the lion's share of their foreign exchange earnings and increase (decrease) of oil prices had a considerable impact on the total export earnings of the countries concerned.

Over the study period, crude oil accounted for more than half of the export receipts of Congo and these receipts were multiplied by 2.8 and 1.5 between 1973 and 1974 and 1978 and 1979, respectively[11]. Crude oil was also the predominant source of Gabon's export earnings accounting for more than 70% of the total exports which were multiplied by 2.52 and 1.57 between 1973 and 1974 and 1978 and 1979, respectively. In 1970-1990, crude oil's share in Trinidad & Tobago's export revenues was close to 80% and the total export proceeds of this country were respectively 3.04 and 1.3 times higher in 1974 and 1979 than in 1973 and 1978. Nigeria's dependence on crude oil exports is considerable compared to the other three countries. Crude oil provided about 90 percent of the total export earnings and between 1973 and 1974 these receipts were multiplied by 2.5 whereas between 1978 and 1979 they were multiplied by 1.6.

In a nutshell, the above results are in complete agreement with the widely spread conventional view that high degree of dependence on few primary commodities, whose prices are subject to extreme fluctuations, is associated with considerable variations in export earnings.

3.1. Scope and Implications of the Statistical Results

Unlike the cross-country studies where assumptions are made about the relative homogeneity of the countries studied and conclusions are drawn for a group of countries, in this study export instability was analysed at the level of individual ACP countries. It should be noted that export earnings instability of a given country reflects fluctuations in export proceeds, caused by country-specific factors, which call for appropriate policy responses adapted to the circumstances of the country in question.

The results of this study reveal that countries which rely heavily on the exports of few primarily commodities, whose prices are beyond their control, experience higher levels of fluctuations in their export earnings. This does not mean that excessive dependence on export of few primary commodities is the sole explanation for export instability. Other determinants of export instability include: geographical concentration in the export sector; commodity concentration; export market share; domestic consumption ratio; and the proportion of raw materials and food items in the total export receipts, etc. With regard to the results of empirical studies on the relationships between export instability and the above factors, they have been contradictory and non-conclusive. Concerning the effects of export instability, it is said to be harmful to the economies of developing countries, presumably by affecting

negatively, economic growth rate (through its effects on the volume of capital goods to be imported, which is partly a function of stable export earnings), foreign capital inflow, volume of investment, domestic saving rates, government revenue, public expenditures, etc. Like for the causes of export instability, no firm and general conclusion emerges from the literature about the effects of export instability on development[12].

This article does not analyse the sources of export instability nor does it measure its effects on the economies of the countries in the sample. This is an entirely different question and it is not the one addressed in this study. However, it is worth-noting that because of the country-level nature of the study and the inter-country comparison of the findings, any study on the causes and consequences of export instability would call for the utilisation of data extracted from the same source for all countries in the sample. Otherwise, the use of data gleaned from various sources could lead to erroneous conclusions for the quality and reliability of data differ from one source to another. In fact, because of the impossibility of getting data for many countries from the same source on the various factors which contribute to export instability and the economic variables which it affects, empirical studies on the causes and consequences of export instability are in general country-specific as well as few and far between. Moreover, the results are seldom comparable. Although the results of this study shed light on the levels of export instability in the countries studied, further research needs to be undertaken at the level of individual countries so as to examine the causes and consequences of instability.

4. CONCLUSION

This paper has examined the export earnings fluctuations of thirty-nine ACP countries, each of which was heavily dependent on primary product exports, over the period 1970-1990. The statistical results obtained indicate that for more than half of the countries in the sample, export proceeds were more unstable in the 1970s than in the 1980s. This evidence strongly supports, therefore, the conventional view that heavy reliance upon a single commodity for foreign exchange earnings can be troublesome in its destabilising effects on the total export proceeds. It is also clear from Table 3 that during the first sub-period, countries with higher degrees of instability were exporters of crude oil. However, over the second sub-period, the level of instability was equally important for countries exporting oil and non-oil products.

Finally, it is worth-noting that as the objective of this paper was limited to the evaluation of the degrees of export earnings fluctuations, their evolution through time and across countries, the statistical results do not tell much neither about the cause of export instability nor about its effect on economic performance of the countries in the sample.

NOTES

1 On the inconveniences caused by cross-country studies on export earnings instability, see for example Love 1986, Massell 1970.

2 The quasi-totality of the studies on export instability made use of merchandise export data. To the best of the author's knowledge, the only study which analysed the instability of services exports is the one made by Sinclair and Tsegaye (1990). Erb and Schiavo-Campo (1969), Coppock (1977) and Knapman and Schiavo-Campo (1983) have also studied the instability of exports of goods and services. In general, services have not been considered in instability studies on the ground that the types and qualities of services exported show considerable variation from one country to another. Moreover, the geographical destinations of services exports are not reported for many countries.

3 The countries in the sample were: Barbados, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Dominican Republic, Ethiopia, Fiji, Gabon, Gambia, Ghana, Haiti, Jamaica, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Nigeria, Papua New Guinea, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Surinam, Tanzania, Trinidad & Tobago, Togo, Tonga, Uganda, Western Samoa, Zaïre and Zambia.

4 For a detailed discussion of the different instability indices, see Love 1987: 5-12, Demeocq and Guillaumont 1983:8-9.

5 As to the effects of the choice of instability index on the results and conclusions of cross-country studies, we find contradictory reports: some authors (Coppock 1962, Demeocq and Guillaumont 1985, Erb and Schiavo-Campo 1969, Glezakos 1973, Massell 1964) found significant correlation between different instability indices; for other authors (Kenen and Voivodas 1972, Knudsen and Parnes 1975, Love 1990, Lam 1980) the method of measuring export instability does not seem to matter very much; finally, some authors (Glezakos 1983, Glezakos and Nugent 1983, Leith 1970, Sinclair and Tsegaye 1990, Tan 1983) reported that the choice of the instability index has a significant effect on the results of cross-country studies.

6 The Average Absolute Deviation Instability index (AAD) is computed by using the following formula:

$$AAD = \frac{100/n \sum_{i=1}^{n} (X - \hat{X})}{\hat{X}}$$

here:

X and $\hat{X}$ are actual and trend values in period t.

n is the number of years considered in the study.

7 For a description of the inconveniences of a priori choice of the form of the trend, see Tan 1983: 220.

8 For more information on the principal beneficiaries of the STABEX transfers, see Delahousse 1993.

9 The length of the time-series is relatively short. However, it is interesting to note that in previous studies the number of time periods (years) used to estimate the trend which best

fits the time-series data on export earnings varied from one study to another. Coppock (1977:8), for example, argued that there is no theoretical principle to determine the appropriate number of years and suggested that as a rule of thumb, about a decade would seem sensible. In practice, the availability of reliable and consistent data, particularly in earlier studies, did indeed constrain the coverage to around ten years and, while there has been some variation, such a period tended to become the tacit convention (Love, 1987:9).

10 Additional information on the regression results for the two sub-periods is available from the author on request.

11 Figures on the contribution of crude oil to the total export earnings of Congo, Gabon, Nigeria and Trinidad & Tobago were computed from data in IMF, International Financial Statistics, various issues.

12 For a detailed explanation of the consequences of export instability and the results of different empirical studies, see Belay 1994:331-345 and Love 1987:11-37.

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INSTITUTIONS AND ECONOMIC DEVELOPMENT: A SURVEY OF ASPECTS OF THE NEW INSTITUTIONAL ECONOMICS

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ABSTRACT

In recent years, the New Institutional Economics, though yet at its formative stage, has gained currency among some economists and donor agencies like the World Bank. However, its subject matter and its relevance to current issues are little understood by many researchers interested in development problems. This paper presents a survey of the literature and a review of the current state of the New Institutional Economics (NIE) with a focus on its meaning, strengths, weaknesses and current argument about its role and importance in the development process. The paper underlines the importance of the NIE and identifys agenda for future research.

1. INTRODUCTION

The New Institutional Economics (NIE), though yet at its formative stage, has gained wide currency in recent years. Its importance was underlined with the award of the Nobel Prize to two leading institutional economists, Ronald Coase in 1991 and Douglas North in 1993. Currently, an increasing number of economists have shown interest in the NIE, as can be suggested by the volume of publications that are coming out. Non-economists, too, are perhaps interested in the subject because economists have finally come out with a school of thought that would provide a forum for an interdisciplinary discourse on the problems of development.

However, to the extent that the majority of economists and non-economists are concerned, one can argue that the NIE is little understood. Very few professionals appreciate the subject matter and the basic assumptions of this theory. Even the meaning of 'institutions' and why the adjective 'new' is included in the nomenclature of the theory may not be clear to those who want to know more about the subject.

The literature on the NIE, though impressive, is not readily available for a researcher and policy makers who want to acquaint themselves with its essential features.

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Moreover, most of the studies deal with conditions of industrial countries and they have limited relevance to the conditions of developing countries. Those studies which deal with the applications of the NIE to development problems (e.g. Nabli and Nugent 1989; Harriss *et al.*, 1995) are thick books of readings which do not provide a concise review of the various aspects of the NIE. Besides, the NIE is at its formative stage and periodic surveys are required to capture recent developments in the literature.

The purpose of this paper is to undertake a survey of the literature and a review of the current state of the NIE with a focus on its relevance to development problems. It is hoped that this review will improve our understanding of this newly emerging school of thought.

As it is beyond the scope of this paper to consider all aspects the NIE[1], the following fundamental areas have received particular attention. The concept of the term 'institutions' is discussed (section two). This is followed by an exposition of the limitations of mainstream economic theory (section three). The importance and meaning of the NIE is then explained (section four). This is followed by a survey of the literature on the applications of the institutionalist approach to development (section five). The major findings of the study are summarized and concluding remarks provided (section six).

2. INSTITUTIONS: CONCEPTUAL PROBLEMS

The term 'institution' has remained confusing since its emergence in development literatures in the 1950s and 1960s. Its definitions vary widely not only among disciplines but also within them (Blase 1973; Bienkowski 1981) (see Table 1). That is why Blaze (1973) noted that 'while a single, all purpose definition of *institution* would be convenient, it does not exist, and the literature is not mature enough for its formulation at this time'. In a recent paper, a senior economist at the World Bank and in reference to her colleagues at the Bank, notes that 'they are confused by the different definitions used by different scholars of institutions' (Shirley 1997). Nabli and Nugent (1989), who provided the most authoritative work on the applicability of the New Institutional Economics (NIE) note that:

> The consensus on the centrality of institutions to development has not been matched by one on its definition. Different authors have used quite different definitions each emphasizing quite different aspects or characteristics of the more general phenomenon.

Table 1. Selected Definitions of ' Institutions'

Author	Definition
Advanced Learners Dictionary	(An institution is) long-established law, custom, or practice (e.g. club or society; the habit of going to church on Sunday mornings).
Merrian Webester's Collegiate Dictionary (10th ed.)	(An institution is) a significant practice, relationship, or organization in a society or culture (e.g. the institution of marriage), an established organization or corporation.
Veblen (1919)	Institutions are more settled habits of thought common to generality of man.
Hayami & Ruttan (1985)	Institutions are the rules of a society or organizations that facilitate coordination among people by helping them from expectations, which each person can reasonably hold in dealing with others. They reflect the conventions that have evolved in different societies regarding the behavior of individuals and groups relative to their own behavior and the behavior of others... There is a considerable disagreement regarding the meaning of the term 'institution'. A distinction is often made between the concepts of institution and organization. The broad view, which includes both concepts, is most useful for our purpose (p.94, including footnote).
Hodgson (1988)	Are institutions constraints only? Not at all: 'Institutions and routines, other than acting simply as rigidities and constraints, play an enabling role, by providing more or less reliable information regarding the likely action of others. Thus, the habits and routines formed by some individuals enable the conscious decision-making of others' (132-33).
Nabli & Nugent (1989)	For the present purpose an 'institution' is defined as a set of constraints which govern the behavioral relations among individuals or groups. Formal organizations such as labor unions and employers' organizations are institutions because they provide sets of rules governing the relationship both among their members and between members and non-members (pp.8-9).
North (1990)	Institutions are the rules of the game in a society or, more formally, are humanly devised constraints that shape human interaction. In consequence, they structure human exchange, whether political, social or economic (p3).
Pischke, (1991)	'Institutions as referred to the following discussion are *formal organizations* registered or charted according to law' (p.110).
Rutherford (1994)	An institution is a regulatory of behavior or a rule that is generally accepted by members of a social group, that specifies behavior in specific situations, and that is either self-policed or policed by external authority.
Klitgaard (1995)	Many authors have noted that 'institutions' means both 'organization' and norms, even patterns of conventional behavior. I lament the confusion but have not discovered an antidote (p.12).
Pejovich (1995)	We define institutions as the legal, administrative and customary arrangements for repeated human interactions. Their major function is to enhance the predictability of human behavior (p.30).
Clague (1997)	Broadly defined, institutions can be many things. They can be organizations or sets of rules within organizations. They can be markets or particular rules about the way a market operates. They can refer to a set of property rights and rules governing exchanges in a society. They may include cultural norms and behavior...If the rules were generally ignored, we would not refer to them as institution (p.18).
Nee (1997)	At the theoretical center of the new institutionalist paradigm is the concept of choice-within-constraints. Institutions, defined as webs of interrelated rules and norms that govern social relationships, comprise the formal and informal social constraints that shape the choice-set of actors. Conceived as such, institutions reduce uncertainty in human relations.

Most authors belonging to the new institutionalist school accept the definition provided by Douglas North. This definition takes institutions as rules of the game or constraints that shape human interaction: 'Institutions are the rules of the game in a society or, more formally, are humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic' (North 1990:3). Pejovich (1995), in the same vein as North, defines institutions as 'the legal, administrative and customary arrangements for repeated human interaction.' Then, he notes that the major function of institutions 'is to enhance the predictability of human behavior.'

In further elaborating his definition of institutions, North notes that 'institutions' are the humanly devised constraints that structure human interactions (North 1996:344). He then classifies constraints into several categories, namely, formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics. Together, these define the incentive structure of societies and specifically economies.

Informal rules have their origins in the experiences, traditional values, ethos, religious beliefs, ethnicity and other factors that influence the subjective perceptions individuals form to interpret reality. They are part of the heritage or culture, which is transmitted from one generation to another through teaching and imitation (Pejovich 1995:31; Boyd and Richerson 1985). Formal and informal rules might operate side by side as in the case of marriage rules in Ethiopia, where customary rules are enforced along with the civil code.

Moreover, similar formal rules operating in different societies may produce different outcomes (Pejovich 1995:32). Collectivization of agriculture had different results in the former Soviet Union and Ethiopia, although the two countries adopted more or less similar blueprints. The Grammeen Bank model has worked well in Bangladesh but has produced different outcomes in Ethiopia (Dejene 1998). It has also been observed that 'informal rules have frequently outlived formal rules' (Pejovich 1995:32).

One definition problem is whether organization is part of institution or not. Two different, although related, meanings are given to the term 'institution' in discussion of development (Arkadie 1989:153). The first is as rules of the game. The second is as organization.

North makes a clear distinction between institutions and organizations. He writes that 'if institutions are rules of the game, organizations and their entrepreneurs are the players' (North 1996:345). Accordingly, organizations are made up of groups of individuals bound together by some common purpose to achieve certain objectives. Thus, organizations include political bodies (e.g. political parties, regulatory bodies, a city council), economic bodies (e.g. firms, family farms, cooperatives), social bodies (e.g. churches, clubs, associations), and educational bodies (e.g. schools,

universities). However, there are other renowned adherents of the NIE who take 'organizations' as 'institutions'. For example, Nabli and Nugent (1989:8-9) clearly indicate that 'organizations' are also 'institutions'. For them, formal organizations, such as labor unions and employers' organization are institutions because they provide sets of rules governing the relationships both among their members and between members and non-members.

Another definitional problem is the disagreement as to whether institutions can best be understood from a behavioral perspective or from rules perspective (Nabli and Nugent 1989). According to the former, institutions are complexes of norms of behavior that persist over time, by serving collectively valued purposes (Uphoff 1986). North and his followers, of course, propose the latter view.

Institutions can be also defined in terms of certain characteristics they possess (Nabli and Nugent 1989). The first of such characteristics is the nature of the rules and constraints of institutions. The second is their ability to govern the relations among individuals and groups. It was this definition that one authoritative paper emphasized: 'institution is defined as a set of humanly devised rules that govern and shape the interactions of human beings in part by helping them to form expectation of what other peoples will do' (Lin and Nugent 1995:2306-2307). The third is their predictability. That is, agents should expect rules and constraints to have some degree of stability; otherwise, they would not have an institutional character. Accordingly, 'institutions' may be reflected in the appearance of certain behavioral regularities or 'norms' (Lin and Nugent 1995:2307).

Some authors (e.g. Clague 1998:18) distinguish between different categories of institutions. These are (1) the constitutional order (which is stable in industrialized and in surviving communist countries and very unstable in Africa), (2) the institutional arrangements (which is widely discussed in the literature including this one), and (3) the cultural endowments (which change very slowly and are little discussed in the institutionalist literature, except in economic anthropology).

From the above, we can conclude that the literature suggests that, at present, there is no universal definition of ' institution'; it depends on the type of discipline to which an author belongs and on the purpose of the study. Accordingly, for this review, we adopt the definition provided by Nabli and Nugent (1989). The essence of this definition is that it takes 'institution' as a 'set of constraints which governs the behavioral relations among individuals or groups.' Accordingly, both formal and informal organizations are institutions because they embody rules that govern the behavior of individuals or groups. Moreover, 'cultural rules and codes of conduct are institutions' in so far as they can constrain the interactions between individuals and/or groups.

3. LIMITATIONS OF MAINSTREAM ECONOMICS

The raison d'e'tre of institutional economics emanates from the shortcomings of mainstream neoclassical economics. According to a leading advocate of the NIE (Eggertsson 1990: 4-5), there are at least three areas of inquiry that until recently have been largely neglected by economists of the neoclassical school. These are:

1. How do alternative sets of social rules (property rights) and economic organizations affect behavioral allocation of resources, and equilibrium outcome?
2. Why does the form of economic organization differ from one type of economic activity to another, even within the same legal framework? In general, what is the economic logic of various contractual agreements, such as the firm, that is used for organizing production and exchange?
3. What is the economic logic behind the fundamental social and political rules that govern production and exchange, and how do these rules change?

These and similar areas of inquiry are largely neglected by adherents of neoclassical economic theory because institutions are assumed away in this theory (see Table 2). That is, institutions are considered as given in conventional economic theory. In this theory, the 'institutional framework has almost invariably been taken as given, and in many cases has been even altogether omitted' (Nabli and Nugent 1989:9). Because it neglects institutions, 'neoclassical theory is simply an inappropriate tool to analyze and prescribe policies that will induce development' (North 1996:342-43). Mainstream economists tend to leave the analysis of institutional constraints and opportunities to non-economists, like anthropologists, sociologists, historians, etc.

The shortcomings of mainstream economics are not limited to the neglect of institutional analysis. Time* is another factor that is largely neglected by this theory. The implication of this point is that history is not a subject matter of neoclassical economics. But to appreciate the continuity of society's institutions and learn from the past, economists need the knowledge of history as noted by Douglas North (1990:7).

History matters. It matters not just because we can learn from the past, but because the present and the future are connected to the past by the continuity of society's institutions. Today's and tomorrow's choices are shaped by the past. And the past can only be made intelligible as a story of institutional evolution. Integrating institutions into economic theory and economic history is an essential step in improving that theory and history.

