Ethiopian Economic Association (EEA)

PROCEEDINGS OF THE THIRD INTERNATIONAL CONFERENCE ON THE ETHIOPIAN ECONOMY

EDITED BY

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Volume I

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FOREWORD

Ethiopian Economic Association (EEA) has been organizing annual conference on the Ethiopian Economy every year as part of its overall objectives and institutional mandate to the advancement of economic development and the study of economics in Ethiopia since its inception. So far EEA has conducted 14 annual conferences. The first 11 annual conferences primarily focused on encouraging local research on different thematic areas. Since then the annual conference has been upgraded to an international level by inaugurating the First International Conference on the Ethiopian Economy in January 2003.

As a result of this and other efforts of the Association, EEA has established itself as a truly independent source of socio-economic policy options and data base in Ethiopia for the Ethiopian Government, the Ethiopian people and the International Community at large.

The 3rd International Conference on the Ethiopian Economy was held during June 2 – 4, 2005 at the United Nation Conference Centre at Addis Ababa. The conference attended by about 400 participants. The conference was organized in four Plenary Session and five concurrent sessions. The Plenary Sessions were

co-organized by the World Bank, Forum for Social Studies, Environmental Economics and Policy Form, WeD and ECA-ESPD. The Plenary Sessions accommodated about 15 papers on Poverty, Land Policy and Environment. Similarly in the concurrent sessions about 52 papers were presented in the area of macro and sectoral issues.

Out of the total 67 papers presented in the 3rd International Conference, the editorial committee received 45 papers from authors and reviewed them. Comments and suggestions including editorial comments were communicated to authors for improvement. Among the 45 papers, the editorial committee selected 28 papers to be included in this edition. These papers are organized in two volumes. Volume I contains growth and development and Volume II contains sectoral issues.

I would like to take this opportunity to express my heartfelt gratitude, on my own behalf and on behalf of the Ethiopian Economic Association to the many people and organizations who made the conference a resounding success. First and foremost are the authors of the papers and the audience whose active participations made the conference meaningful and dynamic. The UN Economic Commission for Africa deserves great thanks for granting us the free use of the UN Conference Centre. Ethiopian Bankers Association and Ethiopians Coffee Exporters Association are acknowledged for sponsoring the conference. The many professionals who dedicated their time to the conference and served as chairpersons deserve thanks for their special contributions.

The staffs of the EEA/EEPRI deserve a special recognition for their enthusiasm and perseverance in managing the conference from inception to completion.

I would like to extend my personal gratitude to the Organizing Committee and members of the Executive Committee of the Ethiopian Economic Association for the dedicated service and the leadership they provided to the Association.

Finally, I would like to take this opportunity to express our gratitude to the Consortium of Donors who have funded the conference and all other activities of

EEA/EEPRI and have continued interest in our Association. These are: Friedrich Ebert Stiftung of Germany (FES), Development Cooperation of Ireland, embassies of UK, Sweden, Norway, the Netherlands, and the African Capacity Building Foundation (ACBF).

Wolday Amha (Ph.D)
President of the Ethiopian Economic Association

Growth and Development

CONTENTS

IMPEDIMENTS TO POVERTY REDUCTION IN ETHIOPIA: ECONOMIC GROWTH, DISTRIBUTION AND POLICY ISSUES

Abu Girma Moges[1]

Abstract

Poverty is the most pressing challenge in Ethiopia with multi-dimensional features and multiple causes. Public policies to address chronic poverty have gained wide international support and yet the task of reducing poverty has proved to be a daunting challenge. This paper addresses the challenges of reducing chronic poverty in Ethiopia. We develop theoretical and policy arguments and identify the nature and dynamics of poverty in the country. The pace of poverty reduction in Ethiopia is too slow to consistently reduce, let alone eliminate, chronic poverty and there are significant economic, political and policy challenges that hinder sound poverty elimination strategies. The role and interaction of economic growth, distribution of income, institutional

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factors and policy measures are examined to explore policy options for developing a more efficient poverty reduction policy and strategy.

JEL Classification: I32, E25, O11

1.   Introduction

Poverty is a multidimensional and dynamic concept. It is a phenomenon in which a segment of the population fails to earn sufficient income or be provided with resources that would allow a decent economic and social life. Addressing the problems of poverty has always been one of the priority policy targets of governments and yet the task has proved itself as daunting. Poverty and its dynamics have multiple causes that exhibit production, distributional and institutional characteristics.

The challenges in addressing poverty and the underlying dynamics vary across countries. The impediments to reduce poverty are severe in developing countries where income is extremely low, growth rate has been rather weak and income distribution is uneven. These features of the production and distribution of output create systematic tendency for the poverty elasticity of income to be weaker making the growth induced poverty reduction policy less effective (Besley and Burguess, 2003; Burgingnon, 2003). In economies where the initial pattern of income distribution is highly unequal and vertical mobility is highly restricted by economic, social and institutional hurdles, economic growth –if it happens at all- tends to have limited impact on reducing poverty (Addison and Cornia, 2001). Whereas redistribution policies, when cautiously implemented, might be used to address immediate crisis situations, they have limited effectiveness in reducing poverty on a sustainable basis.

Ethiopia is one of the poorest countries in the world where generalized poverty, low income and productivity, unsustainable growth process, chronic poverty, widespread

social and economic problems remain to be characteristic features of the economy. When an economy finds itself in such a situation, sustainable reduction in chronic poverty requires comprehensive measures and policy initiatives. The performance of the national economy in the past decade or so has been quite modest and the pace of poverty reduction remains weak. At the current pace, the attempt to reduce, let alone to eliminate, chronic poverty in the country will be unrealistic and calls for reexamination of the current strategies and policy approaches in the system.

This paper addresses impediments to sustained poverty reduction in Ethiopia. It briefly reviews the main features of the economy, assesses areas of growth opportunities, and identifies the main constraints to achieve sustainable economic growth and poverty reduction. The main impediments to poverty reduction in Ethiopia emerge from a complex interaction of economic, political, social and institutional factors and hence poverty reduction policies should address these underlying forces to develop strategies with lasting effect.

The rest of the paper is organized as follows. The next section discusses some conceptual and measurement issues of poverty and some aspects of poverty reduction and elimination endeavors. Section three deals with the features and characteristics of poverty and poverty reduction strategies in Ethiopia. We discuss the policy options and constraints that influence the growth, distributional and poverty situation in the country and explore the policy options for addressing the problems of chronic poverty in the country in section four. The final section draws concluding remarks.

2.   Conceptual and measurement issues

Poverty is a multi-dimensional concept. It generally refers to inability of households to provide sufficient subsistence and to lead a decent economic and social life. The threshold poverty line is estimated on the basis of the cost of providing basic necessities of economic and social life in the context of a given society. The basis for estimating the poverty line is usually household budget expenditure surveys for the bottom strata of the population and the propensity of such households in their budget allocation. Whereas the currently widely used international poverty line of a dollar a day is appealing to capture popular attention, the national poverty line is more

commonly used in the discussion of poverty issues within a nation (Chen and Ravallion, 2001, 2004; Deaton, 2001, 2002; Kanbur, 2001; Collier and Dollar, 2001). In the case of Ethiopia, for instance, the national poverty line, which focuses on the domestic cost of living and consumption habits of families, is equivalent to about US $ 0.45 per day per person (UNCTAD, 2002).

Measurement of economic activities in developing countries is a daunting, costly and imprecise task. Most countries have limited information about the level and distribution of economic activities and their population. And whatever data is available often times is of poor quality. Poverty analysis on the other hand is a highly data intensive task and its interrelated nature requires broad and accurate information base to draw a fairly defendable argument and conclusion. The lack of reliable information about the status and trends in poverty indicators has restrained the capacity of economic analysis to provide firm basis for analyzing poverty and its dynamics and in the process limiting its capacity to inform sound policy decisions.

Our understanding of the poverty situation of a country is as good as the available data on income, its distribution across economic agents and households, the reliability of the national absolute poverty line, and the conceptual framework that provides a concise relationship among these variables. It is crucial to have a consistent yardstick in which to measure the scope and severity of poverty in a country at a point in time as well as over time.

Once there is a reliable poverty yardstick-such as the absolute poverty line- the next task is measuring the proportion of the population that lives on income below the poverty line. This in turn requires information both on population and the distribution of income across the population. The headcount poverty index hence could therefore be affected by one or all of the factors including population growth, the growth of income, the distribution of income, and the level of the poverty line.

The change in the poverty index therefore could be the result of increase in the population, growth of income relative to the poverty line, changes in the distribution of income relative to the poor, the reduction of the number of people living in chronic poverty, and the propensity of vertical mobility in the system where children born into poverty can escape poverty, the capacity of the system to shield the destitute from poverty and the combination of all these factors. It is quite feasible that the absolute

number of people living in chronic poverty might be increasing whereas the poverty index is actually falling. A strategy to reduce and eliminate poverty should therefore be undertaken with a clear understanding of what mechanisms influence the dynamics of poverty in the country.

The concept of poverty reduction, as is currently used, has ambiguous features and imprecise meaning. The poverty index could be reduced without necessarily reducing the absolute number of people struggling in chronic poverty. This is particularly relevant in countries where population growth is very fast, life expectancy is short and more children are born into poverty than those born in non-poor families or escaping the poverty trap. Moreover, the concept has inter-temporal ambiguity in that the poverty reduction strategy might become the victim of its own success. If one assumes that public policies reflect the will of the majority, at least in a democratic political setting, decline in the poverty index reduces the incentive for public policies to emphasize on further reduction measures especially when such measures are financed by contributions from the non-poor segments of the population. It therefore becomes important to develop poverty elimination strategies that appeal both to the poor and the non-poor in society and emphasize the idea that eliminating chronic poverty is to the vested economic, social and political interest of the whole population in a nation. The implication of such a perspective is that poverty could be eliminated only if there is an emerging consensus and action by the entire population. It also suggests that a nation can not consistently reduce, let alone eliminate poverty, by depending dominantly on external aid and charities.

Poverty reduction policies at the national level also need to have accurate mapping of poverty in the country and across sectors as well as urban-rural manifestation of their strategies. Uneven level of economic development and growth of income across regions, sectors, rural-urban divide and urbanization rate, and the propensity of permanent relative to transient poverty requires strategies that incorporate these variables to address chronic poverty. These features not only shape the poverty map of a country but also influence the effectiveness of policies to reduce chronic poverty at the local as well as national level on a sustainable manner.

The issues of poverty reduction and elimination could be analyzed from the perspectives of the process of economic growth and distribution of economic opportunities across economic agents and households. The two processes have

important effects on the capacity and opportunity to address the scope and depth of poverty in an economy. These two features are also closely interrelated because they are manifestations of the same income distribution. Whereas the level and growth of income in an economy are more or less discretely measurable, the pattern of income distribution across economic agents or households is not readily known. Instead, most economic analyses on the distribution of income assume that the logarithm of income has a pattern of normal distribution.

The level as well as growth of mean income, relative to the absolute poverty line, is an important factor in determining the capacity of an economy to address the problems of poverty. When generalized poverty prevails, average income falls short of the national poverty line and the economy simply cannot produce enough goods and services sufficient enough to eliminate poverty. In such a setting, redistribution policies have limited impact on reducing poverty. The first order of priority in such a situation is to achieve the minimum level of aggregate output expansion and productivity improvement that is critical to push the economy towards mean income higher than the poverty line. This in turn requires thoroughly examining the economic, social, political and behavioral factors and institutions that give rise to under capacity utilization of natural and human resources in the economy and launching all out effort to engage all economic agents in productive endeavors.

However, even when an economy improves its productive capacity and average income is higher than the absolute poverty line output may not or could not be evenly distributed across households. Inequality and its root causes extend beyond economic forces. Theoretically, the dispersion of actual income from the average level could range from zero to unity. However, observation of cross country patterns of income distribution suggests that even the most egalitarian societies have index of inequality in the range of 0.20 to 0.25 whereas the most unequal economies register about 0.60 to 0.66 (Milanovic 2003; UN-WIDER, 2004). Any society has to maintain some balance between the fairness and justice in the distribution of opportunities and the incentives that encourage economic agents to work hard, invest, and generate more income opportunities which might induce some forms of inequality. However, not all inequality in a system reflects injustice. When the rewards that economic agents receive adjusted relative to their effort, dexterity, and creativity are fairly balanced, it maintains the incentives for higher efficiency and growth in national income.

An economy that manages to register fast and sustained economic growth can reduce poverty provided that it creates opportunities for an increasing share of the population. Economic growth is indeed the most powerful instrument to reduce poverty provided that it creates employment opportunities to the poor, increases the demand for factors that the poor owns, and creates the condition in which the poor develop the capability to accumulate productive assets on themselves that prepare them for productive and better life.

Economic growth has twin effects both of which have important effects on poverty indicators. First, economic growth increases the mean income of all households without necessarily changing their relative income (Dollar and Kraay, 2001). There is also a distributional effect in which the growth process is accompanied by changes in the relative income with ambiguous effect on the poverty indicators (Ravallion, 2001; Kraay, 2004). Nonetheless, the growth process might exhibit anti-poor elements when economic agents are not positioned to equally participate and benefit from the growth process due to lack of appropriate training and human capital, access to financial services, distorted investment policies, and restrictive economic policies.

Economic activity in a nation is determined by the amount and efficient utilization of factor inputs for a given state of technology. The process of economic growth hence is broadly dictated by increases in both human and physical capital accumulation, technological progress and improvement in institutional factors that provides favorable environment for accumulation and growth. The distributional effects of the growth process are hence influenced by the extent to which the poor have access to productive employment opportunities to improve their productivity and earn a decent living. If we focus on the relationship between economic growth and the indicators of poverty, holding all other factors constant, fast and sustained economic growth is necessary for reducing indicators of poverty.

This observation presumes that the growth process exhibits at least distributional neutral features. There are, however, strong tendencies that cast doubt on the distributional neutrality of growth. The growth of income of a national economy does not benefit equally all economic agents for a host of reasons including differences in resource endowment; inputs market imperfections, government policies, institutions, and social relationships. Economic growth benefits first and for most those who have

the capability to initiate growth and it eventually reaches those economic agents who get employment opportunities and those who produce factor inputs for the production processes. This process is gradual and its flow does not necessarily involve a significant portion of the population. It is possible that economic growth could be driven by a sector with very weak linkage with the rest of the economy and with inconsequential effect on employment generation. Such a growth process can give rise to deterioration in the distribution of income and worsens the inequality situation leaving the majority of the population behind.

The theoretical relationship between economic growth and inequality has not been clearly established. Whereas it is quite standard that the growth rate of income and its distribution across economic agents have important implications for poverty reduction efforts, the policy issue stretches beyond these variables. There are underlying forces that influence why some countries manage to achieve sustained economic growth and improve the pattern of income distribution while other countries fail. It is therefore imperative to analyze these factors in the processes of economic growth. The policy issues are related to the availability and effectiveness of public policies that promote shared economic growth patterns for sustainable poverty reduction.

In the context of developing countries, poverty reduction policies are complicated by demographic factors and dynamics. Developing countries are characterized by rapid population growth with high mortality and birth rates and large family size. These features in turn mean relatively young population composition that exerts considerable challenge as well as opportunities to economic policy makers to take into consideration in their effort to address the issue of poverty. In a system where population is growing fast and demographic transition is yet to materialize, most children are born into poor families which compound the problem further not only on current poverty situation but also on how to provide them with necessary health, educational, and other social services that creates opportunities and capital for productive life. If a system manages to equip its citizens with the necessary human and physical capital, it can sustain economic growth and could have opportunities to even eliminate chronic poverty.

3.   Ethiopia: Poverty challenges and policy responses

Ethiopia is in a situation of generalized poverty. The average level of income and productivity in the economy falls short of the required consumption expenditure necessary to lead a decent life. The national income per capita in 1999/2000 was just Birr 254 in 1980/81 prices (MOFED, 2005). The national income accounts perspective and data could be viewed in conjunction with the consumption expenditure data complied by national expenditure surveys for 1995/6 and 1999/2000. Real mean consumption expenditure on food and non-food items, in 1995/96 prices, was Birr 1057 per capita in 1999/2000 relative to Birr 1088 in 1995/96 (FDRE, 2002)[2]. These figures, relative to the national poverty line of Birr 1075, reflect the dire situation that the nation finds itself. From both perspectives, it is clear that the average income and consumption expenditure fall short of the national poverty line. The implication of such disturbing economic statistics, despite their poor quality and limited scope, is that chronic poverty is widespread and requires major and comprehensive measures.

The first order of priority in such a situation is enabling the economy and economic agents improve productivity beyond and above the poverty line. The poverty situation in Ethiopia exhibits a number of unique features and characteristics that reflect the performance of the national economy, the dynamics of population growth, the distribution of opportunities, small households and subsistence dominated agricultural sector, and the policy environment that hampered the realization of the economic potentials of the nation. These features resulted in low productivity of labor. Not only is productivity very low but also it has been stagnant over time. The harsh initial economic conditions, low educational and health indicators of human capital, weak and prohibitive institutional factors have all exerted adverse influence on economic performance.

Addressing the problems of poverty in Ethiopia requires setting the priorities in order and undertaking appropriate measures to improve the capacity of the economy to increase productivity. Pursuing policies for the sustainable and shared economic growth opens opportunities for an increasing portion of the population to contribute and benefit from the growth process.

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[2] The real consumption expenditures, when imputed on the basis of 1980/81 GDP deflator base, were equivalent to just Birr 433.6 and Birr 421.0 for 1995/6 and 1999/2000, respectively.

Growth accounting provides a simple basis to quantify the sources of growth as well as to assess constraints and prospects for future growth. Under some binding assumptions of competitive factors market and constant returns to scale in production, the quantitative description provides some highlights on the performance of a national economy. And yet, careful interpretation of the findings is warranted. Despite numerous exercises, the main debate on the sources of long term economic growth has remained one of the unsettled issues in economic analysis and policy discourses (Baier et. al., 2002; Bosworth and Collins, 2003; Kruger et. al. 2001). The estimates on the relative importance of capital accumulation relative to TFP in the economic growth of Ethiopia have not been consistent. For different period and data set, capital accumulation was credited for influencing growth performance (Geda and Degefe, 2002) while others report the importance of TFP (Easterly, 2002) in the growth process of the Ethiopian economy.

Table 1 reports the growth rate of labor productivity in Ethiopia and the contributions of accumulation of physical capital, improvement in the human capital and the role of total factor productivity (TFP) in the economy from 1960 to 2000. It quantifies the long-term trend as well as medium term performance on the basis of specific periods that signify important marks in the economic and political history of the country. The clear message of the quantitative indicators is that productivity in Ethiopia is not only very low but also practically stagnated over decades. The average growth rate of labor productivity was 0.08 percent over a span of four decades. The growth in real GDP over this period was about 2.56 percent which was largely attributable to the expansion of the labor force at an average rate of 2.47 percent. This amounts to persistent stagnation of output and productivity. Such a rapid growth of the labor force also exerted pressure on the accumulation of physical capital and the challenges of providing educational training for those soon to join the labor force.

The stagnation in the growth rate of labor productivity is partly attributable to the weak performance in the accumulation of both physical and human capital in the economy. Physical capital stock per worker grew at an average rate of 2.667 percent per year for the entire period of analysis. The growth rate was 6.15 percent for the imperial regime, 2.24 percent during the Derg and 3.07 percent during the post-Derg period. Such a rate of capital accumulation per worker from an initially low level of capital intensity indicates the limitation that scarcity of capital poses on efforts to improve productivity of labor. It also contrasts the relative performance of the economy across policy regimes in terms of capital accumulation.

A similar story emerges from the growth rate of the stock of human capital. Here human capital is narrowly defined to mean educational training without taking due consideration to health and work experience of the labor force. I used a 13 percent rate of return on educational investment[3] and the estimates indicate that human capital per worker grew at an average rate of 0.55 percent per year for the entire period. This is as dismal a performance as it can get and the contribution of human capital accumulation in the growth process was very marginal. Despite the low initial level of both human and physical capital stock, the economy has failed to achieve sustained accumulation of such important factor inputs and equip the labor force with the necessary capabilities to improve its productivity.