Moreover, conventional economic analysis grossly underestimates the role of institutional uncertainty in determining economic decision making, in particular, in developing economies as demonstrated by the case of Latin America (Borner *et al.*,

* Marshal is one important exception.

1992). Institutional uncertainty, defined as 'risk arising from a highly volatile institutional environment' (Borner *et al.*, 1992:17), means that there are no clear and irrevocable rules of the game. This reflects the permanent danger of expropriation or limitation of property rights. Insecure access to land provides a good example of institutional uncertainty (Dejene 1999). Other examples of such type of risks include unpredictable judiciary, discontinuities in the legal system, unstable tax systems, volatile macroeconomic variables (e.g. unpredictable exchange rates), insatiable administration, civil conflict, etc.

Table 2. Selected Critique of Mainstream Economics

Author	Critique
Hodgson (1988)	Before ' economic man ' can choose and act, he must be fed, clothed, rested and be healthy. The choosing, acting agent of the textbooks has basic needs that must be satisfied before he can calculate, bargain and choose in the manner in which he or she is supposed (p.249).
Nabli & Nugent (1989)	In mainstream neoclassical economics, four main types of constraints have received considerable attention: individual preferences, technological opportunities, physical and human capital endowments and market opportunities. In such analysis, the institutional framework has almost invariably been taken as given, and in many cases has been even altogether omitted. The consequence of taking the institutional framework as given has been to leave the analyses of institutional constraints to non-economists... The explicit or implicit assumption of a given institution is, of course, especially unrealistic and limiting in the context of economic development, a process whereby institutions generally undergo substantial changes. The good of the NIE is to overcome these important limitations of mainstream neoclassical economics (p.9).
Solo (1989)	Neoclassical economics is a theory of individualized choice. It rests on and cannot do without the assumption of the self-seeking, self-optimizing choice of autonomous individuals. No doubt, such choice exists and can count for observed behavior in important sectors of the economy. But also there are decisions that are a function not of such individualistic choice, but that emanate rather through the policy-making processes of large, complex organizations (p.268).
Borner *et al.* (1992)	Traditional neoclassical growth theory is... not the appropriate framework (to explain the central forces of development for all countries), because it defines away many important determinants of growth by assuming the existence of the very institutions that are necessary preconditions for efficient markets (p.10).
North (1996)	Neoclassical theory is simply an inappropriate tool to analyze and prescribe policies that will induce development. It is concerned with the operation of market not with how markets develop. How can one prescribe policies when one doesn't understand how economies develop? The very methods employed by neoclassical economists have dictated the subject matter and militated against such a development. The theory, in its pristine form gave its mathematical precision and elegance, modeled a frictionless and static world. In the analysis of economic performance through time, it contained two erroneous assumptions: first, that institutions do not matter, second, that time does not matter (pp.342-43).

The condition of pure competition is taken as the core and essence of economic reality, although the neoclassical approach admits certain variants like the theories of monopoly, oligopoly or imperfect or monopolistic competition. More modern textbooks do treat recent variants like modeling with incomplete information (e.g. see Kreps 1990; Pindyck and Rubinfeld 1994). In fact, some of the recent concepts of the mainstream theory are capable of explaining aspects of development. For example, Winiecki (1996) used the theory of agency (adverse selection and moral hazard) to explain the inability of rulers in the former Soviet states to radically reform their economies. Similarly, researchers have used the concept of contractual choice to investigate contract enforcement problems in developing economies (e.g. see Manard 1998; Matoussi and Nugent 1989).

4. THE MEANING AND IMPORTANCE OF THE NEW INSTITUTIONAL ECONOMICS

The need to redress the shortcomings of neo-classical economics led to a new school of thought in economics namely: the school of institutional economics, which dates its origin back to the turn of this century when Thorestein Veblen undertook pioneering studies of issues relating to institutions.

'Old' and 'New' Institutional Economics

Two major traditions of institutionalist economics can be identified. The first is the American institutionalist tradition that began at the turn of the century and has continued to this day. This tradition, termed as 'old' institutional economics (by adherents of the 'new' institutional economics), has included the works of Thorstein Veblen, Westley Mitchell, John R. Commons, Clarence Ayres, Allan Gruchy, Marc Tool, Warren Samuels, and many others.

The second strand of institutionalist thought in economics is of relatively recent origin. It is termed as the 'new' institutional economics (by its followers). It is found in the works of writers like Ronald Coase, Douglas North, and Oliver Williamson. What is 'new' about the NIE is that 'there is an older school of institutionalism in economics' (Harriss *et al.*, 1995:4).

What are the differences between the 'old' and 'new' strands in the institutionalist tradition? It is beyond the scope of this study to dwell upon the vast studies dealing with this question (e.g. see Rutherford 1994). Here we would like to state that the NIE is a line of investigation that departs from but does not abandon neoclassical economics. In the words of Douglas North (1978) 'to abandon neoclassical theory is to abandon economics as a science.' The NIE attempts to save neoclassical economics by incorporating institutions into its analysis. Its critique of mainstream economics is largely a positive one. Thus, according to North (1995:17):

> The new institutional economics is an attempt to incorporate a theory of institutions into economics. However, in contrast to the many earlier attempts to overturn or replace neoclassical theory, the new institutional economics builds on, modifies and extends neoclassical theory to permit it to come to grips and deal with an entire range of issues heretofore beyond its ken. What it retains and builds on is the fundamental assumption of scarcity and hence competition: the basis of the choice of theoretic approach that underlies microeconomics. What it abandons is instrumental rationality: the assumption of neoclassical economics that has made it an institution-free theory.

On the other hand, 'old' institutional economics, the purpose of which is critical inquiry and problem solving, departs radically from mainstream economics. Its areas of concern are: (1) pervasive concern with role and significance of conflict, coercion and power in economic and social life; (2) a rejection of price or market values as viewed by neoclassical economists; (3) a persistent interest in instability as opposed to equilibrium conditions; (4) a continuous preoccupation with externality or with social costs and benefits; (5) an early and systematic recognition of the central role of science and technology in economic and social life of society; and (6) a commitment to a critical analysis of the quality of individual and social life with a view to realizing a peaceful, democratic and prosperous society (Kapp 1988:99-100).

The methodology of 'old' institutional economics is quite different from that of mainstream economics. The former has always been concerned with the discovery and presentation of facts, depending heavily on statistics. For 'old' institutional economists 'all economic laws rest upon facts, not assumptions' (Witte 1988:32). These facts are not restricted to the domain of economic life only.

In arriving at conclusions 'old' institutional economists have generally relied upon inductive method rather than the deductive one, which is common with mainstream economics. They have 'relied far more on direct observation than model building and have not been content to make economics an exercise in logic' (Witte 1988:32). However, 'simply to identify institutionalism with empiricism is a mistake' (Ayres 1988:17). On the other hand, adherents of NIE view 'old' institutional economics 'as descriptive, holistic and behaviorist' (Harris *et al.*, 1995:5).

Old institutional economics, sometimes known as the 'historical school', is often criticized by its opponents for lack of a theory that would guide empirical investigations as succinctly put by Langlois (1986:5), an ardent follower of the NIE:

> The problem with the historical school and many of the early institutionalists is that they wanted an economics with institutions but without theory; the problem with many neoclassicists is that they want economic theory without institutions; what we should really want is both institutions and theory (not only pure economic theory informed by the existence of specific institutions but also an economic theory of institutions).

According to Nabli and Nugent (1989:10), the two schools share a strong criticism of neoclassical economics for (1) its lack of attention to institutions and hence also non-

budgetary constraints, (2) its overemphasis on the rationality of the individual in decision-making, (3) its excessive concentration on equilibrium and statics as opposed to disequilibrium and dynamics and (4) its denial that preferences can change or that behavior is repetitive or habitual. Moreover, 'institutionalists (old and new) are concerned with the determinants of change over time' (Harris *et al.*, 1995:5).

Different Themes in NIE

Leaving further details of 'old' institutional economics to the literature (Rutherford 1994; Hodgson 1988; Samuels 1988; Kapp 1988; Mayhew 1994; Witte 1988; Ayres 1988; Moller 1988), we will elaborate NIE, the subject matter of this study. In other words, we will attempt to briefly review the main issues and hypotheses pertaining to NIE. This will help provide a framework for the applications of the theory as indicated below.

There are different strands (Clague 1997:18-22), themes or approaches in institutional analysis. However, different authors tend to identify different strands. According to Nabli and Nugent (1989), there are two inter-related approaches: 1) the transaction costs and information costs approach and 2) the collective action approach. But Lin and Nugent (1995) drop the 'information cost approach and note that the NIE has two interdependent approaches, namely, the transaction costs approach (which analyses the demand for institutional innovations) and the collective action approach (which analyses the supply of institutional arrangements). The former contains different but interrelated themes. One such theme is concerned with the role of transaction costs (defined as costs of finding what the relevant prices are, of negotiating and concluding contracts, and of monitoring and enforcing them) in economic organization. The general hypotheses are that institutions are transaction cost-minimizing arrangements, which may change and evolve with changes in the nature and sources of transaction costs and the means for minimizing them. Thus, Lin and Nugent (1995) underline that the most basic function of institutions 'is to economize'.

Property rights (defined as an actor's rights, which are recognized and enforced by other members of society, to use and control valuable resources (Libecap 1996:31)), is a theme related to transaction costs theory. Well-defined and properly enforced property rights may reduce conflicts and facilitate co-operation thus resulting in a reduction in transaction costs. In this way, along with technology and other traditional constraints, institutional constraints enter into the decision process of individuals. In the presence of transaction costs, different systems of property rights yield solutions of differing efficiency. What is efficient in the presence of transaction costs may be quite different from that which is efficient in the traditional neoclassical economics without transaction costs.

Another theme, which is closely related to transaction costs, but which originated outside the institutionalist tradition, is concerned with incomplete information and asymmetries of information in particular. The problems of 'adverse selection' and 'moral hazards', which were first identified in the context of insurance markets, have been found to be relevant for a large class of problems where asymmetries of information are present between the parties to a contract. These problems, moreover, may lead to 'market failure' unless incentive mechanisms capable of overcoming them, such as appropriate forms of contract, are developed.

Collective action is defined as 'the conditions under which groups of people with a common interest will perceive that interest and act to achieve it' (Clague 1997:21). It is also concerned with the elimination of 'the free-rider problem.' The key issue in the collective action literature is to 'explain collective outcomes in terms of individual motivation', or, to put it differently, to explain the likelihood of success or failure of a given set of self-interested individuals in undertaking actions that may benefit them collectively. The theory of collective action has been concerned with public or collective goods or with common property resources (Nabli and Nugent 1989). For practical purposes it is useful to distinguish between three major themes within the NIE. These are the transaction costs, property rights, and collective action approaches.

The Importance of the NIE

Institutions do structure economic forces and play an important role in expanding human choice–a fundamental goal of economic development. Institutions affect choice by influencing availability of information and resource, by shaping incentives, and by establishing the basic rules of social transactions. Institutional innovations contribute to development by providing more efficient ways of organizing economic activity (Ostrom *et al.*, 1989). In the words of Douglas North (1992), 'Institutions and the way they evolve shape economic performance.' According to Burki and Perry (1998:143) 'Well-defined institutions reduce transaction costs by ameliorating information and enforcement problems. Thus, they make possible the existence, efficiency, and depth of markets and organizations.'

The subject matter of the NIE is much wider than that of standard neoclassical economics (but narrower than that of 'old' institutional economics). Politics is relevant to economic growth and development because transaction is not costless. The NIE incorporates ideologies, ideas and politics into economic analysis without rejecting some of the fundamental postulates of standard neoclassical economic theory. In the words of Douglas North (1995:19):

> [The NIE] extends economic theory by incorporating ideas and ideologies into the analysis, modeling the political process as a critical factor in the performance of economies, as the source of the diverse performance of economies, and as the explanation for 'inefficient' markets.

The basic assumptions of the NIE include the assumption of a situation of bounded rationality and the assumption that knowledge is very costly to obtain. Since decision-makers do not have perfect knowledge, opportunism (i.e. self-interest with guile) can and often exist (Acheson 1994:7).

Where does the importance of the NIE lie? According to Harriss *et al.* (1995), the NIE is important for perhaps three reasons. First, it is an emerging body of theory, which starts out within the framework of neoclassical economics, 'but offers answers to what have otherwise remained as puzzles in neoclassical theory.' Second, it is important in the context of structural adjustment policies of the 1980s and 1990s because it 'has challenged the dominant role ascribed to the market by the orthodoxy' of these decades'. Third, it attempts to offer 'a grand theory of social and economic change' at the very time when grand theories in the social sciences have generally been on the retreat.

Moreover, the NIE is a school of thought that has the potential for bridging the gap between economics and neighboring subjects like political science, history, sociology and anthropology. This is because these disciplines share institutional analysis with reformed economics, i.e. institutional economics. According to Harriss *et al.* (1995:1) NIE is 'a body of economic theory which ascribes an important role to ideas and ideologies, and one which is accessible to other social scientists, seeming to open up the terrain of genuinely inter-disciplinary inquiry.'

According to the followers of the NIE, institutions play the following roles in economic activities (Harriss *et al.*, 995:3): (1) institutions are broadly conceived as a means for reducing information and transaction costs (for details see North 1992); (2) institutions are formed to reduce uncertainty in human exchange (e.g. see North 1995); (3) institutional analysis enables us to understand that individuals make choices on the basis of their 'mental models', (for details see North 1990; 1995); and (4) institutions provide the mechanism whereby rational individuals can transcend social dilemmas, where 'social dilemmas' refer to those kind of problems which arise when choices made by rational individuals yield outcomes that are socially irrational (Bates 1995). In short, the literature suggests that the NIE will improve our understanding of the development process (e.g. see (Harriss *et al.*, 1995)).

Limitations of the NIE

The NIE does suffer from certain shortcomings. First, there has been no consensus regarding the meaning of 'institutions', as explained above. Second, the NIE is at its formative stage and, so far, it has no full-fledged theory or body of thoughts of its own. According to Acheson (1994:6), the NIE 'is moving so rapidly that no commonly agreed on set of principles has emerged.' Further, he argues, the NIE refers to 'the work of a loose collection of economists and political scientists interested in the generation of institutions from the behavior of individuals, and the ways in which these institutions influence the level of productive activity and exchange.' One

observer notes that 'the NIE is not yet capable of generating universal set of hypotheses concerning institutional changes...A theory in which anything is possible is a theory in which outcomes can't be predicted' (Herrick 1989:435). Similarly, Toye (1995:64) notes that, in some respects, 'the NIE is another example of the unfortunate tendency of some theorists to inflate a useful low-level theory until it becomes an unsuccessful global-historical generalization.' Toye, goes further and asserts that 'the main weakness of the NIE as a grand theory of socio-economic development is that it is empty.' Anthropologists and sociologists, who argue that the assumptions of the NIE are often unrealistic, provide further critiques of the NIE (e.g. see Acheson 1994:23-26).

But, does that mean the NIE should be rejected with respect to problems of development? No. Even Toye himself admits that ' the NIE represents an important breakthrough for development theory.' This is so not only because 'the NIE has brought about a major shift in the terms of the discourse about development' (that is, what Toye calls the 'linguistic argument'), but also the NIE makes a substantive contribution to the development discourse by providing 'exploration of opportunism' (rationally self-interested behavior in conditions of strategic interaction of decision-making, defiency of information and uncertainty). According to Toye, the exploration of opportunism will have far-reaching consequences beyond the realm of game theory to which it has traditionally confined. But, to successfully go beyond the realm of game theory and elegant models and understand the real causes and nature of economic crises in Africa, economists need to learn more about related disciplines like history, anthropology, sociology, political science, etc. An understanding of the relevant aspects of these disciplines will help the economist appreciate the role of non-price variables in shaping human behaviour and determining patterns of resource allocation. For example, a knowledge of history enables us understand how the present is related to the past. This is what Douglas North calls 'path dependence' in institutional changes over time.

5. APPLICATIONS OF THE NEW INSTITUTIONAL ECONOMICS TO THE PROBLEMS OF DEVELOPMENT

The NIE appears to be particularly relevant to the study of developing economies in general, and Africa, in particular, where non-market institutions and market failure (plus state failure) has been of particular importance.

Two of the major books of readings on the application of institutionalism to developing economies (Nabli and Nugent 1989 and Harriss *et al.*, 1995) have demonstrated the usefulness of this approach as an alternative to conventional models. Nabli and Nugent (1989:439) commented in the concluding part of their work that the NIE has almost adequately explained the Tunisian cases but both the framework and its application have to be modified to better suit developing countries.

Similarly, the authors of the other book (Harriss *et al.*, 1995:13) made the following observation:

> The NIE is a significant theoretical contribution to development studies and confirms the vitality of the substantive study of history for analysts and policy-makers concerned with institutional change in the Third World. It is not, however, the philosopher's stone.

The relevance of NIE to development problems has been underlined by other scholars. Robert Bates (1995:35) noted that the 'new institutionalism now also plays (and will continue to play) a major role in the study of development.' Douglas North, an economic historian, argues that the process of economic development involves replacing inefficient institutions with institutions that promote growth. He further notes that institutions that reduce transaction costs are characteristics of advanced societies while inefficient institutions are characteristics of less developed economies. Regarding the latter case, in particular, he notes:

Opportunities for political and economic entrepreneurs are still mixed bag, but they overwhelmingly favor activities that promote redistributive rather than productive activity, that create monopoly rather than competitive conditions, and that restrict opportunities rather than expand them. They seldom induce investment in education that increases productivity (North 1990:9) (emphases, added).

In a remarkable statement, North (1995:21) emphatically argues that whether an organization (e.g. the state in Africa) has an incentive for promoting economic growth or selfish interest, at the expense of others, depends on the type of the prevailing institutional framework:

> If the institutional framework made the highest pay-offs for organization's piracy, then organizational success and survival dictated that learning would take the form of being better pirates. If on the other hand, productivity-raising activities had the highest profits, then the economy would grow.

New institutional economics makes a radical departure from conventional theories of development in, at least, one important respect: it attempts to provide some clues as to how to get the economy moving in crisis-ridden or 'ailing economies.' In this light North provides three related propositions. First, he argues that privatization is not a panacea for solving poor economic performance as long as the informal norms and the enforcement characteristics of a country remain inefficient. Second, 'the heart of development policy must be the creation of policies that will create and enforce efficient property rights.' Third, ' adoptive efficiency' (i.e. flexibility) rather than price (allocative) efficiency should be the guide to policy. That is, a government should be capable of making adjustment in the context of evolving technological and demographic change as well as shocks of the system. More concretely, North (1995:23) notes that 'getting prices right only has the desired consequences when

agents already have in place a set of property rights and enforcement that will then produce the competitive market conditions.'

Moreover, North underlines that institutions that have succeeded to transform Western economies may not necessarily work in the context of developing economies such as that of Africa. In his words:

> Transferring the formal political and economic rules of successful Western market economies to Third World and East European economies is not a sufficient condition for good economic performance. Privatization is not a panacea for solving poor economic performance (North 1995:25).

The literature on the applications of the NIE is thin[2]. For example, Alston and others (1996:1) note that 'the field (NIE) is long on theoretical analysis but short on empirical work.' Standard empirical analysis is limited to few works (e.g. Alston *et al.*, 1996). Similarly, Shirley (1997) observe that the field of applied institutional economics 'is relatively underdeveloped.'

Given this limitation, we will attempt to undertake a survey of the applications of the NIE to the problems of development. Following a review of themes in the NIE (see above), we classify the applied literature into four broad categories, namely (1) the NIE in general (Table 3), (2) transaction costs theory (Table 4), (3) property rights theory (Table 5), and (4) collective action theory (Table 6).

Some authors apply the NIE to the problems of development without necessarily providing specific thematic framework like transaction costs theory or property rights theory. In other words, in defining their frameworks, they use the NIE in general instead of focusing on a particular theme or approach.

The NIE, in general, has been applied to different types of problems of development (Table 3). For example, Feige (1990) elaborates the taxonomy of underground economies in developing countries using the general theory of the NIE and shows the relevance of the NIE to the analysis of the unofficial economy.Similarly, Kalmonovitz (1997) investigates how institutions influence the pace of economic development in a Latin American country, Colombia. He suggests that the justice system of a country influences the behaviour of economic agents. Handoussa (1995) considers redefinition of the role of the state in a developing country (Egypt) undergoing liberalization and structural adjustment. His study suggests, among other things, that the incomplete nature of legislative reforms and deregulation have obstructed competition and raised transaction costs thus retarding the pace of economic growth. Further, Sullivan (1997) attempts to show the linkages between the NIE and business sector development. He concludes that, among other things, trust and a shared understanding are of central importance in improving the business climate in developing countries. Leitmann and Baharougu (1998) use the NIE approach to examine the formal frameworks for infrastructure provision in Turkey's

Table 3. Selected Applications of the NIE, in General, to Development Problems

Study	Economy	Area of investigation	Central argument/major findings
Feige (1990)	Developing countries	Underground economies	Taxonomy of underground economies is elaborated based on the new institutional approach to economic development. The paper distinguishes illegal, unreported, unrecorded and informal economies and examines the conceptual and empirical linkages among them. Shows the relevance of the new institutional approach to the analysis of the Unofficial economy.
Feeny (1993)	Developed and developing countries	Economic history	Undertakes a nice survey of the application of the institutional approach to developing countries and to the economic history of the now developed countries. The survey has demonstrated the relevance of institutional economics to the conditions of developing countries.
Acheson (1994)	Rural economies of developing countries	Anthropology	Provides a survey of anthropological applications of the NIE to the conditions of rural societies. Important findings have emerged from the literature surveyed therein.
Clarence-Smith (1995)	Cocoa growing countries 1870s-1914	Efficiency of institutions	Shows that institutions are not usually set up to be socially or economically efficient and that they reflect the bargaining power of social and political actors, and that predominant cultural forms tend to maintain 'institutional path dependence.' Reinforce the argument that the state is a representative of the dominant interest groups within a society.
Handoussa (1995)	Egypt	Role of the state in economic development	Considers the redefinition of the role of the state in a developing country undergoing liberalization and structural adjustment. Shows, among other things, how the incomplete nature of legislative reform and deregulation and decentralization have obstructed competition, raised transaction costs and retarded economic growth.
Adams & Scaperlanda (1996)	Global	International economic issues	Examines international economic issues within the framework of Institutional Economics.
North &Weingast (1996)	Seventeenth century England	Economic growth	Provides account of the successful evolution of institutional forms that permitted economic growth to take place in early modern England. Shows that, in an economy where ontrepreneurship is decentralized, economic actors will hold back on long-term investment unless the state make credible commitments to honor its contracts and respect individual ownership rights.
Kalmanovitz (1997)	Colombia	Determinants of economic development	Investigates how institutions influence the pace of economic development. shows how the justice system of a country influence the behaviour of economic agents.
Sullivan (1997)	Developing countries	Business sector development	Attempts to show the linkages between the new institutional economics and business sector development. Shows, among other things, that trust and a shared understanding are all of central importance in improving the business climate in developing countries.
Leitmann & Baharoglu (1998)	Turkey	Infrastructure	Reports on research that used the NIE approach to examine the formal frameworks for infrastructure provision in Turkey's spontaneous settlements. A key finding of the study was that formal rules are irrelevant and that, in the absence of formal rules, pressure arise that help to develop informal rules, which then result in certain behavioral pattern.

spontaneous settlements. A key finding of the study was that formal rules are, in some cases, irrelevant and that in the absence of formal rules, pressure arise that help to develop informal rules, which then result in certain behavioral pattern. Feeny (1993) undertakes a survey of the applications of the institutional approach to developing countries and to the economic history of the now developed countries. Clarence-Smith (1995), using evidence from cocoa-growing countries between 1870s and 1914, tests the hypothesis that institutions are not usually set up to be socially or economically efficient and that they reflect the bargaining power of social and political actors. This study reinforces the argument that the state is a representative of the dominant interest groups within a society. Adams and Scaperlands (1996) examine international economic issues within the framework of Institutional Economics and show the relevance of this theory to global economic relations. North and Weingast (1996), using the instituionalist approach, provide account of the successful evolution of institutional forms that permitted economic growth to take place in early modern England. The study shows that, in an economy where entrepreneurship is decentralized, economic actors will hold back on long-term investment unless the state make credible commitments to honour its contracts and respect individual ownership rights.

The transaction costs theory, is, perhaps, the most widely applied theme within the new institutionalist approach. This theme has been used by adherents of the NIE and by other as well. Table 4 presents selected literature on the applications of the transaction costs approach.

The transaction costs theory has proved to be a powerful tool in the analysis of various aspects of development problems. Wiesner (1997) attempts to link transaction costs with externalities and with rent-seeking behavior in developing countries, with particular reference to Colombia. The study underlines the relevance of rent seeking behaviour of economic actors in the analysis of development problems. Datta and Nugent (1989) provide a unifying transaction cost framework for explaining choices among different forms of contract in developed and developing countries, while Azabou *et al.*, (1989) describe and then analyze, from the perspectives of transaction cost theory, contractual forms employed in all segments of Tunisia's fishing industry. The latter study suggests that trends toward more capital intensive fishing would be accompanied by a switch from share contracts to wage contracts. Azabou and Nugent (1989) analyse tax farming arrangements in Tunisia, using the transaction cost approach. This approach convincingly explain why some seemingly anachronistic arrangements persist over time. Nabli *et al.*, (1989) apply the transaction costs framework to ownership form choices in Tunisian manufacturing industry and reveal the existence of opportunistic behavior such as tax evasion, quality-shirking, adverse selection other than those which have been considered in the existing applied literature. They show that transaction costs are capable of explaining the size and ownership form choices of private firms in various sectors of the Tunisian manufacturing industry. Using the transaction costs approach, Matoussi and Nugent (1989) convincingly explain why economic agents in certain

Table 4. Selected Applications of Transaction Costs Theory

Study	Economy	Area of Investigation	Central argument/major findings
Datta & Nugent (1989)	Developed and developing economies	Choice of contract	Provides a unifying transaction cost framework for explaining choices among different forms of contract. The study suggests that the theory of transaction costs can go a long way toward explaining choices among contracts and other institutional forms.
Azabou *et al* (1989)	Tunisia	Fishing	The contractual forms employed in all segments of Tunisia's fishing industry are described and then analyzed from the perspective of transaction costs theory. The theory predicts that trends toward more capital intensive fishing would be accompanied by a switch from share contracts to wage contracts.
Azabou & Nugent (1989)	Tunisia	Taxation	The authors highlight the time periods in which fixed rent contracts known as tax farming were dominant in Tunisia as well as elsewhere. They then go on to explain how and why this seemingly anachronistic form of contract continues to dominate in one specific sector, namely the taxation of Tunisia's weekly markets. The explanation hinges on the extremely high transaction costs and risk-aversion on the part of the local governments to whom the tax receipts accrue.
Nabli et al (1989)	Tunisia	Manufacturing industry	The authors application of the transaction costs framework to ownership form choices in Tunisian manufacturing industry reveals the need to consider forms of opportunistic behavior, such as tax evasion, quality-shirking, adverse selection, other than those which have been considered in the existing applied literature. Transaction costs are capable of explaining the size and ownership form choices of private firms in various sectors of Tunisian manufacturing.
Greenhill (1995)	Brazil	Role of the state in economic development	Undertakes a case study of state intervention in the Brazilian coffee before 1929, a policy intended to improve the coffee planter's market conditions. Shows that institutions improve efficiency by reducing uncertainty in human exchange but reflect social and political power.
Wiesner (1997)	Colombia	Externalities	Attempts to link transaction costs with externalities and with rent-seeking behavior in developing countries with particular reference to Colombia. The paper suggests that public sector rent seeking and the institutional arrangements that arise from such rent seeking should become the unit of analysis of development theory and practice.
Eleni (1998)	Ethiopia	Grain market	This work examines the consequences of the transaction costs of search on the emergence of the institution of brokerage in the Ethiopian grain market. The results reveal that traders with high costs use more brokerage while traders with high social capital rely on direct search, confirming that brokerage enables traders to minimize transaction costs. It demonstrates that transaction costs influence the emergence of market institutions and the heterogeneity of traders with respect to costs has important implications for the economic incidence of policies to reduce transaction costs.
Matoussi & Nugent (1989)	Tunisia	Sharecropping	Transaction costs theory has successfully explained why economic agent switched from wage and rent contracts to share contracts.

sectors switched from wage and rent contracts to sharecropping contracts. Eleni (1998), in a study of grain markets in Ethiopia, demonstrates that transaction costs influence the emergence of market institutions and the heterogeneity of traders with respect to costs has important implications for the economic incidence of policies to reduce transaction costs. Greenhill (1995), in a study of Brazilian coffee, demonstrates that institutions improve efficiency by reducing uncertainty in exchange arrangements.

Property rights theory is another approach that has been widely applied to various aspects of the development process. Selected applications of this approach are presented in Table 5. Clague and others (1997), using the property rights approach, present evidence from cross-country statistical analysis and explain differences in income, growth rates, and rates of investment in developing and developed countries. What emerges from this study is that differences in property rights and contract enforcement mechanisms are important part of the explanation why some countries prosper while others do not. Dejene (1999a) reviews the concept of 'property rights' and alternative forms of resource management regimes and provided evidence from rural Ethiopia. He shows, among other things, how property-rights regimes affect micro-level decisions of economic agents. Cheung (1996), using the property rights approach, analyze the process of regulation in a single market, i.e., rental housing in Hong Kong. This approach was also applied to a highly developed economy, USA, concerning regulations restricting the catch of Salmon (Higgs 1996) and the emergence of a brand-new property rights in response to the influence of a specific type of political organization (Riker and Sened 1996). Higgs suggests that government regulations can create a dynamic process that converges on high-cost outcomes while Riker and Sened (1996) argue that new types of institutional arrangements are often needed to exploit the wealth-enhancing potential of technological change. Libecap's (1996) study suggests that property rights become precisely defined as the value of a resource increases over time. The property right theory is also applied to environmental issues. For example, Berke (1996) demonstrates that there is no clear-cut verdict on the performance of natural resource management systems under different property-rights regimes, except that open-access is not viable in the long-term. In a similar fashion, Ensminger (1996) argues that many top-down approaches to establish private-property regimes for environmental resources have failed not only because they have imposed high transaction costs, but also because they are ill-adapted to the specific cultural context in which they are developed.

Table 5. Selected Applications of Property Rights Theory

Study	Economy	Area of investigation	Central argument/major findings
Cheung (1996)	Hong Kong	Market regulation	Looks at the process of regulation in a single market (rental housing). Using property right theory, showed the unintended side effects of regulation and explored how, in a complex world, actors may respond to regulations with adjustment at various unexpected margins and create outcomes that generate further institutional change.
Higgs (1996)	USA	Fishing	Analyze the causes and consequences of the regulations restricting the catch of salmon in the Pacific Northwest. Shows how government regulations can create a dynamic process that converges on high-cost outcomes.
Riker & Sened (1996)	USA	Role of the state in economic development	Studies the emergence of a brand-new property rights and stressed the relative role of political organizations in their creation. Shows that new types of institutional arrangements are often needed to exploit the wealth-enhancing potential of technological change.
Libecap (1996)	USA	Value of resources	Quantitatively tests the hypotheses that, up to a point, property rights become precisely defined as the value of a resource increase. The paper is concerned with the timing and emergence of particular legal institutions. Describes and quantity the progression of property low from general rules to highly specified statures and court verdicts.
Clague et al (1997)	Developed and developing countries	Determinants of economic development	Presents evidence from cross-country statistical analysis and explains differences in income, growth rates, and rates of investment. Shows that societal differences in property rights and contract enforcement mechanisms are important pat of the explanation why some countries prosper while others do not.
Dejene (1999 a)	Ethiopia	Land question	Reviews the concept of 'property rights' and alternative forms of resource management regimes and provides evidence from rural Ethiopia. Explains how property rights regimes affect micro-level decisions of farm households.
Berkes (1996)	Developed & developing countries	Ecological systems	Argues that the focus on property rights expands the scope of ecological economics to consider a three-way linkage incorporating social, institutional, and cultural dimensions. Demonstrates that there is no clear-cut verdict on the performance of natural resources systems under different property-rights regimes, solution. Needed are combinations of property-rights regimes and a diversity of property rights institutions that can be adapted for specific circumstances.
Ensminger (1996)	Africa	Culture & property rights	Illustrates the relationship between culture and property rights in the context of attempts by African governments to change property rights in land. Many top-down approaches to establish private-property regimes for environmental resources have failed not only because they have imposed high transaction costs, but also because they are ill-adapted to the specific cultural context in which they are developed.

The theory of collective action is rarely applied to problems of development. Perhaps, the only major applications of the theory are found with reference to the Tunisian economy (see Table 6). With reference to Tunisia, Bsaies (1989) provide an institutional explanation for the failure of the country to introduce modern education during the nineteenth and twentieth centuries. Nugent (1989) identifies and explained variations on the theme of Olson (1964) with reference to producer organizations. The author explains not only the relatively late appearance and overall weakness of producer organization in Tunisia but also the observed variations in their relative strength from one group to another over time. Azabou *et al.*, (1989) analyses the degeneration in the wholesale market of Tunis and the role of porters' union in that process. The theory has explained the relative strength of the porters' union vis-à-vis the other relevant groups and the union's choice of instruments for collective action. Bechri (1989) analyses the functioning of the credit market in general and interest rate determination, in particular. Grissa (1989), using Olson's interest group theory explains the determinants of both the level and the structure of interest rates in Tunisia. Brett (1995), using evidence from Uganda, argues that progressive change is not random, but a response to a widespread willingness among people to set aside self-interest and demonstrate high levels of altruism where they can be made to recognize the need for and possibilities of collective action. This finding obviously contradicts one of the basic assumptions of orthodox neoclassical economics i.e. maximization of self-interested individuals. Ostrom (1990) explores whether and how common-pool resources can be organized in a way that avoids both excessive consumption and administrative cost. She questions the argument that that the problem of over-consumption is solved by privatization or enforcement imposed by outside force (government). The author argues forcefully that other solutions exist and that stable institution, of self-government can be created if certain problems of supply, credibility, and monitoring are solved. Using a revised version theory of collective action Dejene (1999) explores possibilities for explaining problems of economic integration in Africa. He demonstrates that institutional factors, more specifically failure of collective action, can explain the unsatisfactory performance of regional integration schemes in Africa. Ostrom *et al.*, (1994) explore empirically, theoretically and experimentally the nature of institutions that are developed to protect against overexploitation of resources. They question the notion of 'the tragedy of the commons' and demonstrate that the users of commonly held resources have in many instances overcome incentives to destroy resources and have developed long-enduring institutions that enabled them to utilize these resources more effectively. Wade (1988) shows how a common property resource system in India was managed entirely outside the formal governance system and how collective action was sustained by paying regular bribes to regional and national officials.

Table 6. Selected Applications of Collective Action Theory

Study	Economy	Area of investigation	Central argument/major findings
Wade (1988)	India	The management of common-pool resources (CPR)	Shows how a CPR system in India was managed entirely outside the formal governance system of India and how collective action was sustained by paying regular bribes to regional and national officially.
Bsaies (1989)	Tunisia	Education	*Provides an institutional explanation for the failure to introduce modern secular education in Tunisia during the 19th and early 20th centuries.*
Nugent (1989)	Tunisia	Cooperatives	*Identifies and explains variations on the Olsonian theme with reference to producers organizations. The author explains not only the relatively, late appearance and overall weakness of producer organization in Tunisia but also the observed variations in their relative strength from one group to another over time.*
Azabou et al (1989)	Tunisia	Labor union	*Analyses the degeneration in the wholesale market of Tunis and the role of porters' union in that process. The theory has explained the relative strength of the porters' union vis-à-vis the other relevant groups and the union's choice of instruments for collective action.*
Bechri (1989)	Tunisia	Credit market action	Analyses the functioning of the credit market in general and interest rate determination in particular. Using Olson's interest group theory explained the determinants of both the level and the structure of interest rates in Tunisia.
Grissa (1989)	Tunisia	State enterprises	Using the theory of collective action, explains the evolution and performance of Tunisia's state enterprises.
Ostrom (1990)	Developed & developing countries	Management of common-pool resources	Explores whether and how common-pool resources can be organized in a way that avoids both excessive consumption and administrative cost. Questions the argument that that the problem of over-consumption is solved by privatization or enforcement imposed by outside force (government). The author argues forcefully that other solutions exist and that stable institutions of self-government can be created if certain problems of supply, credibility, and monitoring are solved.
Ostrom et al (1994)	Developed & developing countries	The management of common- resources	Explores empirically, theoretically, and experimentally the nature of institutions that are developed to protect against overexploitation of CPR. Questions the notion of 'the tragedy of the commons' and demonstrates that the users of commonly held resources have in many instances overcome incentives to destroy the resources and have developed long-enduring institutions that enabled them to utilize these resources more effectively.
Brett (1995)	Uganda	Social problems	Argues that progressive change is not random, but a response to a widespread willingness among people to set aside self-interest and demonstrate high levels of altruism where they can be made to recognize the need for and possibilities of collective solution to problems of social breakdown through institutional reform.
Dejene (1999)	Africa	Regional economic communities	Explores possibilities for explaining problems of economic integration in Africa using a revised version theory of collective action. Demonstrates that institutional factors more specifically failure of collective action can explain the unsatisfactory performance of regional integration schemes in Africa.

In addition to the above, there are also cases where several strands within the NIE are combined for use as a framework for the analyses of development problems. For example, Bentancourt (1991), using the transaction costs theory, property rights, and public choice approach, examine the economic function of an institution in Cuba. Similarly, Stone and Paredes (1996) used a combination of transaction costs theory and property tights theory to examine the relationship between law and development in Brazil and Chile.

The above review has covered applications of the NIE to both developing and developed countries. It is evident from the table that a lot remains to be done in terms of coverage of the various economies of Africa. A single country, Tunisia, has received relatively a lot of attention simply because that country was the focus of the first applied work in the area of the NIE and development (Nabli and Nugent 1989).

Authors of the applied work have come from different disciplines such as anthropology, economic history, political science, and of course, economics. This confirms the argument that 'NIE represents the culminating intersection of a number of different lines of investigation, each interesting in its own right' (Nabli and Nugent 1989a: 1333).

Of the major central theoretical concepts or themes in the NIE, transaction costs theory and property rights are found to be the most frequently used ones in the applied works. Collective action theory is less frequently used. The most recent themes e.g. social capital theory (Ostrom 1997) are rarely applied to the problems of developing economies.

A survey of the literature suggests that the NIE has been applied to a wide range of topics or areas including the ownership and management of natural resources (Higgis 1996; Wynne and Lyne 1995; Alston *et al.*, 1996), plantation agriculture (Clarence-Smith 1995), role of the state in economic development (Handoussa 1995: Greenhill 1995; Booth 1995; Winiecki 1996; Riker and Sened 1996; Borner *et al.* 1992); international economic issues (Adams and Scaperlanda *et al.*, 1996), credit market (Floro and Yotopoulos 1991; Bechri 1989), the underground economy (Feige 1990), socialist economies (Bentancourt 1991), contractual choice and enforcement (other than credit) (Menard 1997; Datta and Nugent 1989; Matoussi and Nugent 1989; Azabou et al 1989; Azabou and Nugent 1989), business sector development (Sullivan 1997), manufacturing industry (Nabli *et al.*, 1989), education (Bsaies 1989), co-operatives (Nugent 1989); altruism (Brett 1995); and infrastructure (Leitmann and Baharoughlu 1998). The NIE has the potential to explain areas that were traditionally considered as not being with in the purview of mainstream economics (e.g. altruism, polity, and property rights).