Table 1: Ethiopia: Sources of Economic Growth (1960 - 2000)

Regime/ Period	Growth of Real GDP	Growth rate of labor productivity	Contribution of physical capital	Contribution of Human Capital	TFP Contribution
Imperial (14)					
1960-1974	**4.3768**	**1.9301**	**2.1518**	**0.1125**	**-0.3343**
Derg (17)					
1974-1991	**1.4461**	**-1.2398**	**0.7848**	**0.4578**	**-2.4823**
1974-1983	2.5573	-0.7708	0.3186	0.3184	-1.4078
1983-1991	1.2632	-1.3090	0.8062	0.5532	-2.6683
Post-Derg (9)					
1991-2000	**5.3679**	**2.1025**	**1.0757**	**0.5036**	**0.5232**
1991-1997	6.2130	1.7492	0.9619	0.5036	0.2837
1997-2000	3.7561	2.6205	1.1039	0.5036	1.0131
1992-2000	5.7024	2.2652	1.1744	0.5036	0.5872
Total (40) 1960 - 2000	**2.5552**	**0.0844**	**0.9334**	**0.3591**	**-1.2080**

Note: 1. Computed on the basis of a basic macroeconomic production function:

$Y(t)= A(t)F(K(t), H(t)) = AK^{\alpha} (LH)^{1-\alpha}$ where Y is real GDP, K is the stock of physical capital, L is labor force, $H=(1+r)^S$, is the stock of human capital of the adult population measured by schooling, S, and r is the rate of return on additional year of schooling and α is the share of capital assumed to be 0.35.

2. The growth rate is estimated by the trend average instead of end point logarithm difference which conceals variations in the underlying variables.

Source: Computed from data sources of World Bank WDI 2004, Bosworth and Collins, 2003.

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[3] The rate of return to schooling depends on the level of economic development of the nation and the operational efficiency of the labor market. On the basis of earning surveys, some studies suggest average rates of return on schooling of 7 percent for high income countries, 10 percent in Asia and Latin America and 13 percent in Africa (Blis and Klenow, 2000).

Accumulation of capital, of course, does not ensure fast and sustainable economic growth performance. It takes creating the policy, investment, political and social environment that encourages the most efficient utilization of such factors of production to generate sustainable growth opportunities. The growth accounting exercise tells a part of an important economic story. This framework, by design and construction, designates what it cannot attribute to factor accumulation in the growth accounting to total factor productivity (TFP). Whereas changes in TFP is supposed to capture some important factors that operate in the efficient utilization of labor and capital in the production process, TFP could mean several things so long as it has some effects on how factor inputs are employed. TFP growth could mean technological progress, institutional improvement, increasing returns to scale, measurement error in output and capital accumulation, deviation of social and private marginal returns, and imperfect competition in the factors market.

Ethiopia exhibited significant deterioration in TFP over our period of analysis. The economy had an average annual factor productivity deterioration of 1.2 percent. These are reflections of the deterioration in the policy environment, weakening institutional capacity, and worsening in the economic and political environment which effectively hampered the efficiency and effectiveness of the economy to produce and accumulate. The effect of such deterioration over an extended period of time is indeed significant. Even if very weak accumulation of physical and human capital limited the process of capital deepening in the economy, TFP remains the dominant force that dictated the pace of economic growth. In other words, if the economy had managed to prevent TFP from deterioration, labor productivity would have reached about 62 percent higher than the current level even with the meager rate of investment in physical and human capital.

This observation poses a challenging problem as to what policy makers and economic agents should do or not do in order to improve the contribution of factor productivity in the growth process. Since TFP is the unexplained and un-quantified composite of economic and non-economic factors that might have impact on growth performance, it might mean quite a comprehensive set of issues and factors. It includes institutions, values and culture, omitted variables, policies, national spirit, unaccounted variables, etc and influencing such a range of factors brings considerable challenge to policy making.

This issue leads us to the question of what are the prospects for sustainable increase in the growth rate of productivity and income of the economy. Despite the occasional recoveries, Ethiopia is still beset by stagnation and volatility in growth performance with excessive dependency on the vagaries of nature. It is not therefore surprising that the poverty situation in the country could not register sustainable improvement over time. Recovery in productivity took a long period to reinstate after major shocks in the economy.

Economic growth in Ethiopia is conditioned on the capacity of the country to realize the productive potentials of its citizens and creating the opportunities to technological progress and adaptation. These conditions in turn require the accumulation of human and physical capital that improves the capacity of the labor force to engage in activities with higher productivity potentials. Besides eliminating bureaucratic hurdles to investment and radically changing the hostile investment environment, it is necessary to create institutional arrangements that proactively promote the accumulation and productive utilization of all economic resources.

In the context of Ethiopia, it is imperative to emphasize the crucial importance of capital accumulation accompanied by judicious and efficient allocation to establish firm foundation for economic growth and development. The low level of productivity and income pose considerable constraint on the capacity of the economy to save and invest. However, it is important to note that the under capacity utilization of economic resources in the economy coupled with appropriate incentive for economic agents could generate persistent improvement in exploiting investment opportunities and subsequently improving the capacity to save and invest in the economy.

It is evident that economic growth alone could not accomplish the task of reducing chronic poverty. Whereas fast and sustainable economic growth is a necessary condition, it is not sufficient to achieve poverty reduction. Egalitarian distribution of income and ensuring sufficient subsistence to the poor are critical elements in shaping the poverty landscape of a country in the short to medium term. In the long term context, it is necessary to reform the institutions, encourage vertical social mobility, address the underlying forces that shape the economic opportunities available for poor people through educational and asset accumulation efforts, and

developing strategies in which the non-poor recognizes its vested interest in the elimination of poverty.

Unlike the conventional belief, poor countries do not necessarily have more egalitarian income distribution (Milanovic, 2003; UN-WIDER, 2005). There is also emerging evidence that indicates deterioration in the distribution of income and rising inequality in such economies. This situation can make economic growth to benefit a relatively small portion of the population and leave the majority in chronic poverty.

The distribution of income relative to the average when the average level of income is increasing is therefore an important factor that would affect how economic growth could translate into poverty reduction. Improving the pattern of income distribution is a slow process that could be addressed in a long term context and involves crucial economic and political innovations and compromises (Lipton and Ravallion, 1995; Bourguignon and Morrison, 2002; Li et. al. 1998). This is particularly challenging when the initial level of poverty is severe, per capita income is low and growth rate is stagnant and income distribution is uneven and/or deteriorating. Whereas redistributive policies are feasible and affordable in countries where growth is fast and wide in scope, such policies might hamper growth initiatives and generate little effect on poverty reduction efforts in stagnant economies.

How serious a concern is the problem of uneven distribution of income in Ethiopia? Reliable and comprehensive data is not available to make firm judgment about the level and trends in the distribution of income in the country. The recent information on the distribution of income and index of inequality indicates that the Gini-Coefficient was 28.0 percent in 1999/2000 as compared to 29.0 percent in 1995/96 and 32.42 in 1981(FDRE, 2002; UN-WIDER, 2005). If these figures are reliable enough, then the country has somewhat maintained the distribution of income stable at relatively low level. The share of national income (consumption expenditure) that accrues to the bottom 20 percent of the population was just about 9.1 percent whereas the bottom 40 percent of the population manages to receive about 22.3 percent of income (World Bank, 2005; FDRE, 2002). These indicators could be compared with index of inequality in other developing countries such as Kenya (42.5 percent), Namibia (70.7 percent), and Japan (24.9 percent). These figures highlight the limitations of assuming poor countries have equitable distribution of income and the conventional trade-off argument between economic development and inequality.

4.   Policy issues and strategies

The issue of poverty could be seen from the perspectives of the process of production of national output, the distribution of national income, and the demographic features of a nation. The impediments to poverty reduction are closely related to these factors and the underlying variables operating within a setting of a national economy. The underlying forces of poverty and its dynamics in Ethiopia have both production inefficiency and distributional inequity characteristics. Addressing the problems of poverty in the country therefore require efforts to improve production allocation efficiency, productivity, investment in human and physical capital, improving the distribution of resources and opportunities, and undertaking sound institutional reforms.

A realistic assessment of the growth prospects of the economy and the factors that have hampered and might continue to hamper the realization of fast and sustained economic growth is very imperative. The main factors for economic stagnation are harsh initial conditions, hostile investment policy environment, weak human and physical capital accumulation, political instability, conflicts, weak institutional capacity and infrastructure, rampant corruption, frequent external shocks and the demographic factors (Moges, 2004; Geda and Degefe, 2002, Easterly and Levine, 1997; Mauro, 1995).

The current trend in poverty reduction in Ethiopia and the capacity of the economy to generate growth and improve its equitable distribution strongly suggests that the pace of poverty reduction is weak and has no momentum. At the current pace, Ethiopia could hardly be able to achieve most of the Millennium Development Goals by 2015. Despite these facts and absence of a coherent policy of promoting sustained and shared economic growth in the economy, policy makers in the country have repeatedly declared that the country would achieve the millennium development goals (MDGs). This is rather irresponsible position and it diverts policy priorities and realism in the policy decision making processes. Even the unlikely scenario of doubling foreign aid inflow could not accomplish the task given the human capital constraint, the policy environment and the failure to undertake bold and credible policy reform measures. The denial exercise also puts into question the credibility of

decision makers and the issue of public accountability in economic policy making. Unfortunately, sustained poverty reduction could not be achieved without a meaningful and leading role of domestic private sector involvement in all aspects of production and support for sound policy and institutional reforms.

Ethiopia formally embarked on anti-poverty reduction strategy, with the sponsorship of the IMF and the World Bank, in 2002 and the government put its objectives and policies in its poverty reduction strategy paper –Ethiopia: Sustainable Development and Poverty Reduction Program- which assesses the poverty situation in the country, the sources and constraints to economic growth, and outlines measures to address them (FDRE, 2002). The document boldly claims that the country can achieve all the development targets by 2015 which critics and supporters alike find it somewhat unrealistic (World Bank and IMF, 2004; EEA, 2000/01).

The core of the strategy of the policy is to achieve an average annual real GDP growth rate of 5.7 percent from 2002/3 to 2015/16 to reduce the rate of poverty by half during this period (FDRE, 2002). The strategy suggests that, with further improvements in institutional factors, efficiency of public services and policy environment, the required growth rate would be about 4.7 percent per annum. Moreover, the expectation for doubling of foreign aid inflow has tempted policy makers to revise their targeted growth rate to 7 percent hence ensuring the achievement of the income poverty target (FDRE, 2006). A closer examination of the underlying impediments of poverty reduction indicates that such policy assertions are unsubstantiated concreteness.

What does it take to achieve such a growth rate of income? There are a number of issues that must be critically assessed to get a plausible picture of the growth prospects of the country. First, whereas growth rate in real GDP exhibited remarkable improvement during the 1990s as compared to the 1980s, it is largely explainable by a recovery process instead of sustained expansion of the productive capacity of the economy. Moreover, the volatile nature of growth and its excessive dependency on the vagaries of nature makes the growth performance erratic and closely tied to weather conditions. For instance, the level of labor productivity managed to recover to its 1983 peak only by the year 2000 which indicate a long and sluggish recovery process. Generating further growth requires not only the full utilization of the capacity of the economy but also fast and sustained expansion of its capacity. These in turn

require sustained accumulation of human and physical capital as well as the creation of institutions and policies that render the most efficient utilization of these resources possible. It requires the involvement of the domestic economic agents in the generation, employment and efficiency improvement of capital in the economy and enjoying the benefits of their effort.

Second, the county has low inequality as expressed in its Gini-Coefficient of consumption expenditure. This is somewhat consistent with the low level of income and the widespread nature of poverty in the country. When economic growth gathers momentum, it also generates tendencies to distribute benefits in such a way that reflects the productive capacity and effort of economic agents. When economic agents do not have equitable access to productive capital accumulation and training opportunities, the growth process might generate tendencies that weaken the egalitarian nature of income distribution. It is therefore important to address in time the underlying differences across economic agents in terms of access to opportunities and training that would enable them to productively participate in the growth process. On the other hand, a relatively low degree of income inequality indicates that there is little room for improving the poverty situation in the system through redistributive policies.

Third, Ethiopia has formidable challenges to address the problems of poverty and hunger over medium-to-long term horizon. The poverty level, relative to the national poverty line, indicates that about 44.2 percent of the population lives in poverty in 1999/2000 as compared to 45.5 percent of the population in 1995/96 (FDRE, 2002). This was equivalent to about 29.6 million Ethiopians in 1999/2000. A population projection for Ethiopia, the median variant, puts total population of the country to about 97.2 million by 2015 and 170.2 million by 2050 (United Nations, 2004). The population expands on average with about 2 million people every year for about five decades. Most, if not all, will join poor families and reside in rural areas. This implies that even if the country were to manage reducing the poverty index by half from its current level, about 21.5 million Ethiopians will be living in chronic poverty by 2015. This in its own right complicates the demographic effects on poverty reduction and related issues (Brown et. al. 1998). It will not be possible to consider such poverty reduction achievement as successful by any standard or perspective.

These projections on the poverty trend, as grim as they indeed are, may not necessarily become reality provided that appropriate and comprehensive measures are taken in time. The capacity of the economy to assess its opportunities and act upon them so that an increasing share of the population could be engaged in productive activities could shape the poverty trend and its prospects to achieve economic, social and political development goals.

Economic growth could be sustained only if all economic agents and resources are engaged in productive activities, are in the process of human capital accumulation, and have ample incentive to accumulate capital, employ them in efficient ways and benefit from it. This requires not only eliminating policy barriers but also tuning policies towards full utilization of the potentials of the economy. Currently, labor productivity is very low and the labor force suffers from lack of necessities that would enable it to work long and exert maximum labor input in the production process.

The situation of generalized poverty limits not only our capacity to eliminate poverty but also exerts its influence on our institutions and behavior in economic decision making. It has affected our political behavior as well. One of the typical features of the Ethiopian economy is that about half of the national output is produced in a subsistence dominated agricultural sector which employs more than 80 percent of the labor force. This reflects both the dominance and weakness of the agricultural sector. Poverty is widespread in the sector so much so that life is brut, short, and subjected to the daily tragedy of hunger. Farmers are not physically fit to engage in labor intensive activities for long and with dexterity hence limiting the amount and quality of their labor input in the production process. Even if hardship and the threat of hunger conditions the body for exerting effort, there are limits that the body could endure. The labor force hence would generate a disproportionately lower amount of effective labor input to the production of goods and services.

This situation calls for new initiatives and mechanisms under which farmers with food deficiency could be provided food credit and health support for a certain period of time so that they could improve their productivity as well as escape from the cycle of hunger and under utilization of their physical capability. This is a prudent social investment which could be assisted by private sector intervention for the realization of the minimum threshold of producing sufficient output for subsistence as well as accumulation. Such a transitional intervention measure could be adopted in gradual

phases starting with areas with high potential and lagging behind in terms of productivity and the mechanism could be operated on private sector led, government sector assisted, and socially supported manner.

The physical, health, and cultural handicaps continue to hamper the full dexterity of the labor force in the production process. In such a situation, there are deficits that the economy must bridge before realizing its potentials. As to the economically active population engaged in agriculture, there is deficiency in the amount and quality of nutrition for them to fully engage in production. Moreover, the increasing scarcity of land and the emergence of "hunger" plots increase the pressure on land utilization coupled with mismatch between labor force distribution and arable land across the country. These problems might worsen with the population pressure. One of the priority issues in this respect is to identify unused arable land and make appropriate investment to make them usable both by providing essential infrastructure and by reducing the disease risk that has made them inhospitable for farmers to live and work. Once such measures are taken, farmers could be invited on a voluntary basis and with incentive mechanisms to take advantage of the opportunities. The failed experiences of the past should serve as a clear lesson not to taint the economic opportunities as political maneuver to control and subjugate farmers. Moreover, it is a prudent social investment to provide food credit to farmers who remain in their old settlements to cover their nutritional deficiency which hampers their productivity. This could improve the length and intensity of work of the labor force besides its direct effect to reduce the suffering from hunger.

To ensure the sustainability of such an approach, it is necessary to invest in the provision of food and basic health services to children so that they could grow physically and mentally capable of engaging in productive activities. This could be complemented by comprehensive social education programs that enrich our food culture, basic health care, and work ethics. Adaptation of social services to the local circumstances in Ethiopia such as the design of village level basic literary education system with flexible schedule and jointly supported by local and national resources, village library system, the promotion of mobile clinic to basic health check system, and similar initiatives that could improve the length and intensity of labor input in the production system are necessary. These initiatives improve the capacity of the labor force to increase its productivity significantly with minimum inputs outside the system

and in the process enable the economy escape from the situation of generalized poverty.

Once the economy starts to improve labor productivity and real income is sufficient to provide basic subsistence, further economic growth requires accumulation of both human and physical capital. The accumulation of physical capital and its availability for the labor force to work with requires setting the investment environment attractive enough for economic agents to respond to. The real return to saving and investment could be eroded by lack of property rights, weakness in the rule of law, instability, corruption, and implicit and explicit tax burdens on returns to earned income. In this respect, Ethiopia has a wide area to cover to reverse the current crisis in the saving and investment rate especially by the private sector. Without a domestically driven saving and capital accumulation efforts, it would be unlikely for an economy to sustain its economic growth performance and maintain macroeconomic stability.

The accumulation of human capital is a more challenging and perhaps more critical in the process of rapid and sustained economic growth. The challenge is formidable and yet progress could be made provided that new initiatives are undertaken on a broadly collaborative ways. Currently, about two-third of the Ethiopian population is illiterate and only half of the children at the primary school age have access to educational service. This indicates that at the current rate of primary school enrollment and taking into account the rapid population growth rate, improving access to basic education would be a slow process. Whereas formal education requires long duration and investment in infrastructure and operating costs, it is possible to initiate new approaches that could equip children with basic literary skills. Expanding access to basic education for all school age children is a precursor to sustainable technological progress and productivity improvement. Countries used different approaches to achieve the goal of improving access to basic education. In this respect, the Japanese *terakoya* system where individual houses were used to serve as classrooms during the Tokugawa period of the 19th century to train ordinary people was successful and cost effective. It involved the assignment of local literate individuals to train children in basic education and skills. Similar approach to achieve fast and flexible access to basic education is adaptable in our current context. It is possible to provide basic literary education within a reasonably short period of time by sponsoring literate individuals, such as high school graduates, priests, retired soldiers

and the like, in villages to train children in private houses, community hall, and other suitable places with flexible schedule.

This approach is cost effective and could be sponsored by parents, local administration, private sector companies, individuals and the government to cover the basic costs of running such programs. The flexibility of the system and its possible adaptability to local preferences and time allocation would mean national coverage to basic education and basic literacy could be achieved within a couple of years. The sponsorship could also involve using local resources and rotation labor service of parents to prepare meals and balanced diet for children. The ultimate objective of such measures is enabling children get basic literary skills, balanced nutrition, health guidance, and preparing them for productive life and appreciating the opportunities ahead of them. It also could be used to bridge the gap that children in the rural communities face. This cost effective approach also means the country can considerably improve its stock of human capital for sustainable economic growth.

The accumulation of capital and the efforts to improve the amount and quality of labor input by the labor force are important elements in generating and sustaining economic growth. However, this should be complemented by a host of other factors that affect, in a way or another, the efficiency of factor inputs in the production process. This is somewhat the software of the production system in which the society manages to create cooperative spirit among economic agents, cultivates work culture and ethics, builds social consensus, encourages competitive spirit and weakens perpetual conflicts. A society should not deplete its energy in resolving conflicts instead of mobilizing its collective energy to achieve its priority objectives. Whereas the adoption of the rule of law, clear property rights, accountability, and transparent rules of economic interaction helps to resolve possible conflicts, a society needs to minimize such leakage in its energy and refocus it for collective prosperity.

The rural based agricultural sector is the most dominant and remains to be so in the Ethiopian economy. However, even with a successful transformation of the subsistence agrarian sector requires additional measures to tame the pressure on the sector by improving the employment creating capacity of the industrial and services sectors in the economy. Pursuing effective industrialization policy is not only necessary but also the only way to ensure reducing the burden of population pressure in rural areas and allowing an increasing share of the labor force earn its

livelihood from industrial and services sector. In this respect, the development of basic industries with extensive backward and forward linkage coupled with the establishment of small scale labor intensive industries becomes critical and feasible. The industrial sector is weak and yet with considerable potential not only to improve overall productivity but also generate employment opportunities for the poor with sufficient human capital and training to take advantage of the opportunities. It is not possible to reduce poverty on a sustained manner by exclusively focusing on the agricultural sector.

Distributional issues are important and will become even more so once the economy overcomes the problem of generalized poverty. The current poverty problem is such that Ethiopia could not use redistribution policies alone to fully address the poverty situation. The issues should be addressed instead by identifying the underlying problems that give rise of differences in capabilities in the population. In this regard, policies that open fairly equal opportunities for all and equip our children with the necessary health, nutrition, care and education should be promoted to address long term income distribution concerns.

There are feasible mechanisms that could be used to establish a national social fund to provide basic financing for alleviating the barriers for poor economic agents to engage in productive activities and human capital investment. The resources for such a social cum economic fund could be generated from the private sector with some tax incentives and from the local, regional and federal government annual budget allocation. This should be accompanied by clearing all the social, economic and cultural hurdles for children from poor families so that they will be ready and capable to engage in productive activities and escape the poverty trap. This would also serve as the mechanism to create equal opportunities for all citizens and generate shared and sustainable economic growth.

5.   Concluding remarks

Poverty is a pressing public policy concern in Ethiopia. It has multiple features and causes related to production, distribution, institutional, policy and demographic factors in the system. The pace of poverty reduction has been too weak to make a dent on the problem. Sustained poverty reduction could be achieved by addressing these

causes through fast and shared economic growth that benefits an increasing share of the population. Impediments to poverty reduction emerge from forces that limit the capacity of the economy and the population to realize their potentials. These forces limit the accumulation and efficient allocation of physical and human capital, the expansion of the productive base of the economy, the innovation and adaptation of new technologies in production.

Ethiopia is in a situation of generalized poverty. This situation calls for measures to improve labor productivity and expand aggregate output so that average income reaches beyond the threshold level of absolute poverty line. The recent rate of economic growth and the pattern of income distribution in the country suggest that significant poverty reduction, let alone elimination of chronic poverty, would be unlikely unless a clear shift in policy and practice is put in place. The problem could get even worse given the fact that population is growing rapidly and most children are born into poor families. It is therefore necessary to take timely action to accelerate the accumulation of physical and human capital, undertake comprehensive policy reform measures that promote market forces and private sector development, and pursue institutional reforms to reduce hurdles to full utilization of the potentials of the economy. These measures coupled with prudent social policies that cultivate the environment for collective prosperity and harmonious unity could enable the system to reduce chronic poverty and put the economy on a sustainable development path.

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THE DOHA DEVELOPMENT AGENDA, TRADE FACILITATION AND ITS IMPLICATIONS FOR ETHIOPIA: CHALLENGES AND OPPORTUNITIES

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Abstract

The Uruguay Round started in 1985 and led to the Marrakech Agreement in 1994, the achievement of which is the creation of the World Trade Organization (WTO). Since its establishment, the WTO, has conducted some rounds of Ministerial Conferences, one of which is the 1996 Singapore Conference which identified the so called Singapore issues, i.e., Investment, Trade Facilitation, Competition Policy and Government Procurement.

The Singapore Ministerial Conference instructed the WTO Goods Council to start exploratory and analytical work"on the simplification of trade procedures in order to assess the scope for WTO rules in this area".

In the Fourth Ministerial Conference of November, 2001, representatives of 144 countries which make up the WTO discussed an agenda for future trade talks with development at its core and resulted in the launch of the DOHA Development Agenda. This conference sought a new balance between the needs of the developed and developing countries in the rule based multilateral trading system.

This conference recognized the importance of trade facilitation; among other Singapore issues; to expedite the movement, transit, the release and clearance of goods in international trade; and declared its commitment to ensure adequate technical assistance and support for capacity building in this area.

With world trade growth expanding more than twice as rapidly as world gross GDP over the past decade, the potential rewards from participating in world trade are considerable. Increased trade openness, through lower levels of protection both in developed and developing countries, has contributed to this outcome.

Nevertheless, it is widely accepted that an open trade regime will only foster trade integration when a range of complementary policies are in place. One of the most important policies is trade facilitation measures which need to complement trade liberalization if countries are to increase their external competitiveness and become better integrated into the world economy.

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Ethiopia has been on track to open and liberalize its economy. The Breton Woods institutions have been closely following the liberalization measures the country has taken. The effort to modernize customs is still intact. The excellent moves by the Ministry of Revenue are highly encouraging. Nonetheless, there are a lot of issues to be dealt with to enhance trade, as trade facilitation doesn't at all mean Customs reform only. Trade facilitation is a non- trade barrier (NTB) agenda which can reduce the transaction cost of imports, exports as well as consumers and improve the investment environment and help boost FDI flow in the country.

Ethiopia's application for accession has been accepted by the WTO, a working party has been established, what remains is the submission of the document on the country's trade regime and the lunch of the negotiation. During the negotiation, the negotiators will be encountered with the issues of trade facilitation. The implication of this negotiation is that it demands the simplification and harmonization of trade and trade related procedures which involve the activities, practices and formalities in collecting, presenting, communicating and processing data required for the movement of goods in international trade. The institutions involved in these procedures are customs and other trade border agencies including carriers.

The objective of this paper is to show that trade facilitation is at the top of the agenda in current round negotiations at the WTO, the Breton Woods Institutions and the international business community; indicate the issues involved and to indicate the implications on Ethiopia; demonstrate that trade facilitation, i.e. the simplification, harmonization, automation and speeding up of the international flows of goods and trade information has the potential of bolstering economic growth; present the international trade chain in the Ethiopian context and show how it can contribute directly to promoting supply chain linkages and reducing non-tariff barriers to trade; suggest strategies of securing technical assistance and support in capacity building to all the cross border agencies that involve in a wide range of activities such as import and export licensing procedures, bank procedures, transport formalities; payments, insurance, standards, sanitary and phyto-sanitary requirements, customs formalities and procedures and other financial requirements.

The Doha Development Agenda – is it really a development agenda?

I understand why people use the phrase "development agenda". I have always refused to do so, however, because I withhold judgment. I felt that the expression "development round" was a public relations idea cooked up after Seattle, but I have always disagreed with it and expressed that disagreement in public. I disagree because I think it can create unrealistic expectations, and indeed this is just what is happening.

Interview with the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD), Mr. Rubens Ricupero by Jean Michel Jakobowicz and Seble Demeke, UNOG after the failure of Cancun Ministerial

www.unctad.org

Acronyms

APEC	Asia Pacific Economic Cooperation
BPAWG	Business Process Analysis Working Group
DDA	DOHA Development Agenda
EDI	Electronic Data Interchange
FDI	Foreign Direct Investment
GATT	General Agreement for Tariff and Trade
GFP	Global Facilitation Partnership for Transport and Trade (GFP)
ICS	International Chambers of Shipping
ISO	International Standards Organization
IMF	International Monetary Fund
JITAP	Joint Integrated Technical Assistance Program
LDCs	Least Developed Countries
OECD	Overseas Development Assistance
PSI	Pre-shipment Inspection
NTB	Non- Trade Barrier
S&D	Special and Differential Treatment
SWERPO	Swedish Trade Procedure Council
TFA	Trade Facilitation Alliance
UN/CEFACT	United Nations Center for Trade Facilitation and Electronic Business
US NCITD	United States National Council for International Trade Development
UNCTAD	United Nations Conference for Tariff and Trade
WB	World Bank
WCO	World Customs Organization
WTO	World Trade Organization

I. Introduction

It is widely accepted that an open trade regime will only foster trade integration when a range of complementary policies are in place. One of the most important policies is trade facilitation measures which need to complement trade liberalization if countries are to increase their external competitiveness and become better integrated into the world economy.

Ethiopia has been on track to open and liberalize its economy. The Breton Woods institutions have been closely following the liberalization measures the country has taken. The effort to modernize customs is still intact. The continuation of the customs and tax reform program by the Ministry of Revenue are highly encouraging. Nonetheless, there are a lot of issues to be dealt with to enhance trade, as trade facilitation doesn't at all mean Customs reform only. Trade facilitation is a means to reduce non- tariff barriers (NTB) as a result of which reduce the transaction cost of imports, exports as well as consumers and improve the investment environment and help boost FDI flow in the country, and improve government revenue collection.

Ethiopia's application for accession to the WTO has been accepted, a working party has been established, what remains is the submission of "the document on the country's trade regime" and the lunching of the negotiation. During the negotiation, the negotiators will be encountered with the issues of trade facilitation as they negotiate on Article V, VIII and X of the GATT 1994. The implication of this negotiation is that it demands the simplification and harmonization of trade and trade related procedures which involve the activities, practices and formalities in collecting, presenting, communicating and processing data required for the movement of goods in international trade. The institutions involved in these procedures are customs and other trade border agencies including carriers.

The focus of this paper **is:**

- To bring into the minds of traders, investors, consumers and policy makers what trade facilitation is all about, and that the issue is at the top of the agenda in current round negotiations at the WTO, and that the Breton Woods Institutions and the international business community are after it;

- To advise the would be negotiators of Ethiopia that they should be careful not to commit the country beyond its financial, administrative and institutional capacities in the negotiation, and the country as landlocked LDC deserves to negotiate special differential treatment which takes into account adequate funding to overhaul the supply chain management;
- To propose a parallel effort of reducing the direct and indirect transaction costs using the resources in reach to maximize the benefits of business and the national economy by creating a National Trade Facilitation Forum that can reform the import and export licensing procedures, trade related bank procedures, transport formalities; payments, insurance, standards, sanitary and phyto-sanitary requirements, customs formalities and procedures, different road blocks, port procedures and fees, the national transport network; and implement capacity building programs in the respective institutions; and
- To propose a national electronic trade-net solution.

To that end, the paper is organized as follows. Section II briefly describes the background to the Doha development Agenda. Section III tries to show the different definitions of trade facilitation, its importance, the institutions involved in the supply chain management and the picture of trade transaction costs. Section IV deals with the problems of coordination at International level. Section V discusses the post Doha Work Program on TF. Section VI assesses the Implications for Ethiopia. Section VII presents the authors proposal on what should be done to address the issue of TF followed by conclusions and recommendations in Section VIII.

2.   Background to the Doha development agenda

The Uruguay Round started in 1985 and led to the **Marrakech** Agreement in 1994, the achievement of which is the creation of the World Trade Organization (WTO). The making of WTO as a rule based organization to discipline members that breach trade rules has added a new dimension to the world trading system.

Another important aspect of the **Marrakech** Agreement was that it included new economic relations in the rules based agreements, among others, investment support measures, intellectual property and agricultural production. In the Marrakesh Agreement not all issues could be completed and members agreed to continue the

negotiations by particular time. Therefore, Agriculture and trade- in- services were referred as built-in-agenda. What this meant was that the built-in-agenda had to proceed irrespective of what else happened. [2]

The new issues had been identified during the Singapore Ministerial meeting of 1996. The new issues were: Investment, competition, trade facilitation, government procurement and labor standards. This set of issues came to be known as the Singapore issues. These issues were added in a broader context subject for possible negotiation in the future and the modalities to be decided at the Ministerial Conference of the WTO in Cancun/Mexico in September 2003.[3]

The addition of the new issues was bitterly opposed by some developing countries while on the other end there was the need to commence the negotiations with slight difference in the agenda and the timing of the launching of the negotiations.[4]

Finally, the 1996 Singapore Ministerial Declaration established working groups to analyze issues related to investment, competition policy and transparency in government procurement. It also directed the Council for Trade in Goods to "undertake exploratory and analytical work …on the simplification of trade procedures in order to assess the scope for WTO rules in this area."[5]

In November 2001, representatives of 144 countries, which make up the WTO met in Doha/Qatar and discussed an agenda for future trade talks with development at its core. The result of which was the launch of the "Doha Development Agenda" (DDA). According to many, this agenda represents a considerable progress, and which showed that developing countries negotiated strongly and effectively for an agenda, which would make trade rules work better for them[6].

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[2] See Alexander Alec Erwin, The Doha Development Agenda, www.anc.og.za,2002
[3] see www.wto.org, The Fifth Ministerial Conference, 2003.
[4] According to Alec Erwin; India and Pakistan formed a like-minded group from Africa and Asia bitterly opposed the inclusion of the Singapore issues. Their opposition however was not of a substance but one of strategy. On the other hand the EU wanted to start negotiations on all the new issues; while Japan supported the new Round but was defensive on Agriculture and strong on the need to deal with anti-dumping and subsidies. The Cairns group consisting of Canada, Australia, New Zealand, Brazil, Argentina, Chile, Indonesia, Philippines, Malaysia, Thailand, and South Africa did not see the issues as urgent priorities but accepted that they would have to be addressed sooner rather than later.
[5] See www.wto.org, Singapore WTO Ministerial, 1996.
[6] DFID, Trade matters briefing, March 2003

As to the International Trade Center[7], the Doha Ministerial declaration has put the needs and interests of developing countries at the heart of the negotiations and future negotiations are expected to facilitate trade-offs. The focus of subsequent negotiations will be on:

- **Agriculture**: substantially improve market access; reduce all forms of export subsidies, with a view to phasing them out; and substantially reduce trade-distorting domestic support;
- **Services**: further liberalize all categories of services and modes of supply;
- **Industrial goods**: further reduce tariffs, including tariff peaks, high tariffs, and tariff escalation, as well as non-tariff barriers, particularly on products of export interest to developing countries;
- **Antidumping measures and subsidies**: clarify and improve disciplines, whole preserving the basic concepts, principles, and effectiveness of these agreements and their instruments and objectives;
- **Regional trading agreements**: clarify and improve disciplines and procedures under existing WTO rules applying to regional trading agreements;
- **TRIPS**: establish a multilateral system of notification and registration of geographical indications for wines and spirits. Protection of geographical indications of other products addressed under review of implementation of TRIPS agreement;
- **Dispute settlement mechanism**: improve the implementation of rulings and participation of developing countries;
- **The environment**: negotiations limited to the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements and to the reduction or elimination of tariff and non-tariff barriers to environmental goods and services; and
- **Singapore issues**: Possible negotiations on investment, competition policy, transparency in government procurement, and trade facilitation, subject to a decision on the negotiation modalities at the fifth Ministerial Conference, in 2003.

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[7] See ITC (2004), The Multilateral Trading System-the Doha Development Agenda at www.intracen.org

The Doha declaration is therefore a very broad agenda with "development" at the heart of it. Its success is largely conditioned on the extent to which the development dimension of future negotiations remains at the core of trade issues. In this paper, attempt is made to explore one of the Singapore issues, i.e. trade facilitation.

In relation to trade facilitation, the WTO Ministers went a step further in Doha and agreed that negotiations on trade facilitation will take place after the fifth session of the Ministerial Conference in Cancun/Mexico in September 2003. Subsequently, the Doha Declaration of the WTO in 2001 came out with the following:

> *"Recognizing the case for further expediting the movement, release and clearance of goods, including goods in transit, and the need for enhanced technical assistance and capacity building in this area, we agree that negotiations will take place after the fifth session of the Ministerial Conference on the basis of the decision to be taken, by explicit consensus, at the Session on modalities of negotiations. In the period until the Fifth Session, the Council for Trade in Goods shall review and as appropriate, clarify and improve relevant aspects of Articles V, VIII and X of the GATT 1994 and identify the trade facilitation needs and priorities of Members, in particular developing and least-developed countries. We commit ourselves to ensuring adequate technical assistance and support for capacity building in this area."* [8]

Nonetheless, at the fifth Ministerial Conference in Cancun, disagreement continued on the merits and scope for possible talks on trade facilitation. Some developed countries, including the U.S. and European Union, believed there is merit in negotiations to tighten WTO disciplines. They submitted their proposals on how to improve and clarify trade rules might include improved transparency such as the creation of enquiry points, more systematic consultation between customs administrations and traders, and the establishment of harmonized appeal procedures in disputes over import fees. There have also been discussions of simplified, standardized, and streamlined import/export procedures, new commitments on harmonized fees and charges on imports, reduction of data requirements at customs, expanding pre-arrival processing and post-auditing procedures. These are all

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[8] WTO (2001) The Doha Ministerial Declaration, WT/MIN(01)/DEC/1, page 6

associated with GATT articles VIII (fees and formalities), Article X (publication of regulations), and Article V (freedom of transit).[9]

Supporters of negotiations also suggest a parallel program of technical assistance to developing countries alongside new obligations undertaken. Some countries have expressed strong reservations about launching new negotiations. They question the value of new legal commitments in the WTO. Concerns expressed center on the idea that additional rules will exceed implementation capacities and increase the likelihood of dispute settlement action for failure to follow new WTO obligations. Some developing countries also suggest that problems in implementing current obligations must be addressed before expanding the scope of the WTO rules in other areas. Finally, as improving infrastructure, administrative reform, and related technical training to upgrade skills to facilitate trade is costly and as many developing countries and LDCs will require assistance to cover capacity building costs over the long-term; the issue of trade facilitation contributed as one of the factors for the failure of Cancun Ministerial.

In the aftermath of the Cancun collapse, successive informal meetings succeeded to the emergence of the willingness to discuss trade facilitation- but it was by dropping other Singapore issues -at about the beginning of December 2003.[10]

The July Package (WT/L/579) of 2004 represented the first concrete agreement on the status of the Singapore Issues in the Doha Round since talks broke down at the Cancun Ministerial. WTO members agreed on the basis of `explicit consensus` in the General Council to formally launch negotiations on trade facilitation, while dropping the more contentious issues of investment, competition policy and transparency in government procurement from the Doha Work Program.

3.   Trade facilitation: What is it all about?

3.1   Definition

It is very difficult to get a single and commonly accepted definition to trade facilitation. According to John Raven, "trade facilitation is the simplification and standardization of

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[9] See WTO(2002), Legal Texts, pp429-436
[10] ITC, Doha Round Briefing Series "Vol3 No 6 of 13, December 2004

procedures and associated information flows required to move goods internationally from seller to buyer and to pass payment in the other direction" (OECD, 2002:p6). Similarly, UN/ECE defines it "as the systematic rationalization of procedures and documentation for international trade" where trade procedures are the "activities, practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade".[11]

For Messerlin and Zarrouk (2000), it includes the issues of technical regulations, conformity assessment and certification. APEC also considers technical regulations, conformity assessment and certification, as well as the mobility of business people (the immigration aspect) as parts of the trade facilitation agenda (APEC 1997). Dee, Geisler and Watts (1996) included technical regulations, conformity assessment and certification, competition policy, government procurement and transparency, in addition to customs procedures.

As to the OECD, trade facilitation covers all the steps that can be taken to smooth and facilitate the flow of international trade. The term has been used widely to cover all sorts of non-tariff barriers, including product testing and impediments to labor mobility. It relates to a wide range of activities at the border such as import and export procedures (e.g. procedures relating to customs, licensing and quarantine), transport formalities; payments, insurance and other financial requirements[12]. Furthermore, some feel that the provision of physical infrastructure, educational activities and export promotion, and supply chain security may be considered as trade facilitation.

According to UNCTAD, trade facilitation has been considered simply as administrative tool with an impact limited to border crossing trade operations. From the post-Doha discussion, however, trade facilitation appears as a development issue, which can foster better public capacity to monitor and supervise foreign trade as well as to support existing and potential national exporting communities. Hence, trade facilitation measures could adequately respond to a comprehensive and coherent approach to trade facilitation at national level by supporting trade and

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[11] The WTO web page defines trade facilitation as "the simplification and harmonization of international trade procedures" while the definition for trade procedures are the same as the UN/ECE. Such procedures to collect, present, communicate and process information enter into all international trade transactions, typically including international transportation, trade insurance and cross border payment; as well as official procedures and formalities reflecting regulatory requirements in the hands of customs and such other official agencies as those concerned with public health, the environment, dangerous goods security and quarantine.
[12] OECD, Policy Brief, August 2003,p 3

transport clusters through trade-related information management systems linking the private and public sectors.[13]

For EU Trade Facilitation is a key policy for customs only, since they believe that customs helps to define the policy space, draw up the framework and rules of implementation and plays a major role in putting in place the tools and processes at the operational level.[14]

As to John S. Wilson, trade facilitation is increasingly part of trade policy debate in both "behind and at the border" issues.[15] Hence, in order to contribute to the debate, as to me, trade facilitation involves the timely and cost effective provision of international trade information, trade licensing, bank formalities, customs formalities and procedures, standards and quality certification, SPS certification, transport, port and transit services in a transparent and predictable manner. Trade facilitation, therefore, involves monetary, fiscal, trade, health, transport and communication policies. Therefore, it should not be limited to either customs or trade policies.