A Note on Institutional Uncertainty and Investment Decisions in Africa

The NIE has strong implications for Africa's development as suggested by the above review (e.g. see Handoussa 1995; Nabli and Nugent 1989; Dejene 1999a; 1999b; Brett 1995; Ensminger 1996; Eleni 1998). In particular, the Tunisian case (Nabli and Nugente 1989) has convincingly demonstrated the relevance of the institutionalist approach to the African case.

The relationship between institutional theories and the implementation of structural adjustment policies in Africa is investigated by Stein (1995; 1998), who argues that structural adjustment 'because it is derived from neo-classical economic theory which is basically a-institutional and therefore ill-equipped to promote the development of market institutions in Africa'. He suggests that 'if African governments are interested in economic reform that develops market institutions then they would be best advised to consult the institutionalist literature'.

The institutionalist approach has become so relevant to the African conditions that even the World Bank has in the 1990s, shown keen interest in it. Many of its recent publications (e.g. world Bank 1998a; 1998b) emphasize the importance of institutions in the development process. In fact, some authors (e.g. Jakobeit 1999) argue that the Bank has recently adopted a new approach to Africa's development and that institutionalism is at the center of this approach. Accordingly, in its future policy prescription, the Bank may give more attention to institutional factors such as laws and contract enforcement mechanisms, property rights, corruption problems, administrative capacity, etc.

Institutional uncertainty and investment in Africa is a topic that deserves special attention. Institutional uncertainty (defined as the risks arising from a highly volatile institutional environment i.e., there are no clear and irrevocable rules of the game) could be considered as one of the main factors retarding trade and investment activities in Africa as is the case in Latin America (Borner *et al.*, 1992). Institutional uncertainty assumes different types of risks including unpredictable exchange rate, price instability, inconsistent enforcement of contracts, an unpredictable judiciary, discontinuities in the legal system, corrupt practices, frequent changes of policies and guidelines, instability of local government, etc. At the level of the economic agents, institutional uncertainty manifests itself in two different forms: 1) unpredictability of government intervention and 2) lack of consistent enforcement of private contracts. In Latin America, uncertain rules and shaky enforcement bias the decision of individuals and firms in two ways: 1) a retreat to personal transaction with private enforcement mechanisms and 2) very short time horizons of decisions and strong preferences for present consumption instead of investment. At the root of institutional uncertainty in Latin America, Bormer *et al.*, (1992) identify lack of control over the power of the executive because of a malfunctioning system of checks and balances and therefore excessive rent seeking. Rule of law is replaced by the discretionary power of the executive.

Private sector investment can also be deterred by other institutional factors such as lack of well functioning legal system and weak enforcement mechanisms, weakly defined and insecure property rights, underdeveloped capital markets, weak market information systems, rent-seeking behavior of officials (corruption), bureaucratic hurdles, frequent political interference in the private business, and lack of culture of dialogue between government and private sector.

An economist with the World Bank (Serven 1996) concludes that 'uncertainty and instability are important factors behind Africa's poor investment record over the last two decades. Serven notes 'the lack of realism' of some of the assumptions of the conventional investment theory and he underlines the relevance of a new view of investment which is based on the following three assumptions. First, most fixed capital investments are partly or completely irreversible (the initial cost of investment is at least partially sunk). Second, investment decisions have to face uncertainty about their future rewards. Uncertainty can be a powerful deterrent even for risk-neutral investors. Third, investors can control the time of investment, and postpone it in order to acquire more information about the future. Based on these assumptions, Serven constructed new models of investment decisions and presented empirical evidence from different countries.

One conclusion he reached is that, from the view point of investment, the stability and predictability of the incentive framework (relative prices, demand, interest rates, taxes) may be much more important that the level of the incentives themselves. This implies that huge incentive may be necessary to make investors forego the opinion to wait for more information and commit themselves to irreversible investment projects.

Africa's weak private investment performance is partly explained in terms of institutional uncertainty as formulated by Serven (1996). His conclusion is that, 'institutional reforms protecting property rights and fostering social consensus may be a promising avenue' at a more fundamental level than the policy reforms currently being implemented in Africa.

6. CONCLUDING REMARKS

This study has attempted to address conceptual problems pertaining to the term 'institutions', identify factors that led to the emergence of the New Institutional Economics (NIE), define the subject matter of the NIE and underline its importance in economic activities, and review the empirical literature on the applications of the NIE to problems of development.

What emerges from this paper is that the new institutionalism can provide us with important theoretical tools to understand development problems. The three major themes of the NIE, i.e. the transaction cost, property rights, and collective action

theories can more effectively address issues that have remained more or less puzzles when analysed using conventional approaches. The NIE is important because it challenges the dominant role ascribed to the market by the orthodoxies of the last two decades. Moreover, the NIE can, perhaps, bring an end to the isolation of the economist because, in the words of Harriss *et al.,* (1995:1-2), it is 'a body of economic theory which ascribes an important role to ideas and ideologies, and one which is accessible to other social scientists, seeming to open up the terrain of genuinely inter-disciplinary enquiry'.

Further research is required to investigate issues raised in this study concerning the theoretical and practical aspects of the institutionalist approach. It is not yet clear whether the NIE is a full-fledged theory (body of thought) or whether it is something eclectic, i.e. 'the work of a loose collection of economists and political scientists'. As the applied research on Africa is limited, there is a need to undertake more studies on the relevance of the theory to the real conditions of African economies. There is also a need to cover more areas of inquiry such as indigenous institutions and international economic relations.

NOTES

This point was already noted by Nabli and Nugent (1989a: 1333): 'it would be a monumental task to synthesize it (NIE) in its entirety.' Also, we note that in this study we stick to the term ' the New Institutional Economics', although few writers like Eggertsson (1990) use the term 'neo-institutional economics'.

Here it should be noted that we are not considering standard econometric exercises which purport to have gone institutional (e.g. see Burki and Perry 1998).

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AN ASSESSMENT OF THE GRAIN MARKETING POLICIES AND ITS IMPACT ON PEASANT PRODUCERS: THE CASE OF ARSI ZONE

Teshome Negussie*

Abstract

In late 1970s and through 1980s, state control in agricultural marketing was taken as the best for the development of peasant agriculture. Later, however, state failure was claimed and the need for market oriented strategy has been advocated. Both had their own impact on peasant producers. This paper discuses their impact on the peasantry. It is found that it should not be a question of statist or markets substituting each other but should operate in a complementary way to improve the agricultural marketing system and enhance peasant agriculture.

1. INTRODUCTION

1.1. Statement of the Problem

Efforts have been made to tackle food shortages in Ethiopia through different policy measures. Various rural development projects and programmes have been undertaken. Co-operative farms have been promoted in rural areas during the 'socialist' regime. Much of the agricultural budget was diverted to state farms and co-operative farms, giving less attention to peasant[1] agriculture. Furthermore, the state was involved in the marketing and pricing of agricultural products. But, instead of improving, the situation seems to have worsened. Grain marketing and pricing policies appear to have had disincentive effects on peasant producers. Some studies reveal that these policies have hampered the growth of the agricultural sector (Franzel 1989; Cohen *et al.*, 1988). Indeed, because agriculture, which is dominated by the peasantry, is the foundation of the economy of Ethiopia, policies which negatively affect peasant producers will have a negative impact on the country's economy as a whole.

In the grain marketing system, attention has been focused on a few regions with good agricultural potential. Arsi is one of these areas. More than 90% of the

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population of Arsi zone reside in rural areas and in one way or another depend on the agricultural sector for their survival. Data from 1990/91 to 1993/94 reveals that 96% of the area cultivated and of the volume of food grain production of the Arsi zone comes from the peasant sector, while the rest is produced by state farms (Central Statistical Authority, various issues). The peasant sector is characterised by low production and productivity levels, which can be attributed to a lack of resources, low infrastructural development and low technological inputs. It is, however, categorised as one of the surplus producing areas of the country. Surplus was extracted in the 1980s from the zone's peasantry through a quota delivery system and low fixed prices by the state's marketing parastatal, the Agricultural Marketing Corporation (AMC). Peasants were discouraged from selling in open markets. Through such mechanisms, Arsi and two other surplus producing areas, Shewa and Gojjam, used to deliver more than 75% of the purchases of the AMC (Alemayehu 1994a; Cohen *et al.*, 1988; Cohen 1987).

By reversing past practices, the government liberalised the grain marketing system in 1990. This reform remained intact after the change of the government in 1991. The general trend of policy, which is part of the Structural Adjustment Programme (SAP), promotes a gradual withdrawal of the state, leaving resource allocation to market forces (Alemayehu 1994a; Fantu *et al.*, 1992; Walday 1992). The effects of the policy on peasant producers needs to be examined, because while different studies have been made on the grain marketing system and its effect on peasant producers at the national level, at the local level few studies have been made. This paper therefore investigates the impact of the grain marketing system on peasant producers at the local level. The results of the paper may be helpful for scholars who wish to further study the area and for the policy makers who shape agricultural development policies at the national level and at the local level.

1.2. The Data and Scope of the Study

This study is carried in Arsi–central Ethiopia. Arsi is a reasonable area to be studied. It is endowed with agro-ecological conditions that are suitable for agricultural production. Since the 1960s, Arsi zone has been a focus of agricultural development and state presence is prevalent. Different production systems such as co-operatives, state farms and private peasant production systems have been practised in Arsi zone. It was also a focal area of the AMC's operation.

Due to time and data constraints, the study covers only the major food grains (wheat, barley and *teff*) in Arsi zone. It is, however, an acceptable limit because wheat, barley and *teff* cover more than 80% of the volume and area of the food crops produced in the zone and are the major staple foods of the population. However, there is a limit to this paper: it depends on secondary data, while a full study would require exhaustive examination of marketing and consumption patterns.

The data used is obtained from various sources and covers the period from 1982/83

to 1993/94. Data on production of the major crops have been obtained from the Central Statistical Authority (CSA). Cost of production data have been obtained from on-farm trial sites conducted by Arsi Agricultural Development Department (AADD). The Department is also a source of data on fertilizer consumed by the peasant sector and the prices for fertilizer. Data regarding the prices of grains, fixed farm gate prices prior to market liberalisation policy and free market prices, have been obtained from the AMC. Average producer prices data have been obtained from the data collected by the CSA. The CSA is also the source of the population data used in this study. Other research works previously undertaken in this field of study are also sources of data for this paper.

2. ANALYTICAL APPROACH AND CONCEPTUAL FRAMEWORK

2.1. Analytical Approach

For this study, an historical approach to the problem will be deployed, giving emphasis on meso-level problems. This will help us to understand policy as a process; the context behind adopting a strategy and the rationale governing present policy choice.

The effect of statist marketing and pricing policies will be analysed by comparing the prices delivered by the AMC with free market prices and the cost of production. The impact of the pricing system on input utilisation will be analysed by using the fertilizer value-cost ratio.

The marketable surplus of the Arsi Zone will be estimated and used to judge the extent to which the AMC hindered the peasants from selling their produce on the free market, where they might have received a better price for their produce.

To analyse after market liberation grain marketing system and its impact, the institutional changes in the marketing system and the behaviour of grain prices will be assessed. The new grain marketing policy gave due attention to free market prices that are governed by market forces. The incentive power of the price will be assessed by looking at the price elasticity of output, with its well-established weaknesses, of the major food grains selected for this paper.

The conceptual framework for this study explores general views on states and markets and assesses agricultural marketing and pricing policies under state intervention and free market economies.

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The conceptual framework for this study explores general views on states and markets and assesses agricultural marketing and pricing policies under state intervention and free market economies.

2.2. General Views on States and the Markets

During most of the 1950s to the 1980s, there was an assumption that the state had a central role to play in accelerating the pace of economic growth. Moreover, regulation and control of markets were pursued as essential measures in promoting social welfare. The inability of markets to deliver the ingredients of development, taken together with the imperfection of many markets, provided set of 'market failures' that state action was considered necessary to overcome. These 'market failures' include (see Ellis 1996; Kibre 1994): a) failures of competition–the existence of various types of monopolies and hence generally inefficient outcome; b) failures of provision of public goods–class of goods and services that private markets are not prepared to supply; c) externalities that are spillovers created by economic activities; d) incomplete markets–where markets fail to produce goods and services that people desire even at price above production cost. Examples are credit markets where they are weakly linked to the modern sector because of weak transportation system, communication, marketing and credit facilities, etc.; e) information gap–markets have tendencies to under-produce information to which access can be limited like information on prices and technologies and f) poverty and inequality–markets may result in a highly skewed distribution of income and wealth or an incidence of poverty that are regarded as socially and ethically unacceptable by the majority of the society.

This view of 'market failure' is based on the assumption that the state acts benevolently to serve the public interest. However, the assumption that the state was benign in its intentions and its policy is centered around the question of how best the state could maximise social welfare is questioned. It is this quest that resulted in the identification of 'state failures' which one would argue is more detrimental in its impact on the material well-being of people in society than the 'market failure' (see Ellis 1996).

Particular emphasis on 'state failure' has been placed on the pervasive inefficiency and impropriety of state institutions in many LDCs which lead to assume the state as 'parasitic' or predatory than a 'benign' or beneficial. A second approach drives from public choice theory of the neo-classical school. This approach stresses the self-interest motivation of government officials and state employees. This monopoly power enables them to maximise the surplus accruing to themselves. A third approach considers the state as operating on the basis of personal rules systems override and replace the rule of law. The weaker the person in power the more the person has to resort to personal rule mechanisms to stay in power. Apart from these arguments, the following constraints may be placed against intervention (see Ellis 1996; Kibre 1994).

a) information failure–it is always wrong to assume that state is necessarily fully informed about the nature of a given problem or the full impact of its policy measures.

b) implementation failures–though a policy is well designed to increase social welfare, expected gains may be lost due to poor implementation capacity. This may arises from the difficulty in improving the accountability and control of the bureaucracy.
c) second–best theory–when market failures exist, state action to correct any single one of them may result in a worse outcome.
d) motivation failure–state officials are mainly paid low wages which necessitate them to search another source of income for subsistence life.

2.3. State Intervention in Agricultural Marketing

Although the form of state intervention during the 1980s substantially changed than in 1950s, all governments in developed countries and LDCs intervened in agricultural markets to accelerate the rate of growth of agricultural production and the generation of a surplus from the sector (Spoor 1994)

At least three main reasons for the state to intervene in agricultural markets were articulated: (i) income distribution; (ii) price stabilisation; and (iii) surplus transfer (see Spoor 1995).

Income Distribution

In many African countries, market intervention has been used as an instrument for political control and the market place was conceived as a political arena. Governments tried to influence income distribution for political or social reasons. Income distribution can be manipulated by changing the prices of basic goods, particularly food. This was done on the assumption that lower income groups spend more of their income on food. Lower food prices would benefit these groups. As a result, there was highly subsidised consumer food prices. Price control of the urban retail trade was accompanied by state intervention in the distribution and rationing of food (Bates 1981). However, the manipulation of agricultural markets affected both consumers and producers. The price of food has very differential effects on peasants and landless labourers, when compared to the urban poor. The low producer prices provided by the state parastatals have had a distinctive effect on production and reduced the marketing of any surplus above home consumption (Streeten 1987). As a result, states use subsidised inputs and public investment to increase production.

Price Stabilisation

Output price policies were mainly designed to stabilise or increase producer prices. They require state marketing interventions to achieve their aims. This is mainly done by fixing producer prices, which could only be fully implemented if all market output was channelled similarly; otherwise, even with less intervention, traders could have a destabilising effect. The state system of using buffer stocks was designed to place limits on the instability caused by such interventions (Eliis 1996). However, bulk grain

buffer stocks have proven to be costly in operation and resulted in high losses. Re-assessment of this system has come to emphasise on-farm storage and the role of small traders. In general, however, if there are effective price policies and efficient management, grain buffer-stocks can be useful (Spoor 1995).

Inter-sectoral Surplus Transfer

This is related to income distribution, discussed earlier. It played an important role, specifically in those countries, which have followed a socialist strategy. Principally, they have sought to follow Preobrazhensky's argument of 'squeezing agriculture'. Based on the recommendation of Preobrazhensky's concept of primitive socialist accumulation, Russia introduced government control over all markets. The price squeeze that resulted from this policy of holding down food prices was met by the peasants' massive withdrawal from the market, which threatened to bring the Soviet economy to the brink of disaster. Stalin's solution, the forced collectivisation of the peasantry and state farms, broke the power of the peasants and managed to industrialise peasant Russia. However, the human costs were enormous, and long-term agricultural productivity in Soviet economic development was a major bottleneck. Industrialisation by reducing the relative prices of agricultural products can thus harm the output of the rural sector (Bacha 1989). Moreover, this siphoning off agricultural resources did not always result in transfer of funds to the state. The transfer was often off set by increasing costs incurred by parastatals or waste in armaments or bureaucratic consumption (Spoor 1995).

These interventions require instruments of intervention. Three instruments of market intervention by governments in developing countries were predominant throughout the 1960s and 1970s. First, the imposition of official or administrative prices at producer, wholesale and retail levels, to achieve some or all of the objectives for market intervention; second, there was transformation of the market through the creation of parastatal marketing agents, supplemented by the banning or control of private trade by licensing, movement restrictions, price inspections, and promoting other non-private agents, such as marketing co-operatives; and thirdly, intervention in input markets (Ellis 1996).

Price Policy and Market Intervention

Governments of LDCs have intervened in agricultural markets by fixing producer and consumer prices. They fixed food prices as low as possible in order to keep urban consumer food prices down. The lower producer price rather proved to be a disincentive to producers and resulted in unintended effects such the development of parallel markets (Thorbecke 1993).

LDCs also used pan-territorial, spatially uniform, pricing systems. This was defended for reasons of not discriminating against peasants in the remotest areas. Peasants who were living in marginal areas received low prices, after taking into account

transportation costs. If transportation costs are heavily subsidised, these peasants were in advantageous position. However, uniform pricing systems are not attractive for peasants who are closer to the market. They could have had the possibility to receive better prices than the fixed uniform price set by the state because they incur lower transport costs and have alternative outlets to market their products than peasants in remotest areas.

State Intervention in the Structure of the Market

During the last four decades, the governments of LDCs have substantially altered the structure of their agricultural markets by introducing marketing parastatals, limiting or banning private trade and promoting other non-private marketing agents. Parastatal marketing boards became the leading agents of market intervention policies in LDCs. They were seen as efficient in avoiding any unnecessary inter-mediation between producers and consumers. Private traders were often considered as exploitative and were often not allowed to operate in the wholesale grain trade. If they did, they often operated under a strict licensing system, regulation of prices and marketing margins (Ellis 1996). However, this has resulted in inter-regional and interstate smuggling as well as in higher marketing costs. Corruption among officials also produced disincentives for marketing output (Spoor 1995).

In general, state grain market organisations and policies to restrict private trade had adverse effect on smallholder income and food production in Africa. Low producer prices reduced farmers' incentives to use improved inputs and increase grain production. Market suppression has harmed the rural poor by distorting the structure of their outputs and incomes. If resource extractions are strong enough to suppress many agricultural markets it is wrong to expect structural or technical change to bring major gains to many farmers (Lipton 1991; Franzel *et al.*, 1989).