3.2   Why is it important?

The number of procedures that have to be passed through before and at the border when importing or exporting, have been increasing, adding to the cost of trading both for governments and business.

According to OECD studies[16], the reasons to bring trade facilitation at the forefront are: increased trade volumes, trade velocity, and complexity of trade. Successive rounds of trade liberalization under the GATT and successive negotiations with the Breton Woods institutions, and regional trading arrangements brought about progressive reduction of tariffs and quotas in international trade and resulted in increased trade volumes making it more difficult for administrations to cope and provide efficient service on the basis archaic procedures, technology and unchanged resources.

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[13] www.unctad.org
[14] http://europa.eu.int/comm/taxation_customs
[15] World Bank, WBI, Development Outreach, July 2003
[16] OECD, Policy Brief, August 2003, pp2-4

Modern supply chain management techniques and rapid spread of information technologies and the practice of e-commerce have progressively increased the use of "just-in-time (JIT)" techniques by manufacturing industry and encouraged the growth of integrated global supply, production and distribution systems. Manufacturers of this type could go to countries where the business climate is conducive to such kind of production and distribution. Such businesses cannot afford to have imported or exported goods tied up for long periods because of unnecessary or over-complicated trade procedures and requirements. Trucks, Buses, Computer and TV assemblies in our country could be examples of JIT.

There is the question of costs inherent in the increased complexity of trade. Whereas in the past international corporations might have used just one location for production, today they are encouraged by globalization and international competition to use a variety of locations for the manufacture of and sourcing of components and for the manufacture of final products. At the same time, procedures and information flows put in place for traditional port-to-port and surface transport operations were unable to cope with the advent of rapid through-movement of containerized goods and jet airfreight. Preferential trade agreements have added to this complexity through proliferation of complex rules of origin.

In these circumstances, the heterogeneous nature of trade is mirrored in the multitude of various systems and procedures, different regulations, a huge volume of documentation and the bureaucratic process. The main concerns, therefore, can be summarized under five headings:[17]

- Excessive data and documentation requirements;
- Lack of transparency and pre-ruling systems as well as unclear and unspecified import and export requirements;
- Inadequate procedures and lack of audit-based controls and risk assessment techniques;
- High degree of unpredictability and lack of automation and insignificant use of information technology; and

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[17] see WTO Trade facilitation Symposium Report by the Secretariat, March 1998

- Lack of modernization of, and co-operation among, Customs and other governmental agencies, which thwarts efforts to deal effectively with increased trade flows.

These problems contribute to inefficiency before and at border procedures that exact significant costs, both from the authorities that administer them and from the businesses that have to use them.

Hence, trade facilitation is important as an integrated approach of reducing the complexity and the cost of trade transaction. The transaction costs involving international trade are discussed in a separate section below.

3.3 Trade facilitation, transaction costs and international competitiveness

As mentioned above trade facilitation is not neither a customs policy nor a trade policy alone. It covers a variety of interconnected policies. Hence, it covers all stakeholders and the processes encompassing all concerned providers of the services in international trade. All these entail trade transaction costs to be incurred by business. These trade transaction costs are different from country to country, depending on the characteristics of goods traded and the size and type of businesses.

For businesses, border-related costs are both direct, such as compliance costs (related to supplying information and documents to the relevant authority) charges of trade-related services (cross border banking, international transportation, trade insurance, cargo handling, measurement, port-management); and indirect, such as those arising from procedural delays (due to exogenous and endogenous factors[18]), lost business opportunities and lack of predictability in the regulations.

According to a study by UNCTAD (1994b), on trade efficiency, in relation to compliance costs, an average trade transaction goes through 27 to 30 parties, including brokers, vendors, banks, carriers, sureties and freight forwarders. It needs at least 40 documents, not only for government authorities, but also for related

businesses. Over 200 data elements are typically requested, of which 60 to 70 % are re-keyed at least once while 15% are re-typed up to 30 times. Risk of error is multiplied when the number of participants in trade transactions is large and their requirements are complicated. Different studies and surveys aimed at calculating these costs suggest that these costs may reach between 1.5% and 10% of the value of the goods traded.[19]

US NCITD (1971) has examined the documentation costs for international trade in consumer products and estimated the costs equivalent to 7.5% of the total value of US exports and imports, approximately US$6,500,000,000.[20] Subsequent researchers estimated that the total costs were between 10 and 15% of the total value of the goods traded (Raven, 1996). SWERPO, in 1985 collected data from Swedish Authorities and several companies and estimated the costs of documentation and procedures of Sweden as 4% of the total value of the goods in both imports and exports, constituting a procedural cost of SEK14, 000,000,000, approximately SEK 24,000,000,000 in 2001 prices. According to the several anecdotal statements that were made at the 1998 WTO Symposium on Trade Facilitation, India's compliance cost for export procedure have been estimated at 10% of the value of traded goods. The International Chamber of Shipping (ICS) has estimated that about 10% of the total cost of moving goods relates to the preparation and transfer of information on the goods.

In relation to charges for trade-related services, Guasch and Spiller (1999) argued that monopoly port service providers and inefficient regulation of port operations gives rise to implicit tariffs of 5% to 25% on exports in Latin America. Indian port handling services result in high costs in moving a container from India is about 50% higher than for neighboring countries (WTO, 1998).

The World Bank (1995) indicated that in some African countries final prices of imported products are from 30 to 80% higher than the f.o.b. value of goods. With respect to exports from these countries to Europe, the c.i.f. price at the European border is 70% higher than its f.o.b. value for timber and 180% for higher for coffee,

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[18] Delays may be attributed to exogenous factors such as under-staffing, lack of automation, low productivity of officials, poor road or railway infrastructure or endogenous factors like deliberate stoppage of consignment and low incentives in officials.
[19] see OECD (2002), Business Benefits of Trade Facilitation, p21
[20] According to SWERPO`s calculation this is approximately US$265,600,000,000 in 2001 prices

significantly diminishing the competitiveness of these countries. Similarly, Limao and Venables (2000), using an econometric technique, have argued that median landlocked countries pay transport costs around 50% higher than median coastal economies.

In relation to indirect costs such as costs generated through procedural delays, the International Road Transport Union (IRU) has estimated that 1 to 7% of total road transport charges in Western Europe and 8 to 29% of road transport costs in Central and East European countries are attributable to time lost as a result of customs formalities (WTO, 1998). Ernst & Whinney (1987a) estimated that business forgone in the European internal market due to customs formalities was around 1 to 3%. In conjunction with costs linked to lack of predictability, out of 1024 individuals in Thailand, 74.4% responded that they paid bribes in order to facilitate customs clearance.

According to a study conducted by Asian Pacific Economic Co-operation (APEC, 2000), the impact of trade facilitation in APEC, such as streamlining of customs procedures, exceeds that of trade liberalization, i.e. tariff reduction. As to this study, trade facilitation was estimated to create a gain of about 0.25% of real GDP to APEC or roughly US$46,000,000,000 in 1997 prices.

Therefore, the economic benefits of trade facilitation for businesses are equivalent to the trade transaction costs that could be avoided through trade facilitation measures. Though it requires a rigorous examination of trade transaction costs of Ethiopian foreign trade, we can make a rough estimation based on the general estimates of studies found to date which range from 2 to 15%.[21]

Table 1: Ethiopia: Saving from trade facilitation (in millions of US$)

Particulars	2001/02	2002/03	2003/04
Total Imports, c.i.f	1695.7	1856.4	2587.4
Total Exports, f.o.b	452.4	482.7	600.7
Total Imports and Exports	2148.1	2338.1	3187.1
Savings at low scénario (2%)	42.962	46.762	63.742
Savings at middle scénario (8.5%)	182.59	198.74	270.9
Savings at high scénario (15%)	322.22	350.72	478.07

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[21] See OECD(2002), Business Benefits of Trade Facilitation

Source: The National Bank of Ethiopia, Annual Report (2003/2004 EC) and own calculation
Taking the 2003/04 data and the high scenario calculation, roughly Ethiopia has lost US$478.07million as a result of supply chain management problems. But if we consider the 1995 study of the World Bank, this figure would even be by far higher than this. Therefore, this presupposes that by implementing integrated trade facilitation measure the country would save a lot.

Inefficiency costs to government include unsatisfactory revenue collection and smuggling problems, as well as difficulties in implementing trade policy, for instance because of failure in determining the origin of products, problems in customs valuation and classification of goods, or in collecting accurate statistics. Inefficient border procedures at Galafi, Dewele, Moyale, Metema are also likely to lead to poor export competitiveness and make the country less attractive to investment.

In light of the above elements that make up trade transaction costs, there is a whole rage of possible trade facilitation measures in trade licensing, banks, standard and quality certification, sanitary and phyto-sanitary certification, road blocks and transport infrastructures, transport costs, simplification of customs formalities for exports and imports, transit procedures, and port management.

Harmonization of data requirements and document formats, issuance of advance rulings, remote filing and single window procedures, pre-arrival processing, differed payment and post-clearance audits, use of EDI or other automation systems, risk assessment techniques and use of simplified procedures in case of good performance records are part of the measures that can be taken.

Like other measures of trade liberalization, trade facilitation measures are equivalent to a reduction in implicit import duties. UNCTAD (1994b) has estimated that these measures would reduce the trade transaction costs by one-quarter. Dee, Geisler and Watts (1996) ran an econometric model that predicted cost reductions from facilitation measures including technical barriers to trade, competition policy, government procurement and transparency, is equivalent to between 5 and 10 % of total trade.

Taking action to improve the efficiency of border procedures has been shown to produce results. Countries that have carried out reforms in this area have achieved a

substantial increase in Customs revenue, despite the reduction in duties brought by trade facilitation.

According to OECD (2002), besides the benefits coming from better market access, trade facilitation may benefit the national economy in the efficient collection of import duties and circulation of goods. Hence, the benefits of an integrated trade facilitation measure by involving customs and other border agencies and trade actors would be significant.

3.4   Cross border agencies and the issues involved in TF

Trade facilitation involves the whole supply chain management. It involves all stakeholders and their procedures in international trade. According to the international supply chain management model[22], it starts from the identification of potential trading partners up to final settlement of payment and clearance and release of goods. The parties involved are customer, supplier, manufacturers, intermediaries and authorities. In this process transparency in the regulations and procedures, consistency, predictability and non-discrimination in their application are required.

According to OECD Policy Brief, (2003, pp3-6):

"*Transparency of relevant domestic regulations, procedures and practices is widely recognized as an essential element for ensuring that regulatory objectives are achieved efficiently while at the same time enhancing the benefits expected from trade and investment liberalization. Transparency underpins the ability of market participants and stakeholders to fully understand the conditions and constraints for entering and operating in a market; to gain an accurate picture of the costs and returns of their involvement; to have the time and flexibility needed to meet requirements and adjust to potential changes; and to be equipped to deal with any discriminatory or arbitrary treatment.*

Consistency and predictability in the application of rules and procedures is also important. Uncertainty in trade operations translates very quickly into unwarranted

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[22] BPAWG, UN/CEFACT (January 2001) indicate that the process involves Customers (buyer, consignee, invoice, orderer, payer); Supplier(consignor, invoicer, payee, seller, manufacturer);
Intermediary (bank, carrier, credit agency, customs agent, freight forwarder, insurer); Authority (trade ministry, chamber of commerce, cosulate, customs, health, licensing, standards and quality).

transaction costs in the form of warehousing and demurrage expenses, transport and insurance fees and financing charges, as traders need to ward off potential disruptions in their production and logistics chain. Such problems can quickly become a strong disincentive for smaller businesses, which lack the necessary logistic support to deal with such constraints. But non-discriminatory and uniform administration of applicable requirements allows traders to know what to expect in their everyday dealings with customs and other border agencies and to make informed decisions about their activities in a market. This requires clear and precise procedural guidance that is based on standard policies and operating procedures and is applied consistently whatever the authority or trader involved. Consistent application of the rules guarantees efficiency and integrity in the administration, shielding it from attempts to obtain illegal advantages.

Non-discrimination is about ensuring the impartial and uniform application of all border-related regulations, procedures and practices. It goes beyond equal treatment between trading partner countries, to focus on the treatment of individual traders. Impartiality and uniformity does not mean all products have to be treated in an identical manner, but it does call for effective equality of administration where the same circumstances apply.

Simplifying border procedures helps achieve customs and other public policy objectives in the most cost-efficient way, both for the administration and for affected traders. It is an essential path to increasing efficiency for customs and other border administrations seeking to deploy limited resources to enhance productivity, face increasing budgetary constraints and improve revenue collection through more flexible, risk-based and targeted operations. At the same time, simplifying procedures lifts restrictions and burdens that unnecessarily add to traders` cost of doing business as well as generating undue delays at the border.

Measures to simplify border procedures and to avoid unnecessary burdens include doing away with unnecessary or outdated requirements, such as requesting information that is already available to the authorities, or requesting the same information more than once for different departments-customs, food inspection agencies, health and safety authorities, etc. It also involves updating regulations to take account of changed contexts, technologies and markets; and ensuring that the implementation process is in proportion to desired result. This means, for example,

not introducing measures to improve revenue collection, which cost more to implement than is actually gained in revenue. On the other hand, if customs authorities can partly or totally process shipments before arrival of the goods, based on the transmission of the requested information in advance, or replace border controls by post-clearance audits, it simplifies the whole process. It reduces bottlenecks, which in turn reduces delays and related expenses for traders such as the risk of spoilage of perishable goods and theft, and reduces opportunities for corruption by minimizing direct transactions between officials and traders or their agents.

Due process of law involves the availability of appropriate mechanisms for reviewing and correcting administrative actions related to customs and border matters-is an important complement to regulatory transparency in ensuring the efficient operation of border procedures. Such mechanisms are often available in general legal frameworks that set out formal avenues for appealing against administrative rulings, actions and interpretation of applicable regulations as well as the general procedures to be followed. The essential quality of such mechanisms should be judged by their accessibility, their impartiality and their efficiency in offering redress in accordance with the legislation of the country."

To make trade facilitation happen as is described above, the specific circumstances of our country have to be taken into account, problem areas have to be identified, needs and capacities of all implementing private and public institutions have to be strengthened, border procedures and requirements have to be simplified and standardized, inland and border agencies have to be coordinated to implement an integrated import and export inspection and clearance through a single window by introducing state- of –the- art –technology specifically designed for the purposes of trade facilitation.

4.   Problems of co-ordination at the international level

According to the mandate of the negotiating group on trade facilitation, enhancing technical assistance and support for capacity building in this area is one of the aims of the negotiation. And the second is to help members assess their individual needs

and priorities on trade facilitation and make best use of the technical assistance and capacity building activities available.

The institutions involved in trade facilitation are the World Trade Organization, the World Customs Organization, the United Nations Conference for Trade and development, the Integrated Frame Work, Joint Integrated Technical Assistance Program (JITAP), Global Facilitation Partnership for Transport and Trade (GFP), Inter-Agency Meetings on Trade Facilitation (all UN agencies including related agencies like WCO, IMF, World Bank, and ISO), The international Trade Procedures Working Group. All these institutions are established for technical assistance and capacity building. They all have overlapping activities hence inefficient use of resources. The World Bank conducts Trade and Transport Facilitation Audits, UNCTAD also works on trade and transport facilitation. The World Bank works on Customs Reform and Modernization as the World Customs Organization.

Such kind of overlapping in my opinion are costs and as well create confusions between beneficiary developing and least developed countries. On top of that, meetings, sessions, and workshops rather than objective trade facilitation infrastructure in place on the ground consume most of the budget earmarked.

It has been observed that two or three international organizations working in a customs reform program do not coordinate their assignments. Rather they confuse the beneficiary countries. Most projects like these fail due to lack of coordination and confusion. Hence, coordinating customs, transport, SPS Authorities, Banks, and Trade Ministries etc…could be even more difficult.

In order to do away confusions, and bring about efficient and effective utilization of resources and to objectively contribute to technical assistance and capacity building aimed at LDCs and developing countries through collaborative efforts, all these overlapping institutions have to deploy their capacity building staff under a single International Supply Chain Management Capacity Building Institution with departments of specialization under it- for trade licensing, banking procedure, standards and quality, SPS, customs and transit, transport, passengers, port management, and appropriate technology. Such an action would enable to identify needs and priorities, implement multi-sectoral approach of trade facilitation, utilize

international resources effectively and efficiently and beneficiaries maximize the benefits of capacity building in full blow.

5.   The post Doha work program on trade facilitation

The post Doha program has started after the July package in 2004. Annex D of this package is the basis of the on going negotiation. This Annex states that negotiations "shall aim to clarify and improve relevant aspects of Articles V, VIII and X of the GATT 1994 with a view to further expediting the movement, release and clearance of goods, including goods in transit." Article V deals with freedom of transit for goods from another member, and states that all charges imposed on goods in transit must be `reasonable`. Article VIII states that fees and formalities connected with importation and exportation must be about equal to the cost of the services rendered, so that they do not constitute a form of indirect protection, and calls for reducing the number and diversity of such fees. GATT Article X requires all trade regulations to be clearly published and fairly administered, and due processes prevail.

The modalities for the negotiations contain a series of unprecedented caveats for special and differential treatment (S&D) for developing and LDCs, such as tying the extent of their obligations under the final agreement to their capacity to implement them. Technical assistance and capacity building provisions are also more binding than they are elsewhere: if developing and LDCs do not receive the additional support and assistance they need to develop infrastructure necessary to implement their commitments, they simply will not have to.

 The modalities of Negotiation agreed in July 2004[23], as a result of the July package were:

"*1. Negotiations shall aim to clarify and improve relevant aspects of Articles V, VIII and X of the GATT 1994 with a view to further expediting the movement, release and clearance of goods, including goods in transit.1 Negotiations shall also aim at enhancing technical assistance and support for capacity building in this area. The negotiations shall further aim at provisions for effective cooperation between customs*

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[23] Annex D of the July 2004 Package (WT/L/59)

or any other appropriate authorities on trade facilitation and customs compliance issues.

2. The results of the negotiations shall take fully into account the principle of special and differential treatment for developing and least-developed countries. Members recognize that this principle should extend beyond the granting of traditional transition periods for implementing commitments. In particular, the extent and the timing of entering into commitments shall be related to the implementation capacities of developing and least-developed Members. It is further agreed that those Members would not be obliged to undertake investments in infrastructure projects beyond their means.

3. Least-developed country Members will only be required to undertake Commitments to the extent consistent with their individual development, financial and trade needs or their administrative and institutional capabilities.

4. As an integral part of the negotiations, Members shall seek to identify their trade facilitation needs and priorities, particularly those of developing and least-developed countries, and shall also address the concerns of developing and least-developed countries related to cost implications of proposed measures.

5. It is recognized that the provision of technical assistance and support for capacity building is vital for developing and least-developed countries to enable them to fully participate in and benefit from the negotiations. Members, in particular developed countries, therefore commit themselves to adequately ensure such support and assistance during the negotiations.

6. Support and assistance should also be provided to help developing and least developed countries implement the commitments resulting from the negotiations, in accordance with their nature and scope. In this context, it is recognized that negotiations could lead to certain commitments whose implementation would require support for infrastructure development on the part of some Members. In these limited cases, developed-country Members will make every effort to ensure support and assistance directly related to the nature and scope of the commitments in order to allow implementation. It is understood; however, that in cases where required support and assistance for such infrastructure is not forthcoming, and where a developing or

least developed Member continues to lack the necessary capacity, implementation will not be required. While every effort will be made to ensure the necessary support and assistance, it is understood that the commitments by developed countries to provide such support are not open-ended.

7. Members agree to review the effectiveness of the support and assistance provided and its ability to support the implementation of the results of the negotiations.

8. In order to make technical assistance and capacity building more effective and operational and to ensure better coherence, Members shall invite relevant international organizations, including the IMF, OECD, UNCTAD, WCO and the World Bank to undertake a collaborative effort in this regard.

9. Due accounts shall be taken of the relevant work of the WCO and other relevant international organizations in this area.

10. Paragraphs 45-51 of the Doha Ministerial Declaration shall apply to these negotiations. At its first meeting after the July session of the General Council, the Trade Negotiations Committee shall establish a Negotiating Group on Trade Facilitation and appoint its Chair. The first meeting of the Negotiating Group shall agree on a work plan and schedule of meetings."

As can be understood by reading paragraph 6 and 8 together, infrastructure obligations could fall beyond the mandate of the WTO technical assistance and falls into the realm of overseas development assistance agencies, international organizations, and institutions such as the World Bank. Recognizing the diverse nature of work related to trade facilitation, as well as the need to ensure coherent, effective and operational technical assistance, paragraph 8 above asks members to invite collaborative efforts from the IMF, the OECD, the WTO, UNCTAD and the World Bank.

Some of the international organizations mentioned above have already presented their work and findings on trade facilitation to members. One of these is the World Customs organization (WCO). The WCO has supported the WTO work on trade facilitation. As a result, it has been actively contributing to the WTO trade facilitation work on symposia, regional seminars, and its presentations to the work of the Council

of Trade in Goods. In line with objective one of Annex D of the July Package, the WCO has been contributing in clarifying Articles V, VIII and X of GATT 1994 in the context of customs only. Accordingly, the WCO has confirmed that all the provisions and principles in the WCO instruments (the Kyoto Convention) are compatible with the WTO Articles.[24]

According to Dr. Cornelius T. Mwalwanda (2005), African Countries have well understood the importance of trade facilitation, the gains that can be reaped from a more efficient flow of goods and services as well as improved international competitiveness when "transaction costs" fall as a result of improved trade facilitation processes. Nevertheless, according to him, despite efforts at national, regional and sub-regional level, to integrate Africa's economic space and improve its transaction costs, most of the initiatives have delivered limited results. As a result, transaction cost have remained high, as evidenced by high transport and communication costs; high charges and delays at numerous roadblocks; long customs an administrative delays and ports and border posts; and inefficient international payments systems.

He also added that poor program implementations, lack of co-ordination among and between countries, lack of coordination among relevant agencies within countries, inadequate skilled manpower and lack of a multi-sectoral approach to trade facilitation, have also contributed to the less than satisfactory outcomes on trade facilitation initiatives in Africa.

According to him; with high road density, poor road and railway network, transport services in many African countries remain inefficient, as manifested by high vehicles prices, poor market information, presence of transport cartels, poor knowledge of operating costs, poor cooperating practices, poor maintenance and unnecessary fast driving. In many African countries, transport cost are six times higher than in Pakistan and the consequence has been that transaction costs in Africa remain extremely high relative to other regions.

Dr. Cornelius has stressed that the July 2004 package has brought an opportunity to LDCs to drop the rest of the Singapore issues, except trade facilitation to be negotiated. The Negotiation on trade facilitation focuses only on articles V, VIII, and X of the GATT 1994 only, and identify the trade facilitation needs and priorities of

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[24] See information note : WCO Instruments and GATT Articles V,VIII and X

developing countries, and more specifically particular to those LDCs and any multilateral framework to be developed on trade facilitation to be consistent with their developmental goal and aspirations. In addition to these, African countries are of the view that special and differential treatment provisions to be built into the agreement should go beyond purely providing for longer transaction periods for implementation of any new possible commitments or obligations, but rather to take a holistic approach which takes into consideration their development goals. Also African countries are of the view that any Agreement on TF should provide LDCs with the basis for not undertaking commitments that are not compatible with their development, financial or trade needs or their administrative and institutional capabilities.

Dr. Cornelius also emphasizes that the challenges that face many African countries is the need to develop requisite capacities needed to implement modern techniques of doing trade. Developing the necessary infrastructure and human skills is not costless and yet progress in these two areas is fundamental for African countries to have the capacity to effectively participate in any trade facilitation programs that may emerge. It is important that the issue of trade facilitation be positioned with in a broader framework needed to reduce transactions costs for both domestic and international trade of African Economies and within a broader framework of engineering economic growth and social change. A narrow view of trade facilitation runs the risk of focusing more on rationalization of trade procedures and less dealing on fundamental constraints, which inhibit African countries from effectively participating in international trade.

In relation to the ongoing negotiations, he emphasizes that, African countries face the challenge of actually "being able" and having the "capacity" to contribute to the actual negotiations. In this respect, they face numerous difficulties. Firstly, is the ability to be able to follow and participate in the negotiations? Second, the ability to analyze and synthesize proposals and submissions made by other members and evaluate the implications of those proposals on African countries. Thirdly, is the capacity and ability to be able to develop negotiating proposals, which take into account concerns of these countries and their developmental aspects? Finally, is the capacity and ability to be able to assess the cost implications of taking on board new commitments and obligations associated with a possible multilateral framework on trade facilitation.

6.   Implications for Ethiopia: Opportunities and challenges

Ethiopia is a landlocked LDC with an observer status at the WTO and registered for future accession. Its economy is still largely dependent on agriculture but showing relative real GDP growth. According to the NBE, during 1998/99-2003/04 period, real GDP was continuously growing except a decline in 2002/03. In 2003/04, real GDP growth was 11.6% attributed to strong performance in agriculture (64.6%), services (28.4%) and industry (7.1%).

During the same period, approved domestic and foreign investments were increasing. When the 12 years total investment data is looked at, a total of 10,594 projects with a total investment capital of Birr111.01 billion were approved. Out of this total, the share of domestic, foreign and public investments were 62.3%, 23.5% and 14.2% respectively. The 2003/04 approved investment of Birr 21.2 billion was the highest during the period and constitutes 19.1% of the 12 years approval.

Considering the 2001/02-2003/04 investment capital; 40.1%, 19.5%, 41.4% are approved for industry, agriculture and the services sectors respectively. However, this is concentrated around Addis Ababa, Oromia, and SNNPR, giving them the shares of 49.9%, 32.8%, 5.2% respectively; and the balance of 12.1% distributed to the rest of the seven regions and Dire Dawa City Administration. The imbalance in the regional distribution of investment is significant.

Out of the 8369 approved projects during the 1992/93-2002/03 period, 2445 projects (29.2%) with an investment capital of Birr 21.2 (23.5%) only were operational. This is a less than 25% performance that signals the existence of problems around investment facilitation, which is part of trade facilitation.

The volume of foreign trade was consistently rising during the 2001/02-2003/04 period. As can be seen in Table 1 above the total value of imports and exports has risen from the level of US$2.1billion in 2001/02 to US$3.2 billion in 2003/04. Since 1997/98, the volume of exports, especially for coffee and chat was in the increase, despite the fall in foreign exchange earnings due to many market factors including the cost of international trade transaction costs, which have affected competitiveness.

The composition of imports by end use for 2001/02-2003/04 shows that, imports of raw materials, semi finished goods and consumer goods have been increasing. In 2003/04, consumer goods (US$895.8 Million), capital goods (US$876.7 Million), semi-finished goods (US$435.3 Million) and fuel (US$310.6 Million) have greatly inflated the imported bill, hence widened the trade deficit.

Therefore, the development effort of the country might still further increase the value and volume of its foreign trade and the volume of investment. Trade and investment require facilitation in order to reduce transaction costs and become competitive in the international market. As calculated in Table 1 above, the savings from trade facilitation is substantial especially for small and medium enterprises (SMEs) if an integrated and holistic approach of trade facilitation program is implemented.

Therefore, the opportunities of the post Doha program for Ethiopia are:

- That the negotiation of the African and LDCs group at the WTO would serve as a signal what the country's negotiation strategies should be and the relations to be forged with the group;

- That the country would not be encountered with the rest of the Singapore issues as these have been dropped;

- The July package's recommendation for the identification of needs and priorities might help to plan the type of inventory the country should conduct and get assistance to conduct its needs and priorities according to Article 4 of the modalities of the negotiation;

- The country is able to understand the special and differential treatment provisions could go beyond the traditional long periods and address the financial, administrative and institutional capacities of customs and cross border agencies by WTO members and donor agencies; and

- That the country would not be obliged to commit itself commitments inconsistent with its developmental, financial, and trade needs; and

- The negotiation would address the concerns of land locked countries on border delays and higher transit costs.

The challenges are:

- Shortage of trained and skilled negotiators to launch negotiation at the WTO;

- The ability to continuously follow and participate in the negotiations due to financial constraints to pay for accommodation, DSA, stationery and communication cots for negotiators;

- Lack of capacity to analyze and synthesize proposals and submissions made by the other WTO members and frequently evaluate the implications on the country and respond to them,

- Lack of capacity to develop negotiating proposals, which take into account concerns of the country and its developmental aspects, and

- Shortage of professionals with the ability to assess the cost implications of taking new commitments and obligations associated with a possible multilateral framework on trade facilitation;

- Shortage pf adequate financing and skill to identify the needs and priorities of the whole supply chain management, and design a reform program to simplify, harmonize and standardize procedures and to put in place the necessary infrastructure; and

- The negative consequences of postponing the benefits and gains of trade facilitation (transparency and predictability, customer value, time, security, business opportunity and money) for regional trading arrangements and integration into the world economy due to delay in the implementation of trade facilitation measures.

These are paradoxical challenges that have to be well treated by all actors in the private sector and the public sector. However, until what the negotiation would deliver could be seen in the future depending on the strength of the country's and the LDCs group negotiators, regardless of the resource constraints it has, the country must from now launch an integrated trade facilitation project. Narrow view of trade facilitation runs the risk of focusing more on rationalization of procedures only than solving fundamental constraints of trade.

7. Introducing an integrated trade facilitation program in Ethiopia

7.1 Understanding the issue

Nationally, all stake holders should understand the issue of trade facilitation, its positive impacts in economic gains through savings of transaction costs to business, enhancing competitiveness in international trade, increasing investment flows and government revenue.

It is not customs reform only; it is a reform and capacity building in the total supply chain management. It involves customs and other border agencies and relevant ministries. Hence, a collaborative approach of trade facilitation measure is important. In order to do so, the institutions involved in trade and trade related issues have to come together to plan the way forward.

Broadly speaking, the tasks are two fold. The first one is to form a National Trade Facilitation Forum from relevant public, private institutions, NGOs and International Donor agencies and identify problems in the supply chain management and implement remedial measures, which can reduce trade transaction costs and provide economic gains. The second one is to consolidate the negotiation position of the country in line with Annex D of the July package.

7.2 Coordinating cross border agencies and relevant institutions

There are over 22 institutions that are directly or indirectly involved in the Ethiopian trade chain management. These are: the Ministry of Trade and Industry; The National Bank of Ethiopia; Public and Private Commercial Banks; Ministry of Finance and Economic Development; Ministry of Revenue; Ethiopian Customs Authority; Investment Commission; The Immigration Authority; Federal Inland Revenue; Insurance companies; Quality and standards Authority; Ethiopian Drug Control and Administration Authority; Ministry of Transport and Communication; The Ethiopian Road Transport Authority; The Ethiopian Telecommunications, Ministry of Agriculture; Ethiopian Airlines; Ethiopian Shipping Lines; Ethio-Djibouti Railways; track transport

owners; transit, forwarding and clearing agents; warehouse operators; postal express; and the Chamber of Commerce.

The roles and responsibilities and the degree of their participation in the trade chain varies from institution to institution. Nevertheless, all are important in the supply chain management. The coming together and the collaborative efforts of these institutions would help address the pressing symptoms of malfunction and difficulties in implementing trade policy, poor export competitiveness and investment attractiveness, heavy transaction costs to business, corruption problems and unsatisfactory revenue collection and smuggling problems.

The reaction to these symptoms of malfunctions would lead to strategic solutions of addressing lack of efficiency, effectiveness, and transparency.
The Ministry of Trade and Industry is responsible for trade, industry and investment policies and their successful implementation. The Ministry issues trade and investment licenses and promotes foreign trade. Hence there are services it provides to businessmen and investors. Its services have an impact on the smooth running of business in the country.

The National Bank of Ethiopia is responsible for the monetary policy of the country and also issues regulations for international trade transactions attached to different modes of payment, i.e. letters of credit, advance payment, etc…and monitor the balance of payment and the trade balance of the country.

The Commercial Banks involve in the opening of letters of credits, issuing guarantees to the seller and settle payments on behalf of the purchaser. Ministry of Finance and Economic Development sets the duties and taxes on foreign trade, and as well manages the country's budget taking into account the revenue collected on the basis of the tariff it sets. Ministry of Revenue is responsible for the overall collection of revenue at the Federal level through Customs, Inland Revenue and National Lottery. Ethiopian Customs is at the center of foreign trade and is responsible for international compliance, simplification, harmonization and standardization of rules and procedures. The Ethiopian Quality and Standards Agency is responsible for standards setting, quality checks and conformity assessment of national and internationally traded goods. Insurance companies issue insurance certificates for international trade. The Ethiopian Drug Control Administration is also responsible for

the type and quality of pharmaceuticals imported. The Ministry of Transport and Communication is responsible for the policies and provision of land, air and sea transport, information and communication technology. Immigration Authority is responsible for the movement of business people.

The Ministry of Agriculture is responsible for Sanitary and Phyto-Sanitary issues. Transport companies are responsible for transport facilitation. Transitors, forwarders and clearing agents have a role in trade flow. The Chamber of commerce is responsible to provide trade information to its members and as well has interest in trade facilitation. These and other institutions that play part in the supply chain management should form a National Trade Facilitation Forum under the chairmanship of either the Ministry of Capacity Building or the Ministry of Trade and Industry to work on trade facilitation as a development tool.

7.3   Legislations and procedures

Trade facilitation seeks to clarify core issues involved in streamlining and simplifying international trade procedures, evaluate costs and benefits of these endeavors and identify promising approaches for achieving them at the national and international level.

The institutions above should examine their legislations and procedures, establish an information flow chart depicting the direction and content of information exchanged by the various players in the import and export chain is crucial for understanding the nature and content of information exchanged by different players in foreign trade. This would enable them identify the steps taken by various intervening parties, the direct and indirect interactions within government agencies as well as intra-agencies exchanges for establishing an efficient trading practice in the country. Such an action might help them get obsolete and redundant procedures from among the different institutions, which can easily be improved to facilitate the trade chain. Long steps and inefficient bureaucratic procedures create huge uncertainties, and increase transaction costs and become strong disincentives for trade.

Based on the schematic characterization of the inter and intra-institutional information exchange the number of unnecessary and redundant procedures have to be streamlined so as to reduce duplication efforts, multiplicity of requirements. For

instance, the Ministry of Trade and Industry requires applicants to fill forms and present other supporting documents for registration either from their Kebeles (communes) or else; and at the same time, Banks require applicants to fill forms and present registration certificates for obtaining a foreign exchange permit. Customs might ask for trade license, bank permit, insurance documents, bill of ladings etc… Had this been coordinated and integrated through an electronic means the interface between these institutions would have reduced all this duplication efforts. As mentioned in Section 3.3. above, UNCTAD `s study of 1994 on trade efficiency indicated that an average trade transaction goes through 27 to 30 parties and needs at least 40 documents, not only for government authorities, but also for related businesses. Over 200 data elements are typically requested, of which 60 to 70% are re-keyed at least once while 15% are re-typed up to 30 times.[25]The same can be concluded for Ethiopia if the procedures, their related documentations and the time taken are thoroughly studied. WCO`s model of time-release study can be applied for the time dimensions of the services of these institutions. The co-operation between these institutions to make controls more efficient, to simplify procedures and clarify and make changes on legislations is very important.

7.4   Automation and institutional capacity building

In light of the different elements that make up trade transactions costs, there is a whole of possible trade facilitation measures. These include (but not limited to) harmonization of data requirements and document formats of the different institutions involved in the trade supply chain, issuance of advance rulings, remote filing and single window procedures, pre-arrival processing, differed payments and post clearance audits, use of Electronic Data Interchange (EDI) or other automation systems, risk assessment techniques and use of simplified procedures.

The use of information communication technologies and interfaced systems are important tools of promoting trade facilitation by enhancing transparency, ensuring consistency, and also supporting simplification. A system like the Trade Net of Singapore can be created in Ethiopia.

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[25] see UNCTAD (1994b), "Fact Sheet 5"

The Trade Net of Singapore is managed by Singapore Network Services Limited (SNS), a quasi-governmental company. It has enhanced Business-to-Business (B2B) and Business to Government (B2G) electronic communication. Due to this, it has resulted in considerable productivity improvements, which made the entire trading community more competitive internationally. Turnaround time of processing typical trade documents was reduced from 2-4 days to 15 minutes. It also reduced trade documentation processing costs by 20% by using a single online form. The use of clerks or couriers to transport trade documents to various agencies and the long delays of staff waiting for documents to be cleared was eliminated, leading to savings in time and better deployment of staff and vehicles. Benefits also accrued to government agencies using the system. Singapore claims that properly applied trade facilitation is already saving it in excess of 1% of its gross GDP each year.[26]

Currently, some institutions in Ethiopia might have computerized systems. The Commercial Banks have their own systems, Customs has the ASYCUDA++, The Federal Inland Revenue has the VAT and the TIN systems, the transit and clearing agencies might have got the direct trader input service from ASYCUDA++ (which is a good start), and DHL is connected to its worldwide network. The other institutions, however, are devoid of a known system that can be interfaced with the rest of the systems. The trade licensing, opening and closing of letters of credit, securing tax identification number, customs clearance and tax payments, standards certification, SPS certification, bill of lading production and advance cargo information, transit operations from Djibouti and other ports, advance passenger information, immigration, statistics can be interconnected through a system similar to the Singapore's Trade Net which would result in trade facilitation in Ethiopia. Hence, all rounded IT based capacity building is important for the institutions involved in trade management.

7.5   The way forward and a trade net solution

Economic theory suggests that development is enhanced through income growth-which is driven through increased trade. Expansion of trade is achieved, at least in part, through programs to lower transaction costs in goods and services crossing

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[26] ESCAP, 2003

borders by "addressing behind and at the border issues".[27] And this effort has to be conceived in a modern context by looking at the chain from trade licensing to port, then from port to end use; from home origin to destination markets, from origin to home destination. Indicators can be constructed using the country's specific data generated from each participant institution.

For example, the APEC region used port efficiency, customs environment, regulatory environment, and e-business usage as major indicators in a study conducted in 2003 by the World Bank. The findings suggest that enhanced port efficiency has a large and positive effect on trade and the regulatory barriers reduce trade prospects. Improvements in customs and greater e-business use significantly improve trade. And a program to raise capacity "half-way" would yield an increase in intra-APEC trade about US$254billion, out of which about US$139billion comes from the improvements "at the border" in port efficiency and customs environment, and the US$116 gain might come from improvements "inside the border" in regulatory harmonization and e-business usage.[28]

One can estimate how much Ethiopia looses in hard currency for different port fees at the port due to port inefficiency, deliberate hoarding at port by importers and as well as negligence. The costs associated to these were not only in fees; goods have been subject to confiscation by port administration. The "inside the border costs" due to time taken to get licenses, to get bank permits, to get standard and SPS certificates, time lost due to road blocks, poor physical inspection, customs valuation, the document requirements at each stage etc… have to be looked at.

Hence, the trade facilitation effort can be approached nationally and sub-regionally. The efforts nationally definitely would address half of the problem. However, taking the leadership for the sub-regional approach would also benefit the country and the member states and help them to implement the Mutual Administrative Assistance model developed by the World Customs Organization.[29]

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[27] See John S. Wilson in Development Outreach, July 2003
[28] Ibid
[29] see www.wcoomd.org

The National Trade Net may look like the following. These would at least give policy makers and beneficiaries what the Author envisages about trade facilitation in Ethiopia.

This trade net can also be interfaced with Kebele (commune networks), which are the basis for the identification of people and businesses locations.