The disincentive character of state intervention can be examined by various methods. The excessive extraction by the parastatals can be explored by comparing the marketable surplus and the amount the peasants were obliged to sell to parastatal organisations; the relationship between the fixed farm gate prices paid to peasants and free market prices; the terms of trade as expressed by the consumer price index and the price paid to peasants; the cost of production as compared to the price received by the producers; and the fertilizer value-cost ratio. Further, other non-measurable policy instruments can also be examined.

2.4. Agricultural Market Liberalisation

The liberalisation of agricultural markets started in the 1980s, when a great number of countries adopted liberalisation policies. These policies came in in the belief that the working of the market could overcome the adverse effects of state intervention (Spoor 1995). It was recommended that LDCs get rid of state intervention so that market prices reflect opportunity costs and benefits (Streeten 1993). Market

liberalisers argue that the economic conditions of many countries have only improved through market liberalisation. Its advantage is perceived in terms of improved resource allocation and technical efficiency which provide an incentive to farmers (Thompson 1991).

In Sub-Saharan Africa (SSA), this change was identified by the International Bank for Reconstruction and Development (IBRD) (1981a) study known as 'Berg Report', which suggested far reaching reforms and radical deregulation. Emphasis was shifted from the public sector to the private sector, based on a perception of state failure. Liberalisation included the abolition of parastatal import and export monopolies, domestic monopolies, deregulation of many food markets, an increase in private sector participation, cuts in food subsidies and devaluation (Alemayehu 1994a). However, in general, neo-liberals have concentrated on price liberalisation. They have emphasised that price liberalisation can contribute to agricultural performance in LDCs, and that government actions distort the structure of agricultural outputs and incomes. The World Bank has made price liberalisation a conditionality for its loans on the grounds that since prices are the primary determinant of the incentive structure for agriculture, an almost universal concern of adjustment loans must be to 'get the prices right' (see Lipton 1991).

Liberalisation advocators assumed that reform could improve the marketing system and enhance agricultural production. The reality of the resultant effect can be explored by a variety of ways. First, the institutional development of the marketing system, the different market participants and their role in the marketing system can be examined. Second the impact of the new pricing system can be looked at in terms of the share of producer prices in wholesale and consumer prices. The net profit of the wholesale traders can be estimated and then analysed against the cost of capital. Lastly, the response of the peasant's output to price changes can be examined. The own-price elasticity of supply could be estimated for the output of the grains under study. These factors are explored below in the Arsi's context.

2.5. States Versus Markets: Complements or Substitutes?

One may agree with the inefficiency associated with state intervention and the need to liberalise. However, one needs to ask who benefits and who suffers from reform. Studies show a range of unintended and undesirable effects. Liberalisation is mainly implemented independently of the complexity of and problems in markets. It is not wise to ignore the realities of market structures and the institutional context in which policies are implemented. For both, state interventionists and the neo-liberals, agricultural markets and the dynamics of policy implementation remain a 'black box' (Spoor 1995:36). Structural adjustment programme, may have little impact upon the operation of markets. Indeed, it may enhance inefficient resource allocation by enhancing monopoly power. For markets to efficiently operate, they need to be strengthened by non-market mechanisms which co-ordinate allocation and

distribution so that economic agents can deal with uncertainty and bounded rationality (Akram-Lodhi 1997). Therefore, states cannot be ignored in the reform process. The assumption by the reformers that optimal prices and comparative advantage will stimulate growth may not hold true without the participation of the state.

Market liberalisers may be wrong to focus on state actions disturbing farm prices when physical barriers in the public and private sector environment may also affect farm incentives to produce and exchange. Market suppressers may be further wrong when they imply that market relaxation a) comprises 'getting the price right'; b) is achieved mainly by government abstention from distorting markets in farm output and input prices; c) can often achieve, on its own, large and rapid rises in total farm outputs; and d) can substitute for the structural or technical changes necessary to permit a big response to market incentives (Lipton 1991).

The need for the state to intervene in the market is further elaborated by Rao (1994). He argues that prices may provide the incentive required of producers but should be supplemented by state intervention. States should provide infrastructure, organise research and extension and regulate supplies of inputs critical for agricultural growth. Even in a free market economy, the state would have to intervene in the commodity markets in the situation of a price collapse or an extreme scarcity of commodities. Moreover, the state needs to find ways to support farmers to become self-reliant. The state should enhance irrigation practices, evolve varieties capable of withstanding adverse conditions, and assist in improving cultivation practices in order to reduce fluctuations in production. Better roads and market infrastructures, wide and quick market intelligence and fair marketing practices would help farmers get better returns in the market. Supportive intervention by the state should promote growth by developing agriculture, not discriminating against it. It could be expected that with growing and increasing participation in commodity markets, farmers would gradually improve their understanding of market operations and their ability to make effective use of such understanding in their own decisions and actions (Rao 1994).

Finally, then, both the statists and the liberalisers cannot alone create a conducive environment for an efficient marketing system which helps to increase peasant production. It should not be a question of markets or states. Both should operate in a complementary way to improve the marketing system and enhance peasant production.

3. EVOLUTION OF THE GRAIN MARKETING SYSTEM IN ETHIOPIA

In the previous section, literature on general views on states and the markets and the policies of marketing of agricultural products under statist and market systems were reviewed. These policies will enhance or retard the marketing of food from peasant

agriculture. In this section, the grain marketing system in the Ethiopian will be reviewed to look at policies at a macro level that will help to assess their effect at the meso and then at local level.

3.1. Grain Marketing during the Period 1974-90

3.1.1. State Intervention in Grain Marketing

Government intervention in grain marketing started in 1950 with the establishment of the Ethiopian Grain Board to undertake export licensing, quality control and market intelligence. It was followed by the establishment of the Ethiopian Grain Corporation in 1960 to participate in grain marketing and bought grain in larger amounts. Both were ineffective: the former did not hold stocks and could not stabilise the market while the latter suffered from limited market information, working capital and a price policy which made it unable to compete with private traders (Alemayehu 1989).

Active participation by the government in grain marketing developed in the post 1974 period (Alemayehu 1989). The main reasons for the government's participation in grain marketing were both ideological and pragmatic. On the ideological side, there was a strong belief that merchants and other intermediaries exploited the peasantry and consumers and that state intervention was required to curtail exploitation. The pragmatic reasons were associated with the post revolutionary land reform. Following the 1975 land reform, the harvest of farm production was estimated to be relatively good but nevertheless marketed surplus declined. The end of share tenancy in grain surplus areas led to increased on-farm consumption; thus the share of peasant production that was marketed, through private traders, declined from 25% to 10% between 1974 and 1978 (Franzel *et al.*, 1989). This led to high urban food prices which increased pressure on lower income urban groups such as urban civil servants and workers. Basic grain prices jumped by more than 30 per cent in 1976 and continued to rise in the following years. This pragmatic necessity coincided with and reinforced the ideological trend toward establishing agrarian socialism (Dessalegn 1994; Franzel *et al.*, 1989; Cohen *et al.*, 1988).

To fulfil its objectives, government sought ways to increase the volume of the marketed surplus while, at the same time, keeping urban prices low. Government established state farms and imposed government control over the distribution of inputs to more 'reliable' producers such as peasant producer co-operatives and peasant service co-operatives giving less attention to peasant agriculture (Cohen *et al.*, 1988).

3.1.2: Purchasing Operations of the AMC

In 1979/80, the marketing system, under which the AMC had competed in its first four years with private traders, was changed. The assigning of quotas at prices determined by the government was established (Befekadu *et al*, 1990). Each year,

grain quotas were set for each crop and each region by the Central Planning Supreme Council (CPSC). These quotas were sent to the regional Grain Purchase Task Forces (GPTFs) and to the AMC for implementation. The regional quotas were passed down and distributed among the districts (Awrajas) and the sub-districts (Woredas) to the service co-operatives (SCs) and the peasant associations (PAs) Finally, the latter distributed their quota among peasants (Cohen *et al.*, 1988; Franzel *et al.*, 1989; Alemayehu 1989).

The minimum grain quota for a PA was 100 quintals in 1979/80, but this floor was raised to 150 in 1980/81. The size of the quota per family was intended to be related to the marketable surplus available. But, evidences suggested that the quota was inequitably allocated among PAs and among regions; a few regions were obliged to supply a larger portion of the AMC purchase (Alemayehu 1989; Franzel *et al.*, 1989).

Licensed grain traders, on the other hand, had to supply a minimum of 30% of their purchases in 1979/80, which was then raised to 50% in 1980/81. They were required to sell their quota to the AMC as a condition for receiving permits to transport cereals, pulses, and oil seeds from one region to another. Unless traders fulfilled this criterion, they could not sell any grain on a free market. On the other hand, state farms and Producers Co-operatives (PCs) were also supposed to deliver all their marketable output to the AMC (Alemayehu 1989).

Peasants who failed to fulfil their quota were not allowed to use the service co-operative shops to buy non-agricultural commodities. As a final sanction, they could be deprived of the right to use land. There are cases where peasants who failed to fulfil their quota obligations from their own produce were forced to purchase the shortfall from other producers or on the market (Befekadu *et al.*, 1990). Even those who were mainly dependent on relief assistance were obliged to deliver their quotas on time and at the right collection centres. A study made by Dessalegn (1991) in the Wollo region of Ethiopia found a number of peasants that had to sell livestock or other possessions to buy the grain required of them on the free market and at free market prices, and to deliver it to the authorities at AMC prices, involving a loss of anywhere up to 300 per cent (Dessalegn 1991:96). This shows the need to have a thorough look at the pricing system followed by this parastatal organisation.

3.1.3. The Pricing System of the AMC

In the development of controlled grain prices in the post 1974 period, three distinctive phases can be identified (Alemayehu 1989).

During the first two periods (1975/76 to 1978/79 and 1979/80), government attempted to stabilise prices through legislative price control. The government did so because fixed prices were assumed to be detrimental to producers and consumers. However, despite all revisions made, the result proved unsatisfactory. The major cause for the instability of fixed prices was that they were not established at a level

attractive to both producers and traders. As a result, agricultural supply fell below demand (Befekadu *et al.*, 1990).

Thirdly, in 1980/81 the government adopted a fixed nation-wide pricing policy. The prices paid by the AMC were established by the Council of Ministers for the farm gate, wholesale markets and state farms. The system of pan-territorial pricing was in force and provided peasants throughout the country with the same price for the same type and quality of products. There were no consideration of geographic difference, transport and storage costs, and demand. The wholesale price was set at Ethiopian *Birr* four to five per quintal above the price paid to farmers, and the state farm price was 20% above the wholesale price (Alemayehu 1989; Cohen *et al.*, 1988).

Peasants were also exposed to unfair terms of trade. While they were forced to sell at fixed prices, non-agricultural products tended to get more expensive from year to year. This pattern of holding prices down was intended to subsidise consumers at the expense of the agricultural sector. Peasants sold and delivered their products at cheap prices and in turn bought non-agricultural products and got social services at higher prices. Thus, the terms of trade moved against agricultural producers, who had to pay more in terms of agricultural output for commodities which they purchased from the industrial sector.

The following data on rural consumer items indicates how prices of non-agricultural products and services increased. If we contrast this with the fixed AMC's farm gate prices, we can easily understand the disincentive effects on the peasants. For example, the 1989/90 AMC farm gate price index was 7.7% for *teff*, 6.5% for wheat, and 7.4% for barley over their 1982/83 prices. On contrary, the 1989/90 rural national consumers price index for food, cereals, clothing, medical, and education has shown a growth of 42.5%, 39.5%, 17.2%, 23.4%, and 28.5% over their 1982/83 prices, respectively. The implication is that these policies created disincentive structures in the agricultural sector, particularly peasant agriculture. This disincentive called for a new policy.

Table 3.1. AMC's Farm Gate Price Indices for *Teff*, Wheat and Barley and Rural National Consumers Price Index (1982/83-1989/90)
(1982/83 = 100.00)

Year	Teff	Wheat	Barley	Food	Cereals	Clothing	Medical	Education
1982/83	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1983/84	100.00	100.00	100.00	99.00	101.70	100.40	110.30	103.00
1984/85	100.00	100.00	100.00	161.50	193.90	100.00	131.40	112.00
1985/86	100.00	100.00	100.00	150.10	164.10	101.40	118.80	122.70
1986/87	100.00	100.00	100.00	126.20	120.90	105.80	123.00	132.00
1987/88	107.70	106.50	107.40	131.60	118.20	103.70	129.90	133.20
1988/89	107.70	106.50	107.40	145.90	140.00	106.70	127.90	131.20
1989/90	107.70	106.50	107.40	142.50	139.50	117.20	123.40	128.50

Source: Computed from data provided by AMC Annual Reports; CSA (1994), Statistical Bulletin 128.

3.2. The Post 1990 Grain Marketing System

Government regulations, inter-regional fixed prices and quotas had a negative impact on peasant agriculture. These policies resulted in chronic food shortage which had emerged as the major problem in the Ethiopian economy. Since 1980, available grain equivalent food production per capita declined from 162.4 kg. per capita grain equivalent in 1975/76 to 128.7 kg. per capita grain equivalent in 1988. The poor performance of the cereal sector led policy makers to question Ethiopia's cereal marketing policies (Kuma *et al.*, 1995).

Different international organisations, governments and scholars began insisting on a radical liberalisation process. They set conditions related to policy changes in order to get access to loans (Cohen and Isaksson, 1988). Most of the conditions set by the donors were not accepted by the Provisional Military Government of Ethiopia (PMGE) because of the underlying ideological motivation of transforming peasant agriculture into agrarian socialism (Alemayehu 1994a; Walday 1992).

However, the impetus for market based reform deepened in December 1987 when the government introduced its 'agricultural marketing and pricing policy reform' so as to stimulate food production. This policy statement for the first time acknowledged, among other things, the need to reorganise problems of marketing, pricing and distribution systems of goods and services. Further, it acknowledged that increased output in the peasant sector could not be achieved without improved infrastructure, soil conservation, better provision of fertilizer and improved seeds and farm implements. The government openly admitted the weakness of the late 1970s and 1980s policies that discouraged the private sector and the free market system. This partial retreat from socialism was further influenced by the change in the socialist block and internal factors. The ideological and economic reform of the USSR and other Eastern European countries and the low performance of public enterprises at home forced the government to introduce a liberalisation policy (Fantu 1994; Walday *et al.*, 1992).

The policy reform, which was adopted in March 1990, included (Fantu 1994; Walday *et al.*, 1992):

a) allowing the food grain trade to function without restrictions;
b) giving the right to abandon co-operatives to members if they so wish to;
c) abolition of the fixed price and quota system; the AMC was to compete with private traders in the open market;
d) allowing the private sector to operate in grain marketing in a free market environment.
e) inheritable legal usufructuary rights on the land peasants tilled, and the right to sell their produce privately;
f) removing capital ceilings for private investment; and
g) selling and leasing unprofitable government enterprises to private entrepreneurs.

The reform marked a significant shift from extreme regulation to extreme deregulation. Following this announcement, peasants seized the opportunity to take over unused government land, including state farms, disbanded producer co-operatives (PCs) and removed government appointed PA leaders. However, the rapid disintegration of rural institutions and political instability throughout the country hampered the implementation of the reform.

Following the downfall of the military government in 1991, the new government, established in May 1991, committed itself to increasing the role of the private sector in business and trade. In November 1991 the transitional government issued Ethiopia's Economic Policy, to be implemented during the transitional period. This policy re-affirmed the appropriateness of the grain marketing reform of March 1990 (Alemayehu 1994a). Based on the economic policy most of the previous laws restricting competition were replaced. New regulations removed most of the barriers, which prevented competition in grain production, transport, processing and marketing. Producer prices increased. Resource allocation was no longer discriminatory among participants. Farmers could freely sell their produce at prevailing prices in the market. Traders could move agricultural products from one area to other though controls stations (*kellas*) still existed. No restriction on the margins of grain traders were enforced (Kuma 1995).

After the reform, in 1992, the AMC also was reorganised as the Ethiopian Grain Trade Enterprise (EGTE) Its objectives are: to stabilise markets and prices for farmer's produce; to encourage farmers to increase their output; and to protect consumers from unfair price increases. It also sought to generate foreign exchange by exporting grains as well as maintaining buffer stocks for market stabilisation (Mulumebet 1994). Its purchase share, however, has declined since the reform.

4. THE GRAIN MARKETING SYSTEM IN ARSI

In the previous section an evolution of grain marketing in Ethiopia was made. As earlier discussed in the paper, there have been different policies adopted to transfer food grains from peasants to consumers. The policies have mainly been made at the national level and then applied to the lower levels. This section explores the agricultural marketing system of Arsi to examine the impact of those policies on peasant producers.

4.1. Pre-grain Market Liberalisation

4.1.1. Policy Instruments of the AMC's Operation

The policy instruments that were adopted by the military government during the command economy period included the fixed pricing systems, the obligatory quota delivery of grain, the regulation of market days, the setting up of *kellas* (road blocks),

and the regulation of trade by the banning of traders (Alemayehu 1994a; Franzel *et al.*, 1989).

Low and Fixed Prices

The government used a fixed, pan-territorial pricing system. Peasants were obliged to sell their produce at prices lower than that in free markets. The prices paid farmers were the same for output of any quality in all areas in the zone. As compared to local free market prices, the AMC's prices were much lower (Annex, 4.3). As Arsi was a surplus producer and was also located almost at the centre of the country, peasants would have benefited from selling their produce at free market prices.

The Obligatory Delivery of Grain

In the late 1970s, SCs were established and made to buy grains from the peasant sector and then sell all their purchases to the AMC at prices offering a small margin over the fixed farm gate prices. Soon, the SCs were made effective agents of the AMC. The PCs were also required to sell their marketable outputs to the SCs, while peasants were required to deliver annually set quotas.

Quotas were theoretically determined by the size of land holdings, the yield of the holdings as determined by the soil fertility of the land, the number of the household's dependent members, the production situation of the previous years, and the economic well-being of the holder. In Arsi's case, however, assigning quotas to the peasantry was largely dependent upon the will of the politicians. Some PAs used quota allocations to reward those who supported them and to punish those who fought their actions in leading the PA (Cohen 1987). In Arsi, peasants who did not fulfil their quota obligation were prohibited from selling grain in the open markets and their movement was strictly controlled at *kellas* and elsewhere. There was also punishment in the form of restrictions in buying consumer goods and getting fertilizer or improved seeds at SCs.

During the five years covered in Table 4.1 below, the AMC purchased about 3.92 million quintals of grain from Arsi. On average, over 70% of the purchases were from the peasant sector; over 80% of the grains purchased from the peasant sector constituted *teff*, wheat and barley (Annex 4.2.).

Two important issues then emerge from Table 4.1. First, in spite of the government's policy of giving attention to state farms, the urban economy remained dependent on the peasant sector for its food supply. Second, one may judge that food consumption of the peasants could not have improved very much. A survey of selected households conducted in two places in Arsi in 1986 revealed the severity of the AMC's quota. For example, the AMC's purchases accounted for 75% of Bekoji and 63% of Abomsa area's marketable products (Franzel *et al.*, 1989).

Table 4.1. Share of Peasant Sector and State Farms in the Supply of Grains to the AMC (1982/83-1986/87)

	1982/83	1983/84	1984/85	1985/86	1986/87
Total purchases					
('000 quintals)	1038.66	775.48	419.30	748.10	937.74
Percentage share of					
Peasant sector*	77.15	62.02	40.15	71.91	80.40
State farms	22.85	37.98	59.85	28.09	19.60

* Includes grain supplied by PAs, SCs, PCs, and private traders.