Figure 1: The Proposed Trade Net for Ethiopia
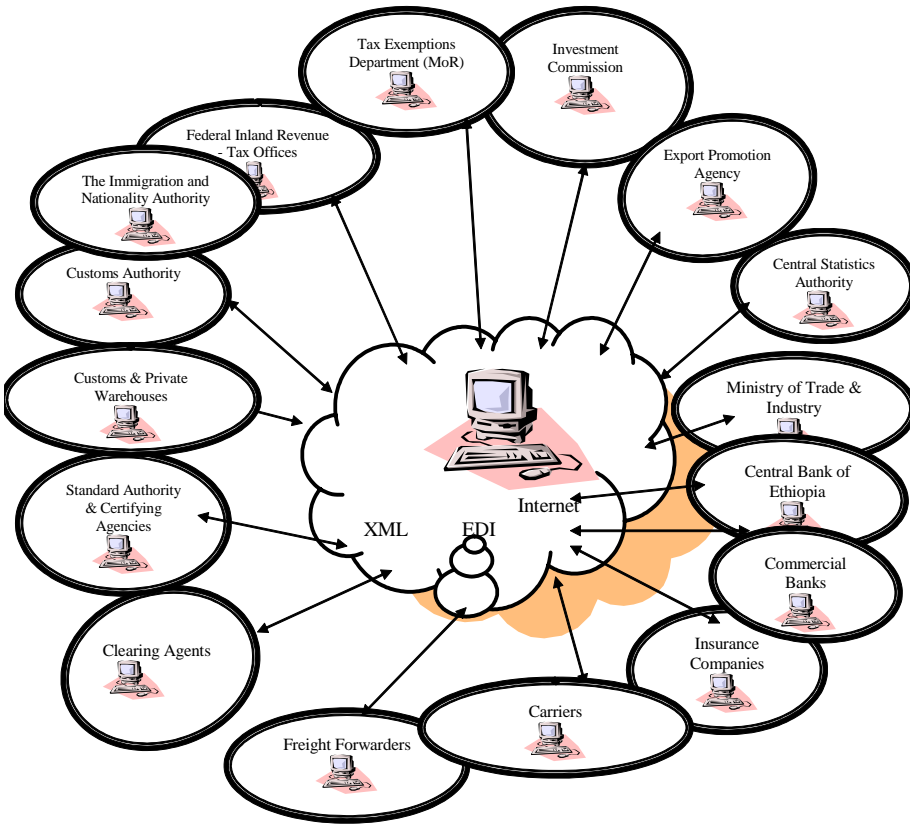
8.   Conclusions and recommendations

8.1   Conclusion

The trade supply chain managements have been transformed in the last decades due to steady increase in trade volumes, increase in trade complexity, and increase in trade velocity. As a direct consequence of these factors, national customs administrations and other border agencies have to process ever higher volumes of trade, while at the same time the demands and expectations of the international business community have risen dramatically.

According to WCO survey, some of the most important factors motivating customs reform have been the economic integration of the country into Free Trade Agreement or Customs Unions; the international trade liberalization and the increase in trade volumes; the changing role of the state and the need to improve efficiency in government agencies; the impetus of structural adjustment programs to restore fiscal equilibrium; and the implementation of new taxation regimes.[30]

The changed operating environment brought by globalization and trade liberalization not only exacerbates but also highlights a number of structural problems in the operation of customs and other border agencies. A series of quite pressing symptoms of malfunction like: difficulties in implementing trade policy, poor export competitiveness and investment attractiveness, heavy transaction costs for business, unsatisfactory revenue collection and smuggling problems, and corruption problems have brought forth the need for customs and border agencies reform and capacity building.

 Even if there have been failure stories, there have been many success stories with remarkable achievement in trade facilitation from which Ethiopia can benchmark for improved revenue collection, reduced clearance times, and reduced transaction costs from Latin America, Central and Eastern Europe, Asia, and Africa.

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[30] WCO, Survey of customs reform and modernization trends and best practices

Ethiopia being a land locked country could face enormous difficulties to import and export. Cumbersome procedures and port fees could affect the transaction cost of its international trade. Hence, Ethiopia's negotiation should well consider not only its capacity building but also the capacity and as well commitments of port service provider countries.

As the negotiation is delayed, Ethiopia could lose a lot due to monopoly port service providers. Hence, the bilateral dimension should not be overlooked as the multilateral dimension is progressing. Parallel with the bilateral and multilateral efforts, Ethiopia should launch a national program of trade facilitation in its broader scope as discussed above.

Among the factors, that can contribute to the current efforts of the Ministry of Foreign Affairs in the promotion of trade and tourism, and investor recruitment would be trade facilitation. On top of the policy environment, what traders and investors usually inquire are the details of Ethiopia's trade regime, especially the harmonization and simplification of cross border agencies, which have an impact on transaction, costs of businesses. Hence, collaborative trade facilitation should appear in the list of the country's capacity building agenda.

8.2   Recommendations

Doha and the post-Doha work program represent a new challenge for Ethiopia. The country must be ready to respond with competence and increased activism in negotiations. The business community can play a critical advisory role for the government in this regard. By forging strategic partnerships with businesses, the government can take advantage of the negotiation process to negotiate better terms and conditions for further efforts on its part to undertake further liberalization. Hence, the private-public partnership in Ethiopia has to be further strengthened with the motive of creating synergy for economic, social and political development in the country and integration into the world economy by confronting together national, regional and international issues consistent with the country's needs and capabilities.

The issues of WTO negotiation, membership to regional FTA and Customs Union, negotiations for Economic Partnership Agreements have to be well discussed jointly for a common position at international fora. The current public-private forums have to

be well managed and utilized so as to deliver to the development needs of the country and its integration into the regional and world economy;

The issue of trade facilitation is in the process of negotiation at the WTO. Ethiopia has now the opportunity to assess the content and trend of the negotiation and formulate its negotiation position. The country can also forge strong relations with the African group and international capacity building institutions to train its negotiators to be able to understand the rules in depth, to analyze and synthesize, to frequently evaluate the implications on the country, and to develop negotiating proposals;

For All Government Institutions with the word Authority in their naming, to play a positive role in the overall process of trade liberalization, trade facilitation and investment attraction, the mentality and attitude of their managers and staff as institutions-traditionally organized on the idea of authority- has to be changed to a service oriented approach inline with the trend towards economic liberalization, trade facilitation and investment attraction. For example, the psychological change starts from the change in the names of the service providing government institutions. Changing the names of Ethiopian Customs Authority to Ethiopian Customs Service, the Federal Inland Revenue Authority to Federal Inland Revenue etc… is important The American Inland Revenue Service, Customs Service etc...are examples to be benchmarked.

As can be learnt from the trade data of the National Bank of Ethiopia, both imports and exports are on the increase in value and volume terms. Imports constitute capital goods for development by government, investors, and businesses, as well as consumers` goods. Exports constitute products the country can supply in the international market. The direct and indirect transaction costs of trade have to be reduced by means of trade facilitation, the benefits and gains of which shall be transparency and predictability, customer value, time, security, business opportunity and money. Hence, all stakeholders in the supply chain management of Ethiopia should form a National Trade Facilitation Forum to address the issues of trade facilitation at national bilateral, trilateral, and sub-regional (IGAD) and regional level (COMESA).

The National Forum has to be chaired either by the Ministry of Capacity Building or the Ministry of Trade and Industry with members from the institutions listed above. The structure can have two levels: Policy and Technical levels.

The policy level shall deal with the major objectives, strategies of trade facilitation; identification of activities and planning, assigning responsibilities and setting timetables to each institution in taking the inventory of trade facilitation issues and studying problems, and proposing reform and capacity building measures;

The study of trade facilitation in Ethiopia can come up with either broad terms of reference for Consultants or a Financing Proposal for Negotiation and as well for donor funded trade facilitation project implementation;
The study has to show the "at the border costs" and the "inside border costs" and the potential savings as a result of full blown trade facilitation measures;

The Singaporean Success of the Trade Net could be an excellent lesson to be benchmarked and the above schematic representation of the Ethiopian Trade Net proposal can also be considered in the trade facilitation reform Ethiopia would like to implement.

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MIGRATION, URBAN-RURAL LINKAGES AND POVERTY[1] IN ETHIOPIA:
A QUALITATIVE STUDY IN ADDIS ABABA AND SHASHEMENE

Feleke Tadele [2]

Abstract

The paper argues that rural-urban migration is one of the livelihood strategies pursued by both rural and urban households to reduce the impact of poverty and improve quality of life and well-being in Ethiopia. It acknowledges that there is no sufficient knowledge and appreciation about the development dimension of migration and the importance of urban-rural linkages on the side of policy makers, academics and the civil society sectors. The paper seeks to generate knowledge through presenting the relationship between migration, rural-urban linkage, poverty and well-being based on the firsthand household data collected in Addis Ababa, Kolfe area, and Kebele 08/09 of Shashemene town. It highlights the policy implications of such dynamic linkages among urban and rural areas and the flow of labour, capital, goods, information, knowledge and other resources in the continuum of urban-rural relationships.

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1.   Background

This paper attempts to investigate the different types of migration as experienced by both men and women, poor and rich as well as young and old in Shashemene and Addis Ababa. It also assesses the policy environments that are relevant to the encouragement or inhibition of migration between rural and urban areas in Ethiopia.

The paper used a primary qualitative data collected under the WeD Ethiopia Research Programme[3] from each of the two urban research sites; namely, Kolfe, Addis Ababa and Kebele 08/09, Shashemene. Specific qualitative research instruments were developed at individual, households and community levels. The qualitative method involved focus group discussions and key informant interviews.

1.1.   Review of migration history in Ethiopia

Migration processes have been crucial to the formation of Ethiopia. However, this section is confined to the recent migration history of Ethiopia focusing on four political periods: 1) from the late 19th century (the Menelik period) until the Italian Occupation (1889-1941), 2) the post-liberation Emperor Haile Sellassie period (1941-1974), 3) the Socialist, Derg period (1974-1991), and 4) the current, EPRDF period (1991 - to date).

1.1.1 Early migration (from the Menelik period until the Italian occupation: (1887-1941)

Ethiopia witnessed an increasing scale of peasant migration since the late 19th and early 20th centuries along with the conquest of the south and consolidation of the nation building process by Menelik II from 1889-1913 (Galperin, 1988; Bjeren, 1985, James and Donham 1986). Menelik's expansion during this period was achieved through a series of military expeditions, which, in turn, led to the formation of various garrison towns in the south and the establishment of a class of soldier-settlers who became landlords and appropriated tribute and labour from tenants (McCann, 1988; Bjeren, 1985, Akalu, 1994). This period thus witnessed the migration of soldiers and

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[3] This is an international research project on Well-being in Developing Countries covering Bangladesh, Ethiopia, Peru and Thailand. It is funded by ECRC and the central WeD is located at Bath University, UK.

peasants from the north attracted by the potential of gaining access to land in the south, southwest and east of the country. While Gojjam, Gondar, parts of Wollo and Tigray provinces were the main bases of peasant migrations the principal destinations were Wellega, South Shewa, Northern Sidamo, Arsi, Northern Bale and Gamu Gofa provinces and some areas of the Sudanese frontier (Galperin, 1988; McCann, 1988). Among the "push" factors that contributed to the migration of these rural people were shortage of land, low agricultural productivity, high population densities and recurrent drought. The "pull" factors were the opportunities of gaining control of more fertile land, tribute and labour in the frontiers of the empire. The exploitation of the peasantry of the north by feudal lords and the Ethiopian Orthodox Church as well as the dispossession of lands were mentioned by Galperin as major causes for the emigration of the rural peasants from the north to other urban and rural areas in the south and west (Galperin, 1988).

The involvement of Ethiopia in the global economy and its linkages with the rest of the world through religion, trade, postal and telegraphic system during the last decade of the nineteenth century and the beginning of the 20th century enhanced the exchange of information and ideas within and outside of the country. This process was consolidated by the foundation of Addis Ababa as the permanent capital of the country towards the end of the 1880s. The settlement of the nobility and regional leaders in encampments in the capital attracted followers from their respective regions. The need to establish a city, in turn, attracted the influx of labourers for construction of roads and buildings and encouraged merchants to service the increasing population. The settlement in urban areas created demands on the city administration to fulfil political, administrative, and military functions. The improvement of physical infrastructure and development of communications, notably the construction of the Djibouti-Addis Ababa railway contributed to the emergence of several towns along the way (15 railway stations rapidly changed into important towns). The mushrooming of towns, along with the establishment of financial and public services such as banks, hospitals and schools also increased urban-rural linkages and the movement of people from one area to another (Akalu, 1973; Bahru, 1991).

The Italian occupation between 1935 and 1941 and the development of infrastructure, roads and buildings had a considerable effect on the towns of Ethiopia and, hence, on population migration. Most of the towns became areas under effective Italian

control and the occupying forces exerted considerable efforts to improve their structures. Bejern (1985) indicated that the most important contribution made by the Italians to modern Ethiopian urbanization was the establishment of urban markets with monetary remuneration for services. They confiscated the town land from the landlords and abolished patron-client relationships. As noted by Fekadu (1972), the Italian occupation, therefore, brought the style of urban life based on division of labor, specialization and cash economy.

Bjeren (1985) further noted that the Italian occupation brought a tremendous increase in road construction and boosted both the numbers and functions of towns. Although most of the towns remained garrison towns, they brought groups of soldiers, who were in dire need of houses, food and entertainment. This, in turn, broadened the economic base for the urban areas and encouraged the migration of non-agricultural 'specialists' from rural areas such as artisans, traders, bar and restaurant owners, shop-keepers and construction workers.

1.1.2 The post-liberation, Emperor Haile Sellassie period (1941-1974)

Although the post-Italian period began with a sharp decline in urban activity, the Imperial regime of Haile Sellassie was known for the consolidation and centralization of government structures, the establishment of the Imperial Highway Authority and road building operation, the setting up of industrial enterprises and commercial centres, the 'modernization' of municipal services and the expansion of urban handicrafts, which had direct impacts on the growth of urban areas in Ethiopia. Thus, a number of small commercial towns with their main trade and transport functions emerged during this period. Industrial zones were also designated across the railroad towns of Akaki-Beseka, Debre Zeit, Mojo, Nazareth and Dire Dawa. All these undertakings were reported to have influenced rural-urban migration.

Some studies indicate that considerable rural-rural migration was observed in the 1950s and 60s due to the development of commercial agriculture. In this respect, a Dutch firm set up a sugar cane plantation and processing factory in the upper Awash Valley in 1954. The Haile Sellassie Government was reported to have evicted hundreds of pastoralists for the purpose of this plant and other subsequent large-scale commercial farms (Markakis, 1974). The introduction of improved agricultural

techniques through the establishment of agricultural development units in places like Arsi and Wolayta contributed to the development of urban services and flocking of people to these centres. Towns in the South such as Shashemene became centres for the acquisition and maintenance of machinery, supply of fertilizers and veterinary services as well as for the service of vehicles and recruitment of trained personnel. The urban centers also served as safe corridors for evicted rural households to migrate to other provinces or work in the towns as daily laborers. Among the rapidly growing urban areas mainly within the Rift Valley due to the combined effect of the simultaneous development of the transport system, trade and the introduction of mechanized farming, were Assela, Nazareth, Mojo, Meki, Shashemene, Awassa, Dilla, Yirgalem, Negelle, Yabello and Moyale.

The emergence of commercial agricultural sites in the Setit-Humera lowlands in North-western Ethiopia and the plains of Jijiga also attracted both laborers and peasant farmers. The construction of irrigation schemes in the Awash Valley beginning mid 1970s attracted temporary and permanent farm laborers as well (Kloos, 1982, cited in Abate, 1989: 602). Areas of considerable land pressure, such as Kambata and Hadiya in Southern Shewa, were considered to be the main suppliers for such rural-to-rural migration (Beyene, 1985).

In the Southwest the development of coffee production (notably in Kefa and Illubabor provinces) attracted seasonal and permanent labor and the development of urban areas like Agaro, Jimma, Seka, Metu and Gore. (Assefa, 1994; Alula, 1989; Bondestam, 1973; Mc Dowell, 1999). There was considerable circular movement of labour to these areas. During the early 1970s, Wood (cited in Abate, 1989: 601) estimated that over 50,000 seasonal migrants have migrated to the coffee regions. The majority of these laborers were reported to have migrated from areas of environmental degradation and natural disasters especially Amhara (Gojam, Gondar and Wollo) and Tigray. The movement also included itinerant traders and sex workers.

In general, the development of the above and other Ethiopian towns exhibited the migration of various categories of people who came to resettle as trade migrants, civil servants, soldiers, construction workers and domestic workers. Migrant women attached to most of the drinking and eating establishments in urban areas also worked as commercial sex workers (Lakech, 1978).

The Imperial Government of Ethiopia, like its successors, had attempted to organise the implementation of planned relocation of the population around the mid 1960s with the aim of reducing poverty, increasing access to land and protecting citizens from famine. However, until 1974 the implementation of the population redistribution was limited due to the private land tenure system and high operational costs (Eshetu and Teshome, 1983).

1.1.3 The socialist, *Derg* period (1974-91)

This regime was known for introducing drastic political and economic reforms including the confiscation of rural and urban private lands, the closure of private mechanized agriculture, de-prioritization of urban development, 'encadrement' of peasants through rural cooperatives, villagization and resettlement (Tesfagiorgis, 1994, Clapham 2003). Reforms also involved the introduction of official registration requirements for both urban and rural inhabitants, eligibility for obtaining allocated rural land being limited to permanent residents of Peasant Associations, and the introduction of a pass system and checkpoints along the main highways.

All these policy measures and procedures had bearings on the dynamics of migration during the socialist regime (Baker 1995). The land reform and subsequent measures limited access to rural to registered and permanent members of Peasant Associations. If someone was absent for more than a year, the land could be confiscated and be given to other members. The land of resettled persons was also redistributed. Hence, most peasants had to stick to living in the countryside instead of moving to urban areas. On the other hand, the requirement of official pass letter to go to the cities, the official registration requirement by Kebele (Urban Dwellers Associations) and civil war and Red Terror further discouraged rural migrants and their potential urban hosts (*ibid*., 1995; Berhanu & White 1999).

The socialist government attempted to control migration and implemented planned 'resettlement'. In the first decade (1974 –84), about 142,000 people were resettled. (Pankhurst, 1988). Some researchers estimated that the number of resettled people during the period from 1974 through 1984 was as much as 187,000 individuals (Africa Watch, 1991). Following the famine of 1984, the government resettled a further 700,000 people[4] from the northern provinces of Wello, Shewa and Tigray to the southwest provinces of Gojjam, Wellega, Illubabor and Kafa over a period of about two years (Dawit, 1989; Dessalegn, 1989). Nonetheless, the implementation of such planned resettlement schemes involved negative consequences (numerous deaths and suffering of resettled people and the host populations) and some researchers argued that planned resettlement involved smaller numbers compared to spontaneous rural-rural migration (Wood, 1985).

1.1.4 The EPRDF period (1991 - to date)

Important surveys such as the 1999 National Labor Force Survey, the 2000 Migration, Gender and Health Survey and the national population census (1994) offer a better picture about the dynamics of migration in the last decade in Ethiopia. The migration status of the population based on the 1999 National Labor Force Survey of Ethiopia indicated that migration in Ethiopia was dominated by rural-urban patterns for both long-term and seasonal migrants. This was followed closely by rural-rural migration streams and then by the urban-urban migration streams. The pattern of urban-rural migration during this period was insignificant.

UNDP (2003) reported that about 17 percent of the total population of Ethiopia live in urban areas and this is expected to reach 29 percent by the year 2020 (UNDP; 2003). Although the total urban population size is currently smaller than most African countries, the urban population growth rate in Ethiopia is still considered among the highest (about 3 percent). Migration, therefore, is the main factor responsible for the fast growth of the urban population.

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[4] Figures provided by the government Relief and Rehabilitation Commission were as low as 593,000 people. (Pankhurst, 1992:56)

The National Labour Force Survey (1999), indicated that 63 percent of the total migrants in the country were below the age of 30. The largest group (26 percent) of migrants fall in the age category of 15-19, followed by the age category of 20-24 (21 percent) and 25-29 years old (16 percent). This confirms that migration is heavily concentrated among younger people aged 15-30 years (Eshetu, 2005 quoting Connell, Roy *et al*, 1976).

A further survey (CSA, 2000) reveals that 70 percent of migrants are "illiterate". The illiteracy rate is 58 percent for the male migrants and 80.5 percent for the female migrants. Only 0.9 percent of the migrants are educated above grade 12.

The rural-rural permanent stream and the rural-urban temporary stream are disproportionately female, while the urban-urban permanent stream and the rural-rural temporary stream were disproportionately male (CSA, 2000). According to Bjeren (1985), the pattern of female migration from rural to urban areas in Ethiopia is somewhat different from what is observed in other parts of Africa. While male rural-urban migrants are more dominant in other African countries due to the employment opportunities available for men in urban areas, females in Ethiopia dominate the rural-urban migration. Belachew (1983), Gugler and Ludwar Ene (1995) also stated that the proportion of female migration rate to urban Ethiopia is higher than male despite limited employment opportunities. Various factors are attributed to the out-migration of women. Many Ethiopian women living in rural areas particularly in northern Ethiopia, notably in Amhara and Tigray consider out-migration from their place of origin as an immediate measure to escape from the distressful situation of marital dissolution or marriage breakdowns (Hammond, 1989). The presence of male-dominated traditional plough farming system, the lack of law enforcement of property rights of rural women, virilocal residence patterns, and the presence of forced marriage at early age push women to migrate out of their areas of rural origin (Amare; 1996, Rahmato;1985, Eshetu, 2005).