Source: Arsi Planning and Economic Development Office (APO), 1988; Annex 4.2.

Restriction of Market Days

Market days were also restricted to once a week, and arranged to be on Saturdays or Sundays. This was done to increase the time farmers spent working on their farms and thus increase production so that they would have more surplus to supply the AMC. However, both the suppression of private grain trade and the control of traditional market days prevented rural markets from playing an important role in marketing peasant produce and supplying food to other regions. Traders were unable to visit different rural markets on different days.

Kellas (Check points)

Parallel with restricting market days, *kellas* were set up along major routes from Arsi to other regions. Small roadside markets were closed. There was the manning of gates of rural markets on major market days with squads, who prevented people with grains from entering the market before fulfilling their assigned quota. They forced the peasantry to sell their grains to SCs even if they fulfilled their quota. This was even done in situations where the PAs could not fulfilled its assigned quota.

Banning of Traders

To promote state control over the grain trade, the administrators of Arsi zone restricted the private sector. Traders were totally prohibited from moving their stocks not only to the other parts of the country but also within Arsi zone. They were made to sell all their purchases to the AMC at a margin of *Birr* five over the fixed farm gate prices. They sold the grain at prices less than they bought in parallel markets. They incurred some losses, though in many cases the losses were covered by selling grains illegally at higher prices in parallel markets. Thus, there was active involvement by traders in local parallel markets. In 1984, traders were totally banned from Assella, the zonal capital and the main market centre. The government confiscated their stocks and transferred them to SCs. Throughout Arsi, petty traders were denied licences or harassed, partly through political pressures from the SCs,

number of peasant households in Arsi, which gives about two quintals per peasant household during the same period.

To know the possible excessive effects of the quota delivery system, we need to take the purchase of the AMC from the peasant sector including the purchase from traders. We need to compare the estimated marketable surplus with the amount of grain actually purchased by the AMC. The base year taken for this calculation was a year widely considered to be a 'normal year' in the country, 1982/83. The last year, 1989/90, was the year when the quota delivery system was officially abolished. Comparing these figures might give us some insight about the burden on the peasantry.

Table 4. .2. Share of the AMC's Purchase in Peasant's* Marketable Surplus (1982/83-1989/90)

	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
Marketable surplus from the poasant sector ('000 quintals) (1)	1325.0	406.3	-88.1	258.6	982.8	2192.8	1576.6	2404.8
AMC purchases (2)	801.3	480.9	168.3	538.0	753.9	672.3	512.2	305.2
from peasants ('000 quintals) (3)	477.1	311.9	155.7	526.8	748.4	635.4	333.4	171.1
from traders ('000 quintals) (4)	324.2	169.0	12.6	11.2	5.5	36.9	178.8	134.1
Percentage share(2/1)	60.5	118.4	-191.0	208.0	76.7	30.7	32.5	12.7

* Includes purchases from private traders.

Source: Own computation based on data obtained from APO, 1988; Central Ethiopia AMC Annual Reports; Annex 4.1.

Table 4.2 shows that 1983/84 to 1986/87 was the worst period for the peasants. In 1982/83, peasants delivered 60.5% of their surplus, while in 1986/87 they delivered 76.7% of their marketable surplus to the AMC. During these periods, the urban population of Arsi was estimated to be 139,000 and 163,200 (estimated from CSA 1996) and they required 278,000 and 326,400 quintals, respectively. In 1982/83, the zone had about 245,000 quintals of grains in excess of the needs of its population. In 1986/87, however, Arsi required additional 98,000 quintals of grains to fulfil the basic requirement of its population.

The years from 1983/84 to 1985/86 were also the worst times for both the rural and urban population of Arsi. The data on Table 4.2 reveals an excessive extraction of food grains from Arsi. In 1983/84, the peasants delivered 76.8 % of their marketable surplus to the AMC and sold 41.6% to traders to settle their debts and to buy non-agricultural consumer goods. The sum of the two sales exceeded by 18% the marketable surplus from the peasant sector. The data shows that nothing was left for the urban population and even less than the basic food requirements of the rural population. Both peasants as well as the urban population did not fulfil their basic minimum requirement needs.

If we look at the year 1984/85, Arsi's peasantry had no agricultural marketable surplus. There was a shortage of 88.1 thousand quintals of grain to feed the rural population with the minimum basic grain food requirements. However, they were required to deliver 155.7 thousand quintals of grain to the AMC. Further, they sold 12.6 thousand quintals of grain to traders to settle their debts. The calculated figure shows that the rural population alone had a shortage of 256.4 thousand quintals of food grain. Since the purchases were exported outside of Arsi, it is evident how difficult it was for both the rural and urban population to feed themselves. In the latter year, 1985/86, the AMC purchased double the amount of the marketable surplus. Of the available marketable surplus grains, the peasants were required to deliver an additional 268.2 thousand quintals of grain. This implies that the peasantry was underfed by an amount almost equal to the marketable surplus. One can assume how hard the situation was not only for the rural population but also for the non-agricultural population.

These years were the most intense and harsh times for the peasants of Arsi. The banning of traders, the control of *kellas*, and restricting market days worsened the situation. Peasants were forced to fed below the basic minimum requirement needs. As noted by Cohen (1987), the problem was exacerbated by shortage of industrial products. However, in the years following 1986/87, there was some relaxation by the government in letting traders move from one place to another, with lesser control on *kellas*. There were also better climatic conditions.

The above discussion gives us a clue about how excessive the quota was. The peasants, the traders, and the consumers were all dissatisfied by the quota system. This policy instrument was supplemented by pricing policy, which will be dealt with in the following section.

The Pricing System

The AMC's fixed farm gate prices were lower than local market prices. The data in Table 4.3 shows that *teff* free market prices were double that of the AMC's farm gate prices, while wheat and barley prices were more than 130% of the prices paid to peasants by the AMC. Producers could hardly be expected to offer their produce to the AMC under such circumstances. This was at odds with the stated objectives of encouraging production through price incentives. A general picture shows that the difference between the AMC price and the free market price was mainly the surplus extracted from the peasantry. Although all the differences would not go to the peasants, because of considerable segmentation in grain markets, there is no doubt that a major portion would have accrued to the peasants.

The size of surplus that had been extracted by the price differential may be judged by looking at the AMC's farm gate prices, the AMC's selling prices, and the free market prices[2]. In 1988/89, the AMC's farm gate price for *teff* was *Birr* 42, for wheat *Birr* 39, and for barley *Birr* 29. Whereas the AMC selling price was *Birr* 63 for *teff*, *Birr*

54.3 for wheat, and *Birr* 48.8 for barley per quintal, the free market price in Addis Ababa was *Birr* 110.2, *Birr* 84.2, and *Birr* 89.3 per quintal for *teff*, wheat, and barley respectively. At least from this sizeable difference between the AMC selling price and the free market price, some amount should have accrued to the peasantry (Eshetu 1990).

As can be seen in Table 4.3, free market prices were better than the AMC farm gate prices. Over the four years period, the free market prices show an average annual growth rate of 9.1 %, 9.7%, and 13% for *teff*, wheat and barley respectively, over the AMC farm gate prices.

Table 4. .3. Assella Free Market and AMC Fixed Farm Gate Prices (*Birr* per quintal).

		Teff			Wheat			Barley	
Year	FM*	AFG**	%	FM	AFG	%	FM	A FG	%
1986/87	73.00	39.00	187.18	39.00	31.00	125.81	30.50	27.00	113.00
1987/88	81.30	42.00	193.57	42.00	33.00	127.27	34.50	29.00	119.00
1988/89	91.70	42.00	218.33	47.50	33.00	143.94	39.50	29.00	136.20
1989/90	105.00	42.00	242.86	54.50	33.00	165.15	47.00	29.00	162.10

* Free Market Price

**AMC Fixed Farm Gate Price

Source: AMC Annual Reports.

Let us make a simple calculation to see roughly what the effect looks like. The amount of *teff* sold to the AMC by the peasantry during the years begun 1986/87 to 1989/90 was 1827, 15, 410 and zero quintals in that order. During the same years, the amount of wheat sold was 443257, 440773, 234440, and 142834 quintals while the amount of barley was 196107, 153073, 58527, and 24147 quintals respectively (AMC Annual Reports; APO 1988). If we calculate the differences in value of AMC fixed farm gate prices and the free market prices for the specified years, the following results will be obtained. The differential for *teff* was *Birr* 83.39 thousand, for wheat *Birr* 14 million, and for barley *Birr* 2.6 million. Details can be seen on Table 4.4.

This reveals, without any doubt, that pricing policies represented an important means of surplus transfer from peasant agriculture, which probably had a disincentive effect for the peasantry.

In addition to the compulsory grains delivery, peasants had to dispose of what was left over, if any, even by reducing their consumption requirement, in the immediate post harvest period either because of the need to fulfil their various obligations or because of a lack of storage capacity. They had to settle obligations such as income tax and land tax fees, make special contributions such as for famine victims or for war, and the many informal and uncounted contributions requested by their

respective PAs, SCs, and officials of the upper administrative strata. Estimates show that by 1984, about 15% of an average peasant household's cash income went to the latter activities (Eshetu 1990; Cohen 1987).

As noted earlier, the fixed price of grains was initiated in 1980/81. Thereafter, there was no marked increase in these prices until 1987/88, when the price was raised by 2 to 3 *Birr* per quintal. On the other hand, a steady rise of the consumer price index, as seen in Table 3.1, means an equally steady decline in the peasant's purchasing power. The World Bank affirmed that the real 1985/86 price expressed as a percentage of the real 1979/80 price was 68% for mixed *teff* and 91% for mixed wheat (Eshetu, 1990). To cope up with it, peasants had to sell their animals or any fixed assets, which made Dessalegn (1991) say that restricted markets and inter-regional trade threatened to cripple 'one of the most critical weapons of the peasantry in its fight against death and deprivation'.

Table 4.4. The Difference in the value ('000 *Birr*) of Free Market and AMC Fixed Farm Gate Prices in AMC's Purchase ('000 Quintals) for *Teff*, Wheat, and Barley From the Peasants (1986/87-1989/90)

	1986/87				1987/88			
	Total Purchase	Total Value		Difference	Total Purchase	Total Value		Difference
		FM	AFG			FM	AFG	
Teff	1.83	133.59	71.37	62.22	0.02	1.63	0.84	0.79
Wheat	443.23	17285.97	13740.13	3545.84	440.77	18512.34	14545.41	3966.93
Barley	196.12	5981.66	5295.24	686.42	153.07	5280.92	4439.03	841.89
	1986/87				1987/88			
	Total Purchase	Total Value		Difference	Total Purchase	Total Value		Difference
		FM	AFG			FM	AFG	
Teff	1.83	133.59	71.37	62.22	0.02	1.63	0.84	0.79
Wheat	443.23	17285.97	13740.13	3545.84	440.77	18512.34	14545.41	3966.93
Barley	196.12	5981.66	5295.24	686.42	153.07	5280.92	4439.03	841.89

Source: Own computation based on data obtained from APO, 1988 for 1986/87 data; AMC Annual Reports for the other data. **Note:** Total purchase in '000 quintals.

The SCs were not only to be used as a purchasing centre for the AMC, but were also to deliver consumer goods at reasonable prices to the peasantry. They did, but it was inadequate. For example, of the total sales of the Ethiopian Domestic Distribution Corporation (EDDC) in 1987/88, only 14% went to peasant society while 34.9% went to the private traders (Eshetu 1990). This should not be considered as a minor inconvenience on the peasant life. Arsi's peasantry became poor amidst the production of surplus. Despite their innovative capacity and their input utilisation position, policies made them less fruitful.

Cost of Production

The AMC's farm gate prices were not only very low, but also were less than the cost of production. According to the on-farm trials conducted by the South Eastern

Agricultural Development Zone (SEADZ) (1987), the cost of production at the peasant level in 1985/86 for *teff* was *Birr* 42, for wheat *Birr* 40, and for barley *Birr* 37 per quintal. The official AMC farm gate prices during the same year, however, were *Birr* 39, *Birr* 31, and *Birr* 27 per quintal respectively. The prices paid by the AMC were 7.1%, 22.5%, and 27% less than the cost used to produce *teff*, wheat, and barley respectively. The figures are greater if we compare them with the prevailing market prices of the grains. In principle, cost of production should have been used, at the minimum, to determine a floor price for the AMC.

In Arsi's case, the variation in cost of production to AMC price for barley and wheat was much higher than for *teff*. Arsi is known for producing wheat and barley, yet these grains also occupied the bulk of AMC's purchase. The disincentive of Arsi's peasantry to produce wheat and barley, when they used to sell these grains at lower prices than the prevailing free market prices (and even below the cost of production), may have been greater.

Fertilizer Value- Cost Ratio

The opportunity to increase production in Arsi through area expansion is a limited one. The potential for increasing production is likely to come from increasing yields. Increasing yields, by using modern irrigation practices, improved cultural practices, and the use of organic fertilizers, requires high investment, more research, and time. Moreover, fallowing, which is a traditional method of increasing soil fertility, became impossible for the peasants due to land scarcity. The use of organic fertilizer is also limited, as animal dung plays a more important role as fuel than as farm manure. Consequently, the use of chemical fertilizers is the major means to maintain soil fertility and increase agricultural production in the short run (Mulat 1996; Mulat 1995; Mulugeta 1994).

Fertilizer utilisation, among other things, is determined by the relative prices of grains and of fertilizer. According to FAO, a value-cost ratio (VCR) of 2 is commonly regarded as the minimum ratio required to induce fertilizer use (Teshome 1989). The implication is that a peasant should get an output with a value double as much as the fertilizer cost in order to bear the risk of adopting fertilizer.

However, if additional costs in the form of travelling to a sale point to buy fertilizer, applying it to fields, and the extra weeding, harvesting, and processing costs associated with the additional output obtained due to fertilizer application are taken into account, the VCR should be greater than 2. In the Ethiopian case, instead of VCR of 2, a high benefit-cost ratio is necessary to expand fertilizer use; a VCR of 2.5 should be regarded as a threshold (Mulat 1995), given the poor infrustructural conditions of the country.

In Arsi's case, although the use of fertilizer is relatively higher than in the rest, the application rate is still low. This is attributed to the unavailability of the input and the

ever increasing price of fertilizer the peasants pay in relation to the increase in grain prices. As can be seen from Table 4.5 below, until 1990/91 the VCR for *teff* and barley was less than 2. The VCR for wheat was in the range of 2 and 2.2 except in 1988/89, when it was 1.8. After 1990/91, the VCR for all crops increased to more than 3.8, except for barley in 1992/93. However, the increasing trend in the price of fertilizer may reduce the use of fertilizer. As can be calculated from data on Annex 4.4, the price elasticity of fertilizer use for the period 1989/90-1993/94 was -1.28, which shows a 10% increase in the price of fertilizer could result in a 12.8% decline in fertilizer use. This may have been further aggravated when state subsidies declined and then terminated in 1997.

Table 4.5. A Summary of Value-Cost Ratio for *Teff*, Wheat, and Barley (1982/83- 1993/94)

	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94
Teff	1.7	1.7	1.7	1.7	1.8	1.9	1.5	1.7	4.4	4.4	3.4	3.9
Wheat	2.1	2.1	2.1	2.1	2.1	2.2	1.8	2.0	4.6	4.2	3.4	4.2
Barley	1.8	1.8	1.8	1.8	1.8	1.9	1.6	1.8	3.8	3.5	2.7	3.3

Source: Extracted from Annex 4.4.

4.2. Post Grain Market Liberalisation

After the deregulation of grain markets, the institutional structure of grain marketing, including the AMC, changed. This section of the paper deals with institutional changes in the AMC and the development of other market institutions in grain marketing, the evolution of prices after the reform, and finally with an assessment of the response of the peasants to the changing prices.

4.2.1. The AMC and Institutional Development in Grain Marketing Network of the AMC before Liberalisation

Before the deregulation of the grain marketing system, the AMC used to purchase grain by establishing its grain purchase centres and collection centres. Functionally, the AMC grain collection centres were vertically integrated with the purchase centres, at the next stage of the marketing system. Service co-operatives served as intermediary points where grains were transferred from the peasants to the AMC. The AMC purchase centres served as temporary-bulking centres, where grain purchases from different collection points to the nearest AMC warehouses could be stored. In Arsi's case, the warehouse was located at Nazareth, the town located in Shewa about 75 km north of Assella.

In 1987/88, there were 16 grain purchase centres and 181 grain collection centres in Arsi. Of the total grain collection centres, 76% were service co-operatives located mainly in rural areas and small rural market areas. Each SC had a grain store, with a capacity of 500 to 2000 tons. The stores were constructed by the funds raised by the peasants and with profits generated by the SCs. The SCs facilitated the AMC's bulk building in rural areas by bringing together large quantities at one central point.

Without SCs, it would have been very difficult for the AMC to arrange transport for widely dispersed peasants or itinerant grain merchants in remote areas. The evolution of SCs as grain collection centres therefore marked not only the emergence of controlled grain marketing but also the diminishing role of rural markets as grain bulking centres (Alemayehu 1994b; Alemayehu 1992).

SCs were mainly located in inaccessible areas far from the main road. At the national level, only 15% of the SCs were accessible by road. This also held true for Arsi, though no exact percentage is known. This had an impact on the economic performance of the AMC. Its scarce manpower, marketing facilities, and bank overdraft had to be scattered over a large operational area, putting strain on its scarce resources. Moreover, whatever grain was bought from the SCs located in remotest areas, the AMC used to transport with its trucks. An estimate of up to 20% of the operational costs of the AMC went to maintaining trucks damaged during the collection of grain from the collection centres. This caused inefficiency in grain collection (Alemayehu 1994b).

Network Shrinkage of the AMC

Deregulation of grain markets in March 1990 undermined the role of the AMC and put its economic viability in doubt. After deregulation, the SCs ceased to be major collection centres of grain handled by the AMC.

The number of collection centres[3] diminished from 2013 in 1989 to 42 in 1992 at the national level. The AMC grain purchase network in Arsi declined from two to one branch office (50%), from 16 to 6 purchase centres (37.5%), and from 181 to 16 collection centres (8.8%). These six purchasing centres are located in the central part of Arsi, while purchase centres in the eastern part of the zone were totally closed (Alemayehu, 1994b). This resulted in decreased purchases of the AMC, from 801297 quintals of grain in 1982/83 to 2384 quintals in 1993/94 (Annex 4.2). One should note however that of the noted 42 collection centres at the national level, 16 (38%) were found in Arsi. Even after deregulation, though the purchases decreased to the noted figure, Arsi remained a main focal area for the purchases of the AMC.

Immediately after the termination of grain quotas, the role of SCs in grain marketing stopped. Their link with the AMC was cut immediately after the liberalisation of grain marketing. About 37% of the SCs ceased to function fully as a result of looting and the dismantling of SCs fixed assets (warehouses, flour mills, etc.) when the military regime collapsed in 1991 (APO 1995). In some cases, the SCs savings had been squandered and embezzled by corrupt leaders. As a result, some SCs did not have working capital to participate in grain marketing. Like the AMC warehouses, the under-utilisation of the SCs stores raised a serious concern about the wastage of public resources in rural areas. No SC would take up grain marketing on their own initiative or respond positively to deregulation. The reasons were: the peasantry's reluctance to sell grains through SCs, peasants' distrust of co-operatives and

maltreatment by SC officials in the past, lack of funds, lack of leadership, and fear of competition with the private traders. Further, peasants in accessible areas and closer to major roads had better access to private marketing channels after the deregulation of grain markets (Alemayehu 1994a; Alemayehu 1992).