However, there are regional variations in the rate and dynamics of female migration. Eshetu (2005) indicated in his recent publication on female migration to Addis Ababa that the proportion of female migrants from Oromia accounts for only 23.9 percent, while of the SNNPR contribution was 10.7 percent, and those from Amhara region accounted for more than half (51.3 percent) of female in-migrants, while migration from Tigray region was (10.1 percent). In terms of ethnic origin, the majority of the

female migrants to Addis Ababa were Amhara (59.9 percent), followed by Oromo (18.4 percent), Tigraway (10.8 percent), Gurage (6.8 percent) and other ethic groups (4.1 percent). Possible explanations for low proportion of female migration from Oromia region can include availability of other alternative business towns in the south such as Agaro, Awassa, Dilla, Gimbi, Jimma, Metu, Nazareth, Nekemte and Ziway; the significance of the female labour contribution to hoe-cultivation and the liability that bride-wealth may be returnable in case of divorce.

The promulgation of ethnic-based federalism and the formation of organized ethnic-centered regional administrations since 1991 have arguably influenced the dynamics of inter-regional population migration specifically in the first four or five years. For instance, the Migration, Gender and Health Survey conducted jointly by the Addis Ababa University and Brown University (2000) with a focus on the five most populated regional states; namely, Oromia, Amhara, SNNPR and Tigray, indicated that permanent intra-regional migration has become more frequent than permanent inter-regional migration with the exception of temporary migrants moved to Addis Ababa. The 1999 National Labour Force Survey of Ethiopia (CSA, 2000) also showed that inter-regional migration was very limited particularly for permanent migrants. However, there are no similar studies done that show the inter and intra regional patterns of population movement before the implementation of ethnic based federalism so that it is difficult to draw clear conclusions. Factors such as lack of information about other regions and preference to stay in a region where the migrants are confident of speaking the language and sharing the culture could also contribute to the low level of inter-regional migration pattern. The survey further revealed that while 90 and 78 percent of permanent migrants moved within Tigray and Oromia Regional States, the lowest proportion was 58 percent within SNNPR, a much more heterogeneous region than the others.

1.2   Urban-rural interface in Ethiopia

There has been growing literature on rural and urban linkages in Ethiopia since the late 1960s. (Akalu 1973; Baker 1968, 1990; Fasika 1998; Feleke 1999; Markakis 1973; Mesfin 1968, 1970; Tarekegn 1995; and Tegegne and Tilahun 1996; Mesfin (1970) stated that the development of many Ethiopian towns passed through three historical stages. First, towns emerged around rural markets and the push factor was economic. Second, towns mushroomed to make rural administration effective and smooth so that politics played a significant role in their development. Third, towns

were the results of the introduction of technology that was characterized by complex and advanced economic systems. We challenge this argument since the development of urban areas and their relationships with rural areas involve multiple dimensions and cannot be explained in a simple linear–evolutionary form. In his previous work, Mesfin (1968) also revealed that all components of the urban hierarchy contribute to the diversion of resources from rural areas. Thus, he suggested that the differences between urban and rural populations are continuously getting sharper. However, he concluded that rural life is unchanging and stagnant, and he viewed urban and rural societies as dichotomous entities. Again this shows that Mesfin had overlooked the importance of diffusions and exchange of information that contribute to changes in rural life. A more recent work by Mesfin (1995) focused on market linkages in West Shewa zone and reported that there is a poor integration between rural and urban areas and lack of proper infrastructure for enhancing linkages. This study, however, is limited only to an aspect of market linkages. Fassika (1998) argues that it is very difficult to divide African countries into neat categories of rural-urban. The two milieux must not be considered as "closed spaces"; rather they must be viewed as "open spaces".

Akalu (1973) attributed the emergence of Ethiopian towns to the political situation in the 19th century by Menelik II. In his view, the emergence of Ethiopian towns was triggered by both the geographical expansion of Ethiopia under Menelik II and the construction of Ethio-Djibouti railway. He, therefore, argued that several towns in Ethiopia served as special centers for urban-rural interactions since urban areas are the seats of government officials who have control over the countryside.

Markakis (1973) argues that social stratification in Ethiopia has emanated from the urban-rural dichotomy. Hence, the social classes in Ethiopia are divided into rural and urban areas and generated socio-economic and cultural variables that have led to the social stratifications.

In his extensive works on rural-urban linkages/dichotomy, Baker (1968; 1986; 1996) studied the cases of two northern Ethiopian towns. He found that small towns in northern Ethiopia served only as markets. In assessing the growth and functions of small urban centers in Ethiopia, he noted that they provide important ranges of economic and social services, although the utilization of services was found to be problematic due to poor accessibility. He also discussed the significance of rural-

urban interactions in economic development and stated that Ethiopian farmers in the north are active with multiple tasks and they straddle rural-urban spheres to take opportunities provided by both.

Tegegne and Tilahun (1996) studied two small towns and indicated that except for trade linkages, other forms of rural-urban linkages are minimal or non-existent. The study is highly aggregate in its approach without dealing with household patterns of linkages.

Tekalegn (1995) emphasized the role of rural areas in shaping Ethiopian towns, particularly the capital Addis Ababa. He showed the relationships of Addis Ababa to the surrounding rural area from 1988-1974, clearly depicting the impact of government policy upon peasant agriculture. He further stated that urban dwellers in feudal Ethiopia have greatly influenced the terms of production in the rural areas through control over land and labor. He also dealt with the impact of the evolution of rural land tenure and taxation system on the dynamics of the urbanization process.

Feleke (1999) explored the situations under which urban development planning and land management in Addis Ababa led to displacement and impoverished the rural livelihoods in the vicinity of the capital city of Ethiopia.

As the foregoing review shows the available studies on rural-urban linkages in Ethiopia have been instrumental in providing mainly anecdotal experiences about the trends and patterns of relationships that exist between urban and rural Ethiopia. However, they are not easily comparable and, therefore, cannot not serve to make generalizations about rural-urban linkages throughout the country.

1.3 The context of the research areas

This paper has focused on two research sites in Addis Ababa, Kolfe, and Shashemene, Kebele 8/9. This section briefly highlights the context of the two research sites.

1.3.1 Kolfe area-Addis Ababa, Ethiopian capital

Kolfe is located in the western edge of the Ethiopian Capital, Addis Ababa. It is considered as one of the semi-peripheral parts of the city recognized for its informal

business activities. According to the former Administrative Structure of Addis Ababa the Kolfe area encompasses *Kebele* 9, 10 and 11 from *Woreda* 24 and *Kebele* 3, 4,5,6,7 and 8 from *Woreda* 25. Kolfe is included in the Kolfe-Keranio Sub-City Administration and is one of the ten Sub-cities recently organized by the Addis Ababa Municipality. Kebele 10/11 covers one third of the total population of the sub-city, which was estimated at 150,000 in 2003.

1.3.2 Kebele 08/09 of Shashemene town in the southern part of Ethiopia

Shashemene is located in Eastern Shewa Zone of the Oromiya National Regional State, about 250 kms south of Addis Ababa. The town is economically important and expanding quite rapidly compared to other towns. Based on the 1994 census, the total population of Shashemene was estimated to reach over 100,000 in 2004. The population is restructured into ten administrative units called *Kebele*s and they are managed under the auspicious of the Municipality of Shashemene town.

The major sources of livelihood for the town are small businesses, informal trade, civil service employment, brokerage and handcrafts such as carpentry, pottery and metal works. The major crops produced around the town are maize, potatoes*, teff,* barley, wheat, legumes, sorghums and false banana (*Enset*). Shashemene enjoys the supply of crops like coffee, sweet potatoes, vegetables, maize and animal resources from adjacent districts.

Kebele 08 and *Kebele* 09 are located at the centre of Shashemene town. They are considered as areas for early settlement and this part of the town was used to be called Harufa. The presence of ancient houses and long time residents can be cited as living examples of early settlement. Although the town expanded with newly emerged *Kebeles* and *Sefers*, both *Kebele* 08 and *Kebele* 09 have continued to serve as the nerve centre of the town having the bus station, the oldest and popular church, the grand mosque and the biggest open-air market altogether.

2. Empirical findings and emerging issues

2.1 Migration trends

2.1.1 In-migration trends: Shashemene town

The study examined the context and the reasons behind the migration of people to Kebele 08/09 of the Shashemene site. The focus group discussions held in the four neighborhood areas of the Shashemene site indicated that the urban communities have been hosting both seasonal/short-term and permanent/long-term migrants mainly from different ethnic groups to the south that include Wolayta, Kambata, Hadiya, Dawro, Gamo, Gofa, Sidama as well as from Gurage and Oromo ethnic groups. Unlike other parts of Shashemene[5], the four research *Sefers,* or neighbourhoods hosted few seasonal and permanent migrants from Amhara and Tigray regions.

Although the official Kebele 08/09 boundaries are not ethnically segregated, it is interesting to observe that the migration of people from these ethnic groups reflects the previous migration history and the ethnic composition of the inhabitants of the four neighbourhoods. Individuals from the same ethnic groups tend to settle in the neighbourhood where most people from their areas of origin had already settled. In terms of the four neighbourhoods studied the majority of the migrants to Bishate *Sefer* are from Wolayta and Hadiya ethnic groups, while most of the migrants in Kuyisa *Sefer* are from Kambata, Wolayta and some from Oromo. Similarly, the majority of the migrants in Bole *Sefer* tend to be from the Gurage ethnic group, while migrants from Wolayta and Gurage predominate in Serategna *Sefer*.

When asked why they migrate to Shashemene, the most common reasons mentioned by seasonal, male and adult migrants are shortage of land, landlessness, rural destitution, land tax and debts from agricultural inputs. Since 1991, during the post-socialist era of the EPRDF regime, subsidies for agricultural inputs such as fertilizer were gradually reduced and, hence, some peasants had begun to move in search of employment to obtain cash incomes and pay back their debts. The incidence of conflicts notably ethnic clashes such as around Faji in Kembata area,

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[5] The predominant ethnic groups in Shashemene are Amhara, Oromo, Gurage, Welayita, Kambata and Tigraway.

during the change of government in 1991 is reported to have pushed other migrants to Shashemene.

Most migrants mentioned that they decided to move to Shashemene due to its proximity and the perception of relatively better employment opportunities. They mentioned that they were attracted by the information they obtained from their informal sources about employment opportunities in construction work, loading and unloading and other informal sector employment. In particular, seasonal rural migrants often come to Bole *Sefer*, a relatively rich neighborhood within the town, during agricultural harvesting periods to work for grain traders as porters and store attendants. However, the seasonal rural-urban migration is not only limited to poor rural community members. Some better-off farmers also moved as short-term migrants from Bale Zone (Oromia Region) to engage in grain trading.

The long-term migrants, who came to the Shashemene research site began to settle in the *Sefers* since the early 70s during the Haile Selassie Regime and included mostly people from Wolayta, Kambata, Hadiya and Gofa in the SNNPR. The longer-term migrants often moved to the town because of extreme shortage of rural land in their areas of origin where densities can reach as high as 500 people per square kilometer and where population increase is rapid, as well as due to relatively better life-styles in this business town, and the perceived success of former migrants.

Many of the female, adult and permanent migrants moved from the adjacent rural districts of Kambata, Hadiya, Wolayta, Sidama, Gamo and eastern Oromia due to factors related to marriage and their move to join their spouses. There are also female young migrants who came from these districts as well as from other business towns such as Agaro, Awassa, Debrezeit, Dilla, Nazareth, Hagere Selam, Jimma, Yirgalem and Addis Ababa for short seasons. Most of these categories of female, young and seasonal migrants tend to be divorced or single, and are engaged in domestic labor work, small businesses, production of local drinks and commercial sex work. As the informants elucidate the migration of commercial sex workers to Bishate *Sefer* increased since the Socialist Derg, period due to the establishment of a military base.

2.1.2 Out-migration trends: Shashemene

Different categories of migrants from the various ethnic groups have experienced migration out of their respective *Sefer*s. Most of the female migrants who engaged in commercial sex work in Bishate *Sefer* often migrate out of the neighborhood to look for better opportunities in other urban destinations.

Most of the long-term male migrants engaged in daily labor in Kuyisa *Sefer* and the seasonal migrants who briefly stay in the neighborhood tend to go to the south-western regions such as Jimma, Agaro and Illu Aba Bor during the coffee picking season. They also travel to the Awash Valley for sowing, around Arba Minch for cotton harvesting, Shekiso for gold mining, and Woito for mango harvesting. In addition to such long-distance destinations, seasonal migrants travel to the surrounding rural areas of Shashemene to be hired in potato planting and harvesting as well as in *tef* harvesting.

Most of the long-term migrants, who are engaged in small business activities, also go out of Serategna *Sefer* to adjacent towns such as Awasa, Negele, and Kofele for short periods to carry out trading activities. For instance, the small traders buy second-hand clothes from Awasa, food grains and 'Areke' from Negele, butter and cheese from Kofele and maize, charcoal and wood from Aje to sell them in Shashemene market. In return, trade migrants buy *shiro*, pepper, and *Biqil* from Shashemene to sell them in these destinations. Some long-term male migrants who left their spouses behind often return to their homelands twice a year to cultivate their farms and harvest their produce.

Short visits and seasonal migration out of the area happen during the celebration of *Meskel* and wedding occasions. Crisis times such as the death of people from the same areas of origin, family disputes or ethnic clashes are also reasons for temporary out-migration.

2.1.3   Kolfe, Addis Ababa, urban site
2.1.3.1 In-migration trends: Kolfe

The recent qualitative interviews carried out with key focus groups in the four Kolfe urban neighbourhoods have revealed fairly strong economic reasons for the migration of male urban migrants notably from the SNNPR, Amhara, Oromia and to some extent from Tigray Region. The male focus groups respondents mentioned that non-

conducive rural environments induced their migration. The main push factors include diminishing farmland sizes in all their rural localities and fragmentation of small land holdings, lack of rain, recurrent drought, absence of an effective extension system, limited investment in irrigation-based agriculture, high population pressure on 'starvation' plots of land, lack of off-farm employment opportunities and imposition of heavy taxes. In addition to this, pull factors mentioned by the urban male migrants included increasing construction activities, demand for urban domestic workers, better pay for service work and social support from the long-term migrants.

As far as the female migrants are concerned, our exploratory survey of Kolfe area indicates that female migrants from the south, notably from Gamo area in the SNNPR, moved to Addis Ababa to join their spouses who had already migrated on a permanent basis to work in the capital. However, female migrants from the Gurage area also in the south, moved to carry out small trading and find employment in the service sector such as in small restaurants, and tea and pastry shops.

There are also female migrants from Amhara and Oromia regions who are engaged notably in domestic work as house-maids, cleaners and nannies, in the services sector (as waitresses in small bars, restaurants, and local taverns), in the small business sector (*injera* baking, road-side food sale), in the construction sector (loading/ unloading of construction materials) and in commercial sex work. Among the latter, step-wise movement to the capital is common. Many had moved to small towns and provincial capitals before heading to their final destination in Addis Ababa.

Except for the small proportion of women, who migrated to Kolfe on a long-term basis with spouses or families since the Socialist Period in 1974, most female migrants, notably those from the North, are divorced and widowed women who are in their active reproductive age. These categories of female migrants consider migration outside of their place of origin as an alternative livelihood strategy in part since until recently women were not directly entitled to have access to farmland (Askale, 2005). Even if they manage to get land, the plough agriculture in the highlands of Ethiopia requires male labour and sharecropping often involves losing a large proportion of the harvest.

In addition, divorced women are socially stigmatised, being suspected of having multiple sexual partners and are blamed for increasing prostitution. This seems true

for the female migration trend in Addis Ababa (Bethlehem 2005). According to Eshetu (2005), among the major reasons for female migration notably from North and South Wello and North Shewa of Amhara Region as well as from Tigray the following aspects are important: early marriage (9.1 percent), subsequent marriage breakdown (9.1 percent), drought and famine situation (10.1 percent) and severe female poverty (12.7 percent).

2.1.3.2 Out-migration trends: Kolfe

Long-term male Orthodox Christian migrants from Gurage in Sor Amba *Sefer*, often return to their birthplaces during the *Meskel* holiday in September. While the single male and landless migrants return in October, those long-term migrants who own land often stay until January to celebrate the holiday with their kin and work on their farms. The *Meskel* holiday provides an occasion for unmarried men to find wives, get married and bring them from their birthplace of origins. Others also bring their female relatives to seek better job opportunities in their respective *Sefer*. A few spouses or single female migrants who have moved to Sor Amba go out of their neighbourhood to their rural villages to buy goods during the agricultural harvesting season. New female and single migrants who moved along with their relatives initially tend to get involved in domestic work and gradually get married to other migrants from their place of origin.

Similarly, long-term and seasonal/short-term migrants from Mender 3, Dorze *Sefer*, travel to their place of origin mainly in the Gamo highlands of SNNPR including Chencha, Doko, Ezo, Birbera, Ze'ada, Dita, Woyza, Andiro, Elo, Dera, Jila, Atolo, Bele, Shema and Dokomasha. They often go back to their original places when there is a holiday, family problem or /and the need to follow-up farm activities. However, the frequency and level of out-migration to areas of origin seem to have been reduced over the past five years because of higher costs of transport, limited savings from urban employment and shortage of rural farmland. This became more common among married and long-term migrants who found it difficult to save enough money for their transportation and other expenses in rural areas.

In April 2005, an interesting migration experience happened when about a hundred migrants from Ezo travelled in big trucks to their home areas following the local government's move to reallocate their farmland for urban development purposes. They presented their cases collectively to the local government and requested the administration to preserve their landholdings. The government later agreed not to redistribute their land and encouraged their continuous contact and investment in their home communities.

There is also a short-term migration out of the *Sefer* by both women and men of Gamo origins to other urban areas such as Shashemene, Awassa, Wolkite and

Holeta to seek better job opportunities and look for cheaper costs of living. The migrants are mostly single and young who have been engaged in craftwork and daily labour jobs.

2.2   Type of work and livelihoods of migrants

2.2.1   Kolfe, Addis Ababa, urban site

The types of work the seasonal/short-term male migrants come to do in Kolfe mostly include unskilled daily labourers' work in the housing construction sector, loading and unloading of goods, urban vegetable-growing, weaving, blacksmithing, lottery ticket selling and, when they get unemployed, begging. On the other hand, unmarried female migrants are reported to engage in domestic work as housemaids, working in bars as commercial sex workers, undertaking petty trading and begging.

There seems to be some specialization of activities among the short-term migrants of the different ethnic groups living in the neighbourhoods studied. For instance, many of the Oromo migrants to Kolfe are engaged in loading and unloading, firewood selling and daily labour work. The Amhara migrants tend to do activities that include daily labour, working as housemaids, guarding, working in local bars, lottery ticket selling and begging. The migrants from Gamo are mostly engaged in daily labour, weaving and other craft-related work. The Gurage migrants, often the younger ones, tend to work as shoeshine boys, lottery ticket selling boys, daily labourers, porters, second-hand cloth sellers, vegetable growers, food peddlers, and petty traders.

2.2.2   Shashemene, urban site

Shashemene offers a variety of livelihood and work opportunities for long-term as well as seasonal migrants. As explained earlier, the seasonal/short-term migrants, who came to Kuyisa *Sefer* are mostly male from the rural part of Wolayta, Dawro, Gamo, Dorze, Gofa, Kambata and Hadiya and less frequently from Sidamo, East Oromia (Arsi) and Gurage. The migrants from Wolayta and Hadiya are often engaged as farm labourers in the outskirts of the town like Awash, Abaro and Kuyera. Their farm work includes the production of potatoes, sowing of *teff* and harvesting of maize. Wolayta migrants are also engaged in daily labour such as attending horse-carts, pushing water-barrels and plastering mud houses. Longer-term migrants from Kambata and Gurage often work as manual construction workers; horse-cart attendants and petty

traders, while the migrants from Gamo are predominately engaged in traditional cloth weaving.