The Declining Share of the AMC in Grain Purchase

After the reform, the purchasing capacity of the AMC declined. The SCs stopped supplying grain and peasants refused to sell grain to the AMC on local markets. Since the AMC had limited experience in competing with private traders and the supply of grains from state farms declined as some parts of the state farms were reclaimed by the peasantry after 1991, the grain procurement of the AMC further dwindled. The purchase of the AMC from the peasant sector declined by 81%, from 512212 quintals in 1988/89 to 96619 quintals in 1990/91, and further declined by 99% of the 1990/91 level in 1993/94 (Annex 4.2). This shows the increasing role of the private sector in grain marketing and distribution and the decreasing role of the public sector.

In terms of its clients and the demand for grains, the pattern of AMC sales changed drastically. At the national level, its sales to its former clients fell by 75% from 647010 tons in 1988/89 to 161600 tons in 1991/92. Most of the clients shifted to the private sector, except the flour mills, which buy wheat and maize. Some procured grain directly from state farms or from local markets, and the AMC has to compete with other sellers to sell grain (Alemayehu 1994b).

The withdrawal of the AMC from low potential areas opened space for the private sector. After the reform, however, the number of licensed private grain traders concentrated in surplus producing areas of the country. The number of grain traders increased significantly in Arsi. The number of licensed traders in 1982/83 was 362 while in 1987/88 there were no licensed grain traders in Arsi. After legalisation of trade in 1988, the number of licensed grain traders grew to 112 in 1988/89 and increased by 77.7% to 199 in 1989. After deregulation, the number became 187 in 1990/91 and further increased by 239.6% to 448 in 1991/92, which has resulted in an increasing rate of the private sector in grain trade (Alemayehu 1994b; Walday 1992). Many people also become employed in various grain trading activities such as unlicensed petty trade, brokerage, cleaning, packing, weighing, loading and unloading, transportation, shopping and guarding. However, different studies show that the capacity of the private sector in terms of working capital, storage and trucking too low to manage a large-scale food crisis. They have very limited capacity to transport food from surplus to deficit areas (Alemayehu 1994a).

Purchasing Strategies of the AMC after the Reform

After deregulation, the AMC had no clear direction to go. It had no clear policy as to how to purchase, what to purchase, by how much to purchase, where to sell and for

what purpose. Moreover, the state stopped its subsidy to the AMC in 1992. As a result, the cost of administration increased and it was obliged to adopt a new policy. The new policy of the AMC was to purchase grain in high demand, to use free market prices as opposed to fixed prices, to use private traders as supplying agents, to freeze new hiring, and to layoff more than half its manpower (Alemayehu 1994a, 1994b; Wolday 1992).

Following the abolition of uniform pricing, the AMC adopted seasonally and distance differentiated prices. Producer prices decreased with distance from the central markets. The pan-territorial pricing system used by the AMC in the 1980s benefited the peasants in the marginal areas through transport subsidies at the expense of the incomes of those peasants living closer to the major market areas. On the other hand, the abolition of pan-territorial prices benefited those peasants living closer to major markets.

The AMC followed a pricing policy of offering a slightly lower price than that offered by traders and which was fixed for a month. Although this system was an improvement over the fixed pricing system, it failed to keep pace with the fast changing free market prices paid by private traders. Actual market prices fluctuated from day to day and from week to week. This affected the AMC's capacity to make effective procurement. The only time the AMC secured procurement was when prices fell to the level of the AMC's monthly set prices. This forced the AMC to adopt another policy, which was to pay licensed grain traders *Birr* five per quintal for *teff* and *Birr* three per quintal for other grains, together with funds and sacks for grain purchases. The supplying traders were those traders with a shortage of capital and storage facilities. They also included those traders who had no capacity to transport to upper marketing channels. This new link was the result of the AMC's failure to attract peasants in local markets and the traders' lack of resources to handle grain entering in local markets. The deregulation of grain markets created temporary inter-linkages and interdependence between the public and the private sector in grain marketing. However, it is difficult to judge about the future of the symbiotic relationship between the AMC and the private traders (Alemayehu 1994b)

Institutional Development in Grain Markets after the Reform

Besides the institutional relationship between the AMC and private traders, there are other institutional developments in grain marketing. Deregulation allowed intermediary firms to enter and leave grain trading whenever they wished. Private traders, the AMC, non-governmental organisations (NGOs), and private share companies entered the grain marketing temporarily or permanently. As can be seen from Figure 4.1, peasants can sell to either petty rural traders, assemblers, wholesalers, rural consumers or urban consumers. Urban consumers have also alternative channels. They can buy either directly from peasants, retailers, or *kebele* shops.

At local level, established wholesalers with long trading experience and trade arrangements have a greater influence as they have access to transport facilities and access to market information. They tend to monopolise grain purchases by advancing credit to peasants and traders at lower strata (Alemayehu 1994a). In general, the wholesalers determine the quantity of grain collected from the different parts of Arsi. They influence the quantity, the size and direction of flows, and stock levels to be maintained from season to season.

Brokers influence the size and direction of the flow of grains by providing information. Brokering is a difficult task that needs to have links with different parties in the marketing structure. As a result, the number of brokers is limited.

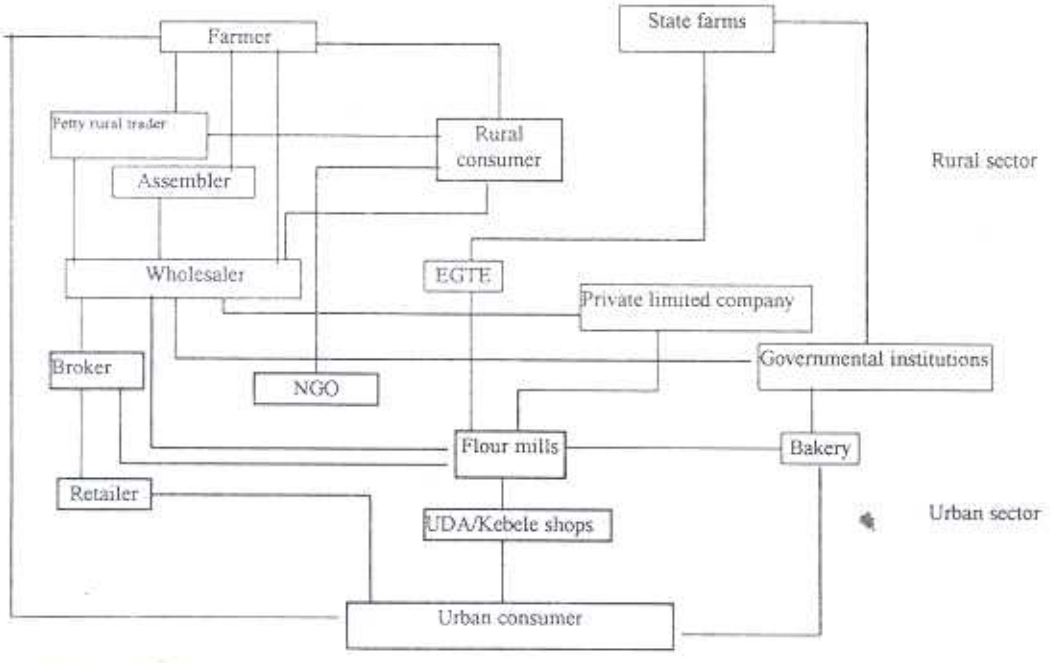
Retailers and collectors also influence grain markets. Both activities are more competitive, as most of the time licensing restrictions are not enforced. Demand for grain is usually high during the pay periods of civil servants and other waged employees, which is mainly at the end of each month. There is high competition among retailers and assemblers to sell more during the pay period. Unlike wholesalers, it is not obligatory for retailers to possess warehouses. As a result, the size of grain handled by retailers is not necessarily large.

Consumers are the final destination of grain produced by the peasants. They mainly buy from retailers, particularly in towns and terminal markets. One should, however, understand that they might not follow the complete channel through which grains are marketed. Consumers could directly buy from peasants or assemblers or retailers. The flow on figure 4.1 shows the major movements of grains, and is not a fixed set of transactions.

The change in the structure of the market resulted in the relatively free movement of grains from one place to another. Prices are determined by the supply and demand conditions of the market. The following section of the paper deals with the behaviour of the prices after the deregulation of the grain markets.

The behaviour of prices of food grains in response to marketing policies and changes in market structure is one of the performance criteria of a market. After the deregulation of grain markets, the volume of grains sold by peasant households increased and, at the same time, the price the peasants received also increased.

Figure 4.1. Domestic Grain Marketing Channels After Deregulation (1992)



Source: Alemayehu 1994a:13.

A sample survey made in Arsi and Shewa reveals that peasant households increased their sales by about 150% of the quota level. The share of the price peasants received as a proportion of the price paid by the final consumers increased from 36% in 1980/81 to 57% in 1991/92 (Alemayehu 1994a). An attempt is made below to show the gross share of Arsi's peasants in the wholesale and final consumer price.

Two things can be read from Table 4.6: an almost continuous rise in the price of grains over time and a better share of producers in both wholesale and consumer prices compared to the time of quota. The increase in grain prices since liberalisation resulted in the share of peasants in the final price of their product going up, which might show that peasants benefited from liberalisation.

Table 4.6. Producer Prices, Wholesale Prices, and Consumer Prices for *Teff*, Wheat, and Barley and Percentage Share of Producer prices in Wholesale and Consumer Prices (1989/90-1993/94)

	1989/90		1990/91		1991/92		1992/93		1993/94		Average*	
	Price	%	Price	%	Price	%	Price	%	Price	%	Price	%
Teff												
Producers	69.00		111.10		130.67		140.00		na		113.20	
Wholesale	93.00	74.2	na	na	165.70	78.9	174.00	80.5	162.70	na	144.20	77.8
consumers	105.00	65.7	141.00	78.8	174.30	75.0	179.30	78.1	169.30	na	152.90	74.4
Wheat												
Producers	45.00		78.00		84.0		95.00		na		74.70	
Wholesale	48.50	92.8	na	na	108.50	77.4	115.00	82.6	120.50	na	90.70	84.3
consumers	54.50	82.6	85.00	91.8	115.00	73.0	120.00	79.2	126.00	na	96.50	81.6
Barley												
Producers	38.00		64.00		70.00		74.00		na		60.70	
Wholesale	44.00	86.4	na	na	91.00	76.9	95.50	77.5	98.00	na	76.80	80.3
consumers	47.00	80.9	79.00	81.0	99.50	70.4	101.00	73.3	103.50	na	82.50	76.4

Note: Prices are in *Birr* per quintal.
na = Data not available
* Average is taken for the years 1989/90, 1991/92, and 1992/93 as some data are missing for the other years.
Source: Computed from data obtained from AMC Annual Reports for free market prices and wholesale prices; CSA for producer prices.

The share of the peasants shown in Table 4.6 is somewhat less than that computed for the Addis Ababa retail price of *teff* in 1994. Kuma *et al.*, (1995) has found that the share of the producers price was 82.3% of the wholesale price and 78.83% of the final consumers price. Wholesalers constituted 15.14% of the consumers price while the rest, 7.03% of consumers price, was shared among collectors and retailers. In Arsi, on the average, peasants received 77.8%, 84.3% and 80.3% of the wholesale price for *teff*, wheat and barley respectively, and their share in the consumers price was 74.4%, 81.6% and 76.4% respectively, revealing that peasants benefited compared to the share they had before the reform. Their share of the price after the reform was better when compared to the pre-reform period. However, even if prices are increasing in gross terms, the share of peasants in consumer prices show a declining trend over time. The reason may be attributed to the share going to the wholesalers.

To know whether the price received by the traders is a reasonable mark-up, the following simple calculation is made. A basic economic assumption is that if net profit is greater than the cost, then, in neo-classical terms, excess profit is made; in a perfectly competitive market, trader's net profit should be equal to the cost of capital. Due to lack of detailed data needed for a calculation of the net benefit to traders, the

percentage share of each cost breakdown is taken from the survey made by Kuma *et al.* (1995) in 1994. Wholesalers are the focus of the survey, as they have more marketing facilities than other market participants. The trader's margin is divided into three parts: variable costs, fixed costs and traders profit. Variable costs constituted 64.53% [4]of the trader's average margin, while variable costs and traders profits constituted 7.1% [5] and 28.37%, respectively.

Transport cost covers the major part of the traders margin, followed by traders profit, *kella* and labour charges. Transport is done by trucks to terminal markets. The charge of transport is high during the post harvest period. *Kella* charges are charges that are paid on the main outlets to the terminal markets. In some areas, traders are charged excessive and arbitrary charges; refusal can lead to unloading the whole commodity in an inconvenient place (Kuma *et al.*, 1995).

Let us continue with a simple calculation of the traders margin. On Table 4.6, the average producer price for *teff*, wheat, and barley was 113.2, 74.7, and 60.7 *Birr* per quintal respectively while wholesale price for the respective grains was 144.2, 90.7, and 76.8 *Birr* per quintal. The trader's average gross margin per quintal then would be *Birr* 31 for *teff*, *Birr* 16 for wheat, and *Birr* 16.1 for barley. From this average traders gross margin, trader's profit, which, following the evidence of Kuma *et al.* (1995) noted above, is assumed to be 28.37% of the gross margin, would become 8.8 *Birr* per quintal for *teff*, 4.54 *Birr* per quintal for wheat, and 4.57 *Birr* per quintal for barley. To come up with the traders' net profit, we need to deduct other costs[6] borne by the owners. Traders must pay bank interest on money they have borrowed to purchase grain; the interest rate can be assumed to be the cost of capital. Traders must also pay a salary to themselves. If these deductions are made, the result would be their net income. Tax on income is then deducted from the net income to get net profit of the traders. The bank interest rate on capital invested was an official bank interest rate on money invested to buy grain, which was at 15% per annum. One *Birr* per quintal per turnover is assumed to be a salary for the owners. Deducting interest paid to the bank and owners' remuneration from trader's profit will give us the net income of the traders. Finally, traders are also expected to pay income tax, which was 40% of net income. Following this methodology, a crude estimate of trader's net profit and its share of the interest paid to the bank for *teff*, wheat and barley is given in Table, 4.7.

Table 4.7. Excess of Net Profit Over Cost of Capital (1989/90, 1991/92, and 1992/93 Average).

	Trader's profit	Bank interest (IR)	Owner's remuneration	Net income	Tax	Net profit	% of net profit in IR
Teff	8.80	1.67	1.0	6.13	2.46	3.67	219.80
Wheat	4.54	0.97	1.0	2.57	1.03	1.54	158.80
Barley	4.57	0.80	1.0	2.77	1.11	1.66	207.50

Source: Own computation based on data obtained from Table 4.6.

Table 4.7 reveals that the net profit on *teff*, wheat, and barley was 3.67, 1.54, and 1.66 *Birr* per quintal respectively. On the other hand, the interest paid by the wholesale trader for *teff*, wheat, and barley was 1.67, 0.97, and 0.80 *Birr* per quintal. When net profit is compared with the interest paid to the bank, the profit gained is greater. A *teff* and barley wholesaler gained more than twice the interest paid to the bank on capital, while wheat wholesaler enjoyed about 1.6 times more than the interest paid to the bank. The gain by the wholesalers in Arsi was even greater than that calculated from a survey made by Kuma et al (1995), which was 150%. Traders net profit at wholesale stage could be considered excessive in neo-classical terms, as the profits greatly exceeded interest. The gain may be attributed to the greater relative access of traders to market information, better transportation facilities, and access to credit. This made the wholesalers more influential in the grain marketing system after the reform.

Better off peasants and those who are closer to major roads and terminal markets have also benefited more from the reform than poor peasants and those living in remote areas (Kuma *et al.*, 1995; Alemayehu 1994a, 1994b; Wolday 1992). The better off peasants sell and loan grain and loan cash to poorer peasants at higher than market prices and interest rates, respectively. This might imply that the economic reform accentuated existing social differences among peasant producers by transferring resources to better off peasants. Peasants closer to major roads and markets incur lower transport costs and have alternative outlets to sell their grain than those living farther away (Table 4.8). Moreover, the prices of manufactured goods and services increase as we move away from the central market areas and main routes. This could suggest that peasants living in marginal and in inaccessible areas further lost out in the reform.

Table 4.8. Comparison of Producer Prices for Mixed Wheat in Different Markets of Arsi Before and After the Reform.

Market	Distance from Addis Ababa (kilometres)	Transport cost *Birr* per quintal	Producer price April 1985	Producer price April 1992
Etheya	150	6.00	31.00	105.00
Assella	175	7.00	31.00	908.0
Bekoji	235	10.00	31.00	970.0
Assassa	290	12.75	31.00	95.00

Source: Alemayehu, 1994b:93.

As noted earlier, fertilizer is the main farm input peasants are using. Although a rural consumer price index in Arsi is lacking, the fertilizer value-cost ratio (VCR) can be used to show some effects of the inter-sectoral terms of trade. The terms of trade can be measured by the VCR as it takes into account the price paid by the peasants to purchase fertilizer and the price they used to sell their grain. The VCR became higher after the reform than during the quota period (Annex 4.4). There was an increase in the ratio during the first two years of the reform, and then a declining trend. However, it is doubtful whether the terms of trade will continue in favour of the peasants if the price of fertilizer is further deregulated and its distribution privatised,

or if the prices of consumers goods continue to increase by in more remote rural areas.

In the preceding section, it was shown that many peasants benefited from liberalisation in terms of selling their produce at better prices. An increase in producer prices may or may not induce further grain production. The following section of the chapter explores the responsiveness of peasants to the increase in producer prices.

4.2.3. Effects of Grain Prices on Peasant Production

In peasant economics, some viewed the peasant's acceptance of new factors of production as dependent upon the profit generated, with due allowance for risk and uncertainty. Others argued that peasants in subsistence agriculture behave inversely on the assumption that peasant's expenses are limited. Peasants are not in a position to increase output beyond their consumption needs. Still others said that peasants in LDCs have several structural and institutional problems that hinder them in responding to price changes. Irrespective of these differing ideas, most LDCs now use market prices to induce a supply response.

Grain marketing in Ethiopia was liberalised in 1990. Free markets determine grain prices. It was assumed that this would benefit peasants by inducing them to increase their production. One way of assessing the response of the peasants is by measuring the price elasticity of supply for food grain output after the liberalisation of grain markets.

According to the view of the World Bank, a percentage change in the price of agricultural output will bring about a proportionately greater percentage change in agricultural output, and thus the price elasticity of supply for agricultural outputs is greater than one. In contrast, many structuralists argue that a percentage change in the price of agricultural output may bring about a proportionately smaller percentage change in output. As a result, the price elasticity of supply for agricultural output may be less than one (Akram-Lodhi 1996). Structuralists argue that if price elasticity of output is greater than one, it is only in the long run. Moreover, as Lipton (1991) argued, the level of statistical significance assigned to farm outputs with respect to price is very low, revealing that determinants of agricultural output supply are factors other than price.

The price elasticity of supply can be calculated using the following formula:

$$\varepsilon_i = (\Delta Q_i / \Delta P_i)(P_i / Q_i)$$

Where Q_i is the quantity of crop i; P_i is the price of crop i; and Δ is the change in Q or P.

We now attempt to compute the own-price elasticity of supply for *teff*, wheat and barley for the Arsi zone. For our estimation, prices are lagged by one year, on the assumption that high prices for this year will induce peasants to produce more next year. The time taken is the period after the liberalisation of the economy.

Table 4.9. Summary of Own-Price Elasticity of Supply for Output *Teff*, Wheat and Barley (1990/91-1993/94)

Type of crop	1990/91	1991/92	1992/93	1993/94	Average
Teff	1.32	0.02	-1.33	0.88	0.22
Wheat	-0.65	-0.51	3.66	0.61	0.78
Barley	-1.80	0.07	1.00	-0.87	-0.40

Source: Extracted from Annex 4.5.

Table 4.9 depicts that, on average, all three crops are inelastic with respect to price: *teff* and wheat have positive elasticity while barley shows a negative price elasticity. The increase in the price of these grains did not induce peasants to increase production in a proportionate manner. The result of this calculation do not support the World Bank's view that an increase in prices will result in more than a proportionate change in grain output. The result rather supports the view of structuralists, revealing that other non-price factors, have to be given due attention. Let us examine some of the non-price factors, other than natural calamities, that could have an influence on grain marketing and peasant production in Arsi.

4.2.4. Rural Infrastructure and Information Transfer in Arsi

Rural infrastructure plays a decisive role not only in marketing food grains to consumers but also in facilitating the provision of productive inputs to the peasants. Rural infrastructure includes a variety of areas. However, not all of them have a direct linkage with marketing activities. Those which have include transport, storage facilities, credit and market information.

Transport

Transportation is vital for making goods and services available at the proper place and time. Inefficient transportation systems might result in less efficient marketing system. The major share of consumers' money might not reach the producers' pocket, leaving a larger share to market intermediaries. Based on this assumption, the Chilalo Agricultural Development Unit (CADU) and Arsi Agricultural Development Unit (ARDU) projects gave due attention to infrastructural development in facilitating the development of agriculture in Arsi.

CADU-ARDU's main infrastructural activities were the construction of rural roads to facilitate the technological innovation in the zone. Road construction programmes held by the project was on the basis of community participation, in which 75% of the

cost was covered by the local population (Teshome 1989), which was a heavy burden for the community to bear. The project tried to construct about 380 kilometres of RR50[7] of rural roads (Zelalem 1988). In most cases, the roads are not functioning all year round due to a lack of maintenance, though recently the government and the community are trying to rehabilitate some of them.

As of 1994, other than the 60 km of asphalt road that connects the zonal capital, Assella, with the main road to Addis, all weather roads are gravel surfaced and have a total length of 665 km. There are also poorly maintained feeder roads, having a total length of 188 kilometres, but serviceable only during the dry season. Though Arsi's road density (31 km. of road per 1000 sq. km.) (Oromia Planning and Economic Development Bureau 1996) is better than the national average (21 km. per 1000 sq. kilometres) (Mulat 1996), the demand for vehicles to transport produce is far greater than the supply. So, transportation facilities in the zone can be classified as poorly developed. As a result, the dominant way of transporting agricultural products to local markets and bringing farm inputs to the farm is by pack animals and human beings travelling long distances to market places. The quantities delivered by these means are small, and in most cases are not more than 100 kilograms at a time.

Storage Facilities

Peasants in the zone use traditional storage systems. They store their grains in special bins (*Gotera*) placed within the compound. The *gotera* is made of wood and reinforced and plastered with a mixture of mud, *teff* straw and cow dung. The cover or the roof of the *gotera* is mainly made of wood and covered by grass. Grains are also stored in *dibignit* (conical mud bins), a local store made of a mixture of soil and *teff* straw and placed inside the house. Furthermore, sacks are used for storing grains and kept in the house as *dibignit*.

These storage materials are exposed to deterioration by insect pests, rodents, wet conditions, etc. Studies show that losses from improper storage on the farm range between 20% in the drier areas to the extreme of 50% in the humid areas (see Gebre Egziabher *et al.*, 1989). In such a situation, it is not surprising if peasants dispose of their produce at lower prices during the harvest time. Even, traders have lower capacity to stock sufficient grain. A survey made in Arsi and Shewa shows that the average storage capacity of wholesale and retail traders was only 2.2 tonnes per trader (Alemayehu 1994b).

Credit Services

Most of the peasants in the zone get credit from local moneylenders. The only institution that renders credit to the peasants is the Development Bank of Ethiopia. There is only one branch in the zone, which is located in the zonal capital. The services mainly rendered are the provision of fertilizers and improved seeds in-kind.

Services are rendered through service co-operatives and it is difficult for individual peasants to have access to loans because of the collateral problem. There are also problems in advancing loans, as it requires the return of any previous loans by all members of the PA. The inaccessibility of the peasants to credit obliged them to rely on local moneylenders to settle their debts and accomplish their farming operations. Moreover, traders have a problem of working capital. According to a survey made in Arsi and Shoa, average working capital of wholesalers was *Birr* 38750 per trader. Like the peasants, the main sources of their capital was from informal credit sources (Alemayehu 1994b).

Market Information

Market information is a necessary tool for both parties: the peasants and the traders. Peasants could have better bargaining power if they had access to the prices of the grains they sell. However, peasants have no up-to-date market information on prevailing grain prices in the market. The majority of them are aware of the prices after their arrival in the marketplace. They know the prices of grains by asking and observing other market participants. Others get information about previous market days and other market places by asking their neighbours who have been there. On the other hand, traders have relatively better access to market information. They have market information through telephone calls or messages delivered by truck drivers from the terminal markets. Peasants have no such access to market information.

5. SUMMARY AND CONCLUSIONS

In the 1980s, grain marketing received much government attention not only because of its importance in the national economy but also due to the alleged imperfections in the private marketing system. This led the state to intervene in the marketing and distribution of food grains. Active state participation started with the establishment of the AMC in 1976. The objective of the AMC was to encourage agricultural production and to supply food to the public. However, the grain marketing policy failed to provide incentives to peasants. Peasants were obliged to deliver more than the surplus they produced and indeed often they were unable to fulfil their minimum basic food requirements. Moreover, the situation became worse as the terms of trade turned against peasants. The state interest served by the AMC monopoly was to feed the urban population with subsidised food. The AMC, however, could not meet the demands of consumers. Most consumers fulfilled their demand by purchasing from parallel markets at higher prices.

The reaction of producers and traders to the enforcement of the policies adopted by the government were strong and negative. It ranged from refusing to sell to the AMC to the operation of parallel markets. The implementation of the policy measures,

which used coercion, had adverse effects on grain production, farm income, rural and urban food security, and private traders' incentives.

The AMC benefited neither the producers nor the consumers. The effort of intervention proved to be contrary to the stated objectives of encouraging agricultural production and an adequate distribution of food to the public. Additionally, government intervention in grain marketing and pricing prevented private traders from playing a sustained and complementary role in grain markets.

Since 1990, however, the grain marketing system has undergone major restructuring. The collapse of socialism in Eastern Europe, sustained donor pressure from outside, intense internal political pressure, and worsening economic conditions forced the military government to deregulate grain markets in 1990. The reform included the abolition of the delivery quota imposed on peasants and traders, the removal of the fixed grain pricing system, the lifting of restrictions on the inter-regional movement of grain, allowing the private sector into grain markets, and reducing the role of the public sector in the grain trade. The price subsidy paid by the government to the AMC was reduced after 1990 and totally cancelled in July 1992. After the reform, private sector involvement in grain markets has increased. Producer prices have also increased. The reform helped peasants to allocate their grain for consumption, seed, and to sell surplus freely in any market and at any time.

Despite the increase in the prices of food grains, the responsiveness was not proportionate as measured by the own-price elasticity of supply. The available data shows that peasants may have been constrained by non-price factors. The implication seems that a rise in the price of grains alone has not been sufficient to a rise in the production of grains. The state may therefore have to take on new responsibilities. Unless food grain marketing policy is accompanied by structural reform in the productive, transportation, and credit systems, continuous improvement in the efficiency of the food grain marketing might cease in the near future. The most important measures relating to grain production should include the provision of short term cash loans to peasants who want to buy inputs, farm oxen, and improve rural storage conditions. Furthermore, improving road infrastructure and investing in timely and widely disseminated market information are likely to improve the efficiency of grain markets. We have to learn from the experiences of many African countries: liberalisation is not simply a one-shot event but rather a process of market oriented development with continuous adjustment to new events.

From the discussion throughout the paper, there is a critical question that need to be settled. The statist period had a negative effect on peasant producers. On the other hand, the deregulation of grain markets had freed the market and producer prices had increased. However, the benefits for peasants are less than might have been expected because of information, storage, transport, and credit problems. Should the state therefore withdraw from the market?

The low capacity of the private sector in terms of working capital, storage facilities and transportation reveals that the private grain marketing system cannot manage a large-scale food crisis without the participation of the state. If we assume that there is high amount of surplus production in Arsi, private traders have very limited capacity to export to food deficit areas. Moreover, small traders without collateral had no access to formal credit and many of them are dependent on the EGTE for grain purchasing after the reform. The implication is that traders had no capacity to procure large amounts of grain using their own capital.

At present, the state's role in grain marketing is minimal. However, the state still has a capacity to intervene in marketing. The state should participate in grain marketing for emergency purposes. They often should facilitate price stabilisation through buffer stocks, buying when output is cheap (to protect the peasants) and selling when prices rise (to protect consumers). The EGTE should continue its links with the private sector by providing accurate market information and market training in market management like bookkeeping and quality control.

Infrastructural development is the main obstacle both for peasants and traders. Peasants and traders will not have a capacity, at least for the next few years, to handle infrastructural development. The state should promote the construction and improvement of roads, the provision of credit, the construction of storage facilities, the provision of market information, and the training of personnel in different disciplines. State participation is, therefore, a necessity for the development of private trade in agricultural markets.

NOTES

[1] Peasants are "households which derive their livelihood mainly from agriculture, utilise mainly family labour in farm production, and are characterised by partial engagement in input and output markets which are often imperfect or incomplete" (Ellis, 1993: 13).

[2] As there is no data for AMC selling and free market prices for Assella, the prices used refers to Addis Ababa prices.

[3] Denotes SC sites before reform and traders' location after reform. The later is a collection centre that constituted a certain number of traders that used to supply grain to the AMC. The AMC used them as collection centres as there are no SCs that could supply grain to the AMC after reform.

[4] Includes average road transport (44.16%), kella charges (8.07%), labour charges (7.2%), brokers fees (4.54%) and municipal charges (0.56%).

[5] Includes storage rent (1.42%) and depreciation of sacks (5.68%).

[6] Bank interest rate 15% per annum on capital invested; owners remuneration 1 Birr per quintal and tax on profit 40% of net income. The turn over time taken is to be a month (Kuma et al, 1995).

[7] Rural roads which have a capacity of 50 traffic per day.

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Annex 4.1. Estimated Agricultural Marketable Surplus From the Peasant* Sector (1993/94

		Production ('000 quintals)					Balance		
Year	Rural population ('000s)	Peasant sector	state farm sector	Total Prod.	Food required ('000qt.)	Losses & seed ('000qt.)	Amount ('000qt.)	% share of peasant sector	'Marketable surplus of Peasant sector per rural population' (Quintal)
a	b	c	d	e	f=2*b	g=0.2*e	h=e-(f+g)	' i=(c -(0.2*c+f)/h*100	'K=h(0.01*i)/b
1982/83	1569.8	5580.8	558.0	6138.8	3139.6	1227.8	1771.5	74.8	0.8
1983/84	1604.8	4519.9	444.5	4964.4	3209.6	992.9	762.0	53.3	0.3
1984/85	1640.6	3991.4	507.3	4498.7	3281.2	899.7	317.7	-27.7	-0.1
1985/86	1677.2	4516.3	574.9	5091.2	3354.4	1018.2	718.6	36.0	0.2
1986/87	1714.6	5515	442.3	5957.3	3429.2	1191.5	1336.7	73.5	0.6
1987/88	1752.8	7123.0	308.3	7431.3	3505.6	1486.3	2439.4	89.9	1.3
1988/89	1791.9	6450.5	542.3	6992.8	3583.8	1398.6	2010.5	78.4	0.9
1989/90	1831.9	7585.8	494.9	8080.7	3663.8	1616.1	2800.7	85.9	1.3
1990/91	1872.7	7006.8	421.6	7428.5	3745.4	1485.7	2197.4	84.6	1.0
1991/92	1914.5	5616.8	286.1	5902.9	3829.0	1180.6	893.3	74.4	0,3
1992/93	1957.2	7075.0	174.3	7249.3	3914.4	1449.9	1885.0	92.6	0.9
1993/94	2000.8	7204.6	197.8	7402.4	4001.6	1480.5	1920.3	91.8	0.9
Averages									
1982/83-1989	1698.0	5660.3	484.1	6144.4	3395.9	1228.9	1519.6	58.0	0.7
1990/91-1993	1936.3	6725.8	270	6995.7	3872.6	1399.1	1724.0	85.8	0.8

* Includes the private peasant farm sub-sector and the co-operative peasant farm sub-sector.

Source: Own computation based on CSA, 1996.

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: Arsi State Farms Development Enterprise Annual Reports.

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: Oromiya Planning and Economic Development Bureau (1996), Statistical Bulletins.

Annex 4.2. AMC Purchases by Crop Type From the Peasant* Sector (1982/83-1993/94

Crop type	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
Total Purchases (quintals)	801297	480915	168337	537973	753914	672307	517212	305155	96619	116528	123605	2384
Percentage share of												
Cereals	88.20	87.17	71.44	82.52	92.74	96.15	90.36	98.40	86.23	95.20	100.00	100.00
Teff	1.30	0.90	0.23	0.58	0.26	0.01	0.32	0.03		8.43		
Barley	37.45	13.46	16.15	22.32	26.06	23.65	19.20	22.02	46.06	25.88		
Wheat	43.04	67.84	53.91	51.68	59.25	71.58	66.58	75.10	42.17	60.33	100.00	100.00
Other cereals	6.41	4.97	1.14	7.94	7.18	0.91	4.26	1.24	0.00	0.57		
Pulses	1.45	0.41	0.40	1.03	2.26	2.05	8.71	0.11	6.14	4.80		
Oil seeds	10.35	12.43	28.16	16.45	5.00	1.80	0.92	1.49	5.64			

* After 1989/90, grains have been delivered by traders.
Source: APO, 1988 for the data from 1982/83 to 1986/87 and APO, 1995 for 1993/94
Central Ethiopia AMC Annual Reports for the data from 1987/88 to 1992/93

Annex 4.3. Arisi Average Free Market, Producer, and AMC Farm Gate Prices for Teff, Wheat, and Barley (Birr per Quintal) (1982/1993/94)

	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
Free Market Prices												
Teff	NA	NA	NA	NA	73	81.33	91.67	105.00	141.00	174.33	179.33	169.30
Wheat	NA	NA	NA	NA	39.00	42.00	47.50	54.50	85.00	115.00	120.00	126.00
Barley	NA	NA	NA	NA	30.5	34.5	39.5	47	79	99.5	101	103.5
Producer prices												
Teff	48.15	93.52	85.51	69.20	48.96	77.00	59.00	69.00	111.10	130.70	140.00	NA
Wheat	38.14	74.72	69.42	40.04	32.53	37.00	41.00	45.00	78.00	84.00	95.00	NA
Barley	25.35	50.05	53.02	35.5	27.27	30.00	34.00	38.00	64.00	70.00	74.00	NA
AMC fixed farm gate												
Prices												
Teff	39.00	39.00	39.00	39.00	39.00	42.00	42.00	42.00				
Wheat	31.00	31.00	31.00	31.00	31.00	33.00	33.00	33.00				
Barley	27.00	27.00	27.00	27.00	27.00	29.00	29.00	29.00				

NA = Data Not Available
Source: AMC Annual Reports for Free Market Prices and AMC Fixed Farm Gate Prices. CSA various publications for producers price

Annex 4.4. Fertilizer Value-Cost Ratios for Teff, Wheat, and Barley (1993/94)

	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94
Teff												
Increamental yield (qt/ha)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
AMC FG Price (Birr/qt)	39	39.0	39.0	39.0	39.0	42.0	42.0	42.0	111.1	130.67	140	154.8
Additional value obtained (Birr)	140.4	140.4	140.4	140.4	140.4	151.2	151.2	151.2	400	407.4	504	557.3
Fertilizer Price (Birr/qt)	81.4	81.4	81.4	79.8	79.8	81.4	96.6	88.8	91	107.1	149.7	143.3
Value-cost ratio	1.7	1.7	1.7	1.8	1.8	1.9	1.6	1.7	4.4	4.4	3.4	3.9
Wheat												
Incremental yield (qt/ha)	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
AMC FG price (Birr/qt)	31	31.0	31.0	31.0	31.0	33.0	33.0	33.0	78.0	84.0	95.0	111.3
Additional value obtained (Birr)	167.4	167.4	167.4	167.4	167.4	178.2	178.2	178.2	421.2	453.6	513	601
Fertilizer Price (Birr/qt)	81.4	81.4	81.4	79.8	79.8	81.4	96.6	88.8	91	107.1	149.7	143.3
Value-cost ratio	2.1	2.1	2.1	2.1	2.1	2.2	1.8	2	4.6	4.2	3.4	4.2
Barley												
Incremental yield (qt/ha)	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
AMC FG price (Birr/qt)	27	27	27	27	27	29	29	29	64	70	74	86.6
Additional value obtained (Birr)	145.8	145.8	145.8	145.8	145.8	156.6	156.6	156.6	345.6	378	399.6	467.6
Fertiliser price (Birr/qt)	81.4	81.4	81.4	79.8	81.4	81.4	88.8	96.6	91	107.1	149.7	143.3
Value-cost ratio	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.6	3.8	3.5	2.7	3.3

Notes: AMC Prices are only up to 1989/90; the Rest are Producer Prices at Market Prices.
Sources: Own Computation From Data Obtained From Minimum Package Programme-2 (1982): Evaluation Report to Revise fertilizer Price for Incremental Yield.
: AMC Annual Reports; CSA.

Annex 4.5. Estimates of the Price Elasticity of Output for Teff, Wheat, and Barley (1989/90-1993/94)

	Qt	ΔQt	(Qt + Qt -1) /2	%ΔQt	Pt	ΔPt	(Pt + Pt-1)/2	% ΔPt	% ΔQt / % Δ Pt
Teff									
1989/90	299.78				59				
1990/91	368.92	69.14	334.35	20.68	69	10	64	15.63	1.32
1991/92	372.05	3.13	370.49	0.84	111.1	42.1	90.05	46.75	0.02
1992/93	299.81	-72.24	335.93	-21.5	130.67	19.57	120.89	16.19	-1.33
1993/94	318.46	18.65	309.14	6.03	140	9.33	135.34	6.89	0.88
Average Wheat									0.22
1989/90	2432.53				41				
1990/91	2289.55	-142.98	2361.04	-6.06	45	4	43	9.3	-0.65
1991/92	1738.68	-550.87	2014.12	-27.35	78	33	61.5	53.66	-0.51
1992/93	2284.29	545.61	2011.49	27.12	84	6	81	7.41	3.66
1993/94	2462.98	178.69	2373.64	7.53	95	11	89.5	12.29	0.61
Average Barley									0.78
1989/90	2740.75				34				
1990/91	2242.89	-497.86	2491.82	-19.98	38	4	36	11.11	-1.8
1991/92	2327.99	85.1	2285.44	3.72	64	26	51	50.98	0.07
1992/93	2546.94	218.95	2437.47	8.98	70	6	67	8.96	1
1993/94	2427.13	-119.81	2487.04	-4.82	74	4	72	5.56	-0.87
Average									-0.4

Source: Own Computation From Data Obtained From Annex 4.1.

: CSA, Agricultural Sample Survey: Results of Area, Production and Yield, Statistical Bulletins of Various Years.

: Arsi Agricultural Development Department Annual Reports.

: Oromiya Planning and Economic Development Bureau (1996), Statistical Bulletin.

: Annex 4.3.

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