Bishate *Sefer* mostly hosts female, single or divorced, seasonal migrants from other towns such as Awassa, Wolayta, Debrezeit, Nazareth, and Addis Ababa and most of them are engaged in commercial sex work. Other migrants to Bishate and Bole *Sefer* include male and female migrants from the rural areas of Gurage and Oromia. The permanent migrants are often engaged in selling second-hand clothes, daily labor and petty trading of vegetables, grains and small merchandise on street markets. The seasonal male migrants in Bole *Sefer* are often hired by the rich, and the long-term migrants work as porters in the grains stores. Most of the Gurage, single or divorced female migrants also engage in petty trading, sale of local food and drinks.

2.3   Characteristics of the migrants

2.3.1 Age of migrants

Our qualitative interviews revealed that a considerable number of children as young as age seven were sent from their rural origins by poor parents from Gamo and Gurage areas to their relatives or migrants in Kolfe and Shashemene to enable their children to acquire part-time education, minimize their economic burden and gain some financial support. Due to the presence of circular migrations between Gamo and the two urban sites (Kolfe and Shashemene), adult and long-term migrants also attract young boys from their respective areas of origin to join the highly exploitative and potentially abusive employment situation in the weaving work in Kolfe, Addis Ababa and *Serategena Sefer*, Shashemene. The children often receive little or no payment. They have no access to education, or freedom of movement and lack decent working conditions.

There is also evidence that the "lottery boys" coming from Gojjam are fairly young (teenage to age of 21) These young migrants, who otherwise are called Gojjam *Azene* (meaning "Gojjam became sad") are mostly young peasants who used to have no access to land or they are young peasants who were dispossessed from their plots of land by local administrators due to their political differences.

Our key informants perceive that single and young females and male migrants have mostly practised migration from Gurage over the past three years. However, new

male migrants seem to have shifted their migration stream from Addis Ababa, particularly Kolfe area, due to the relocation of the "Chereta" second-hand clothes market[6], imposition of heavy business taxes introduced by the city Revenue Authority and the banning of vending on streets. Other alternative migration destinations were reported to be Jimma, Nazareth and Zeway. On the other hand, migration from Gamo areas has been practised more by men than women. Both Addis Ababa and Shashemene were found to be attractive for the migration of unskilled, lowly trained and poor rural men from remote rural areas. The majority of the male migrants over the past three years seem to be young adults in the transitional age between adolescence and adulthood. They are either single or have married once.

According to our informants, married male migrants leave their wives and children behind in their rural areas of origin. They often lack land and economic stakes in the rural areas compared with their elders. These male migrants are involved in both rural and urban economies. The wives manage their farm holdings, in a male-dominated environment, with the support of male relatives who assist them with agricultural activities and social protection.

2.3.2   Education of migrants

The distribution of respondents by educational level computed from the national survey reveals that 70 percent of the migrants are illiterate. There is a clear gender disparity since the illiteracy rate is 58 percent for the male migrants and 80.5 percent for the female migrants. Only 0.9 percent of the migrants have had education above grade 12. This is very similar to the perception of our focus group respondents in both Addis Ababa and Shashemene where both the female and male urban migrants were found to be unskilled and with limited training.

2.3.3   Gender of migrants

The results of the WeD qualitative information gathered during the fieldwork in Shashemene suggest that there are more female migrants from the SNNPR and Oromia. There seemed to be a greater number of female migrants found from the

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[6] The market was moved by the Addis Ababa City Administration in early 2005 on the grounds that the open market space was leased out to investors for other big development projects.

adjacent rural areas of Shashemene town including Kambata, Hadiya, Wolaita, Sidama, Gamo and eastern Oromia.

In contrast in the Kolfe site, it seems that there are less female migrants from the SNNPR and Oromia as compared to the proportion of female migrants from Amhara region with the exception of women from Gurage and Gamo ethnic groups and women from the North and West Shewa areas of Oromia. The focus group informants perceive that female migrants often move from Gamo area to join their spouses who had already moved on a permanent basis to work in Addis Ababa, while the female migrants from the Gurage areas come to carry out small businesses. Except for the small proportion of women, the female migrants in both Kolfe and Shashemene are divorced and widowed women in their active reproductive age.

2.3.3.1   Male migrants

The net migration from Gurage and Gamo areas indicate more of men than women in migrating to Addis Ababa and Shashemene.

Both Addis Ababa and Shashemene were found hospitable for the migration of unskilled, low trained and poor rural male from the rural remote areas. The majority of the male migrants over the past three years are young adults in the transitional age between adolescences and adulthood. They are either single or have marriage once.

Those married male migrants leave their wives and perhaps their children behind their rural areas of origin. They often lack land and economic stakes in the rural areas more than their elders. These male migrants have dual involvement in the rural and urban economy. The wives manage their farm holding title, in a male dominated environment, with the support of male relatives who assist them with tasks of agricultural activities and social protection.

2.3.3.2   Female migrants

The origin of female migration from rural to urban areas in Ethiopia varies in accordance with their ethnic groups and place of origin. For instance, a recent female migration study done by Eshetu (2005) indicates that migration from Amhara region accounts for almost 60 percent of the female migrants to the Addis Ababa city ,

followed by Oromo (18 percent) , Tigray (11 percent) , Gurage (7 percent) and other regions including the Southern People's Nation and Nationalities Region (4 percent) . The main reasons for the higher level of female migration from Amhara region is attributed to early marriage, marriage break-down and the recurrent drought in rural areas.(Ibid).

The Southern Nations, Nationalities and People's Region seems to have less contribution to female's migration to Addis Ababa region with the exception of Gurage ethnic group. Possible explanations include availability of other alternative business towns in the south-east region (Agaro, Awassa, Dilla, Gimbi, Jimma, Metu, Nazareth, Nekemte, Shashemene), the significance of female labour contribution to hoe-cultivation and the liability that the bride owes in case of divorce.(Eshetu, 2005; Bjeren, 1985).

This is confirmed in our exploratory survey of Kolfe area where the net migration of male outnumbers the female migrants. Female migrants often move from Gamu area to join their spouses who had already moved on a permanent basis to work in Addis Ababa, while the female migrants from the Gurgae areas come to carry out small businesses.

In case of Shashemene, we found out more female migrants from the adjacent rural areas of Kembata, Hadiya, Wolaita, Sidama, Gamu and eastern Oromiya. Most of the female migrants are engaged in domestic labour work, small business, selling of local drinks and commercial sex work. Among the commercial sex workers both in the case of Shashemene and Kolfe areas, step-wise movement to the cities is more common. They moved to other small towns and provisional capitals before they head to their final destination, to Shashemene and Addis Ababa.

Except for the small proportion of women(less than 10 percent moved through associative migration), who migrated to both Shashemene and Kolfe areas are divorced and widowed women in their active reproductive age. These categories of female migrants see migration outside of their place of origin as the best alternative livelihood strategy since until recently women were not directly entitled to have access to farm land. Even if they manage to get land, the crop production in the highlands of Ethiopia requires male labour and share cropping is often misused by

male farmers. In addition, divorced women are socially disapproved as they are susceptible to have multiple sexual partners and practice prostitution.

2.4 Labour force and employment opportunities

According to the qualitative interviews in both Kolfe and Shashemene, the majority of the migrants to urban areas have generally low educational status and limited skills. They used to work on small plots of their own land and rent their labor on a temporary basis on others' farms. Likewise, the most common types of employment that are available in the two urban centres are unskilled jobs in the public construction sector, low-skilled domestic work, common services in the service sector, petty trade, craft work, and urban agriculture. Hence it is evident that, except for a limited number of jobs, most migrants can more easily find employment in non-blue collars jobs. The following box shows the list of the occupations that the temporary and permanent urban migrants often engaged in.

Table 1: Work undertaken by migrants in Kolfe and Shashemene sites by categories and types

Job Category	Job Type
Construction Sector	Loading and unloading, plastering, wood chopping, guarding
Domestic work	Nanny, cook, cleaner, washerwomen, *injera* baker
Service Sector	Small restaurants, bar waitress, waiter, bar attendant, cook, guard, dish washer, cleaner
	Transport- cart-driver, porter, lottery seller
	Store- attendant
Small business	Second-hand cloth sales, sale of local drinks and food, sale of vegetable and fruits, grain retailer, kiosk, shoe-shiner,
Craft work	Weaver, blacksmith,
Urban Agriculture	Vegetable growing, gardening, digging and plough,
Other	Begging, prostitution

2.5 The role of brokers and management of labour migration

Relative success behind getting employment among the majority of the migrants lies in the support that they received from their networks of *iddir*, families, kin, relatives and ethnic members already established in the urban areas. Most of the migrants

mentioned that their first job was obtained through the informal networks that they had.

There are a number of registered brokers in both Kolfe and Shashemene. These brokers work in a union with 5-10 members who serve as job dealers. Long-term migrants or non-migrants in most of the neighbourhood commonly know the brokers and their locations. The brokers often provide eight hours' service during workdays and they meet any job seekers when they visit them. A few of the brokers have space to provide accommodation services for those job-seekers who do not have shelter.

The brokers obtain a service fee from both the employee and the employer upon the conclusion of an agreement. The charge ranges from 5 to 20 *birr* for a job from each party depending upon the wage. The minimum daily labourers' job wage in Kolfe is 6 *birr* per day, while in Shashemene it is 5 *birr* per day. The lowest average monthly salary is 75 *birr* for the jobs like guard and cleaner and the wage reaches to an average of *birr* 250 per month for a cook. The wages are often determined informally through mutual negotiation and agreement between the employee and the employer. The variations of the wages depend upon the paying capacity of the employers in the neighbourhoods. Hence, there can be big variations of wages from one neighbourhood to another depending upon the status and income of the employers.

Urban migrants who have strong links with long-term inhabitants and those who can produce guarantors, - often a long term resident who can be traced in case of theft, damage to the employers' property or serious dispute with the employee - have better employment opportunities to find jobs than those who do not.

2.6   Types of rural- urban linkages

Based on our qualitative study, individual migrants living in urban areas maintain multiple types of networks with their rural homes to serve their social and economic interests as well as maintain their cultural identities and ethnic ties. The study indicated that while an individual migrant livelihood can spatially within urban context, the person's networks can remain rooted within his rural village context in the areas of origin facilitated by the strong ties and networks with family and villages through various forms such as trade, marriage and cash remittances. This can be manifested in the following ways.

2.6.1   Transfers of information and cash/ material resources

Long-term and short-term migrants are instrumental in providing information about jobs, education and business opportunities to their children, young unmarried women and men. They often attract them to join them and work with them for sometime.

In both Kolfe and Shashemene sites, most of the male migrants from the south (Gamo, Gurage, Dorze, Kambata, Hadiya, Wolayta) revealed that they often transfer information and sometimes resources (in terms of gifts) once a year during *Meskel* or *Arefa* holidays. They often send cash, clothes, shoes, household utensils, farm implements, kerosene, shoes, soap, salt, and other consumer goods to their close relatives in rural areas in order to assist them and help them cope with financial difficulties and crises. However, according to many of the female married respondents they sometime face financial constraints to fullfill these expectations since they do not have control over the family income. Thus it seems easier for male migrants and unmarried female migrants to meet such holiday obligations.
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The transfer of material resources is sometimes reciprocal. For instance, Wolayta migrants from Shashemene take clothes, salt, sugar, spices and onions when they go back to their home areas. The migrants return with butter, cheese, potato, *bula* (a paste made from false banana) and maize. Similarly, Kambata migrants take millet, pepper, oil, and barley when they visit their families and relatives in Kambata. In return, they bring banana, baskets, *bula*, butter, and bamboo mats from their rural homes.

2.6.2   Marriage

Marriage is one of the mechanisms that link urban and rural areas. This is especially true in the case of long-term inhabitants who came to Kolfe and Shashemene on a permanent basis in search of a better life in town. Most of the migrants from Kambata, Hadiya, Gamo and Gurage prefer to marry within their ethnic groups. Hence, long-term male migrants from these groups bring their spouses from their home areas. There are times where a long-term migrant, notably from Gurage (both Muslim and Orthodox Christians), can have two wives and maintain two households, one in the rural and the other in urban areas. According to some respondents a

migrant from Gurage culture usually marries a wife at home to keep his land and look after his property (land, house, cattle).

2.6.3   Iddirs and self-help groups

Most of the long-term migrants have strong social networks through which they get together. Ethnic-based *Iddirs,* burial associations, are very strong and bring migrants together at times of need and mutual assistance. For instance, in Serategna *Sefer* in Shashemene, the long-term residents of the *Sefer* have formed 'Sodo Iddir' and 'Sebat-bet Iddir' for migrants from the specific Gurage areas and help each other in both good and bad times. The cash contributions they make differ from one group to another. Similarly, long-term female and male migrants from Wolayta and Kambata living in Bishate *Sefer*, Shashemene, have also formed self-help associations to organize joint trips to celebrate *Mesqel* with their relatives in rural areas. If a relative living in rural areas faces difficulties a migrant living in Shashemene or Kolfe is supposed to make a visit or send cash to solve the problem back at home. In case such family support is beyond the capacity of a migrant, the association members might contribute cash and assist the migrant to help his/her kin in the rural areas.

The Gamo and Gurage migrants in Kolfe also have similar sub-ethnic -based self-help associations and *Iddirs* and they help each other during crises and happy times like weddings. The *Iddirs* contributions can range from 5-10 *birr* per month. If a migrant dies, friends and associates from the same place of origin take the body of the deceased for burial services to their respective homelands. We also learnt that some migrants from Gamo and Gurage areas continue to maintain their membership and make contributions to their rural –home *Iddirs* even if they have left their home areas for a long period of time. They make arrangements with the leadership of rural *Iddirs* or delegate their family members to contribute cash and non-cash contributions on their behalf. Similarly, the long-term migrants from Kambata and Wolayta, have formed ethnic-based associations. For instance, the Kambata association, which is called "Kambatas' family association", was established to support Kambatas in times of crisis such as death and also other social happenings such as weddings. Wolayta migrants have also formed an association called 'Wolayta Giorgis'. This association assists its members in times of any crisis such as death, and settling dispute with other ethnic groups in the area.

2.6.4   Trade networks

The major relation between Bishate *Sefer* and the rural areas from which the seasonal migrants come is trade. For instance from Wolayta traders predominantly bring sweet potatoes, *boye* (yam), and maize, while the Kambata traders bring bananas, baskets, and other food items. But the traders from both areas come for only a day or two and then return home. Similarly in Bole *Sefer*, the linkage between the long-term inhabitants and the place from which the seasonal migrants come is through trade. Trade migrants bring bamboo mats, cultural artifacts, cheese and other dairy products from Kambata area, while they take clothes, kerosene, soap, and salt from Shashemene. In addition to this, long-term migrants from Kambata and Sodo Gurage living in Serategna *Sefer* attract their relatives to come along with them primarily to assist or work for them in trading businesses.

2.6.5   The role of small town development

During the 1980s, some experts of development studies viewed urban areas and towns as centres of exploitation (Southall, 1988; Tacoli, 1998). However, the positive perception about the contribution of small town development on rural areas was developed since the 1990s. The goal of small town development shall be seen in terms of rural-urban linkages and the stimulation of employment opportunities in small towns (Kay Sharp and et al, 2003).

Small scale urban growth within rural development has a considerable potential in the development process in Ethiopia since it can contribute to improved livelihood for rural people in various ways. These 'growth points' can be centres of employment, education, marketing, small-scale industries, social services and communication (Ibid.)

Table 2 indicates that 64 percent of the urban poor households view Woreda towns, sub-woreda towns and other rural villages as important places to maximize the opportunities for their livelihoods. This is followed by Addis Ababa (21 percent), regional state capital (8 percent) and zonal town (5 percent).

Table 2: Important urban centres for rural households

	Frequency	Percent
Addis Ababa, the Capital city	142	21.3
Regional State Capital	51	7.7
Zonal Town/ centre	35	5.3
Woreda town	192	28.8
Sub-Woreda /rural township	63	9.5
Rural area/ Peasant Association Centre	170	25.5
Neighbouring Foreign Country	5	.8
Other African country	4	.6
USA	1	.2
Middle East Arabic country	1	.2
Other	2	.3
Total	666	100.0

(Source, WeD Ethiopia Research Project, Urban RANQ, 2005)

Table 3: Reasons for the importance of small-towns

Reasons for importance	Frequency	Percent
Market for buying/selling goods	582	39.4
Social Support	288	23.5
Employment	85	6.9
Health Service	88	7.2
Schools	46	3.8
Source of information/ tech	58	4.7
Entertainment	49	4.0
Administrative/political matters	5	4
Other	115	9.4
No response	7	6
Total	1223	100.0

Source, WeD Ethiopia Research Project, Urban RANQ, 2005.

As indicated above, 39 percent of the urban poor households seem to have stronger connection with Woreda towns and rural market centres. They often sell and buy goods from these rural towns. They feel that the growth of these small urban units will provide not only market function but they also provide social support (23. 5 percent),

health facilities (7.2 percent), employment opportunity (6.9 percent), information / technology (4 percent) and entertainment (4 percent).

Based on the above responses, it is possible to draw a line that the growth of small towns is viewed as more important development strategy than the expansion of big urban centres like the capital city and regional capitals. The development of such small growth centres at district and sub-district levels would provide multi-purpose function for the rural people and a path for the maximization of marketing opportunities even for the urban poor who reside in the capital city or other secondary cities in the country.

In this respect, the Ethiopian Government Policy on Rural Development and Agriculture provides a direction to promote urban centres in the rural areas through a 'growth centre' approach, where rural Kebeles are selected and developed to have basic social services and non-farm employment creation opportunities. However, lack of appropriate implementation structure, limited rural investment, shortage of business skills and off-farm activities have so far hampered the implementation of the 'growth centre' strategy in the rural development sector (Amdissa, 2003).

2.7   Consequences of migration

Migration can have both negative and positive consequences at community, household and individual levels. Based on our qualitative studies, we present here the experiences reported by migrants in our research sites.

(a) Community level – The effect of migration at community level can be seen from both the sending and host communities' perspectives. Most of the case studies showed that the presence of long-term migrants in Kolfe and Shashemene areas has helped the flow of information, transfer of material resources and support to their respective areas of origin.

Long-term migrants from Gurage, Gamo and Kambata areas, who currently live in Kolfe and Shashemene research sites indicated that they contributed cash for local fund raising committees entrusted with the responsibility of community resources mobilization for schools and rural road constructions in their respective areas of origin. Although they are few in number, some migrants notably from Gurage areas

returned with resources to install grain mills, open kiosks and butcher shops. The purchase and supply of plough oxen and farm implements by some Gurage migrants, although directly provided to sending households, may ease the shortage of plough oxen and benefit the resources of local communities. A few Gojjamme migrants who live in Kolfe area also mentioned that they contributed cash towards church construction in Gojjam zone. But the amount of their cash contribution is not large, in relation to the cost required for the church construction work.

On the other hand, the migration of young rural, less skilled and less literate people from the different destinations to urban areas of Kolfe and Shashemene is viewed by long–term inhabitants as a reason for increased shortage of houses, poor condition of toilets and sanitation facilities, exacerbated unemployment situation, increased trends of petty crimes, prostitution and begging. Even so, most of the long-term inhabitants believe that the continuous flow of rural unskilled labor serves the domestic labour needs of Kolfe or Shashemene communities. It would have been more expensive or even difficult to afford housemaids, nannies, guards, and craftsmen if there were less migrants.

Household level – the presence of seasonal and permanent migration from rural to urban areas can be viewed as providing a safety net mechanism for poor individuals and rural households to cope with distress situations, pay annual taxes, buy small stocks and obtain medication. On the other hand, sending households have benefited from flow of material supports such as better clothes, shoes, radios and cassette players, household utensils, consumer goods and farm implements.

Individual level – Beyond serving as a safety net, the rural-urban seasonal migration among the interviewed individuals often did not bring great change to the lives of the majority of the poor migrants. Out-migration has also negative economic and social effects on those who migrated. The supply of domestic labor to urban inhabitants at extremely low wages and benefits exposes a number of urban migrants to exploitation and abuse. The following twelve individual cases are presented to serve as the illustration of the consequences of migration at individual level.

3.   Policy implications of urban-rural linkages

The qualitative study suggests that the push factors for most of the rural-urban migrants are extreme rural destitution, the presence of limited rural livelihood opportunities, heavy dependence on rain-fed agriculture, indebtedness in particular to pay for fertilizer credit, and increased population pressure on the rural land. The case-studies also suggest that social factors, especially for women, and political factors for men are important reasons for undertaking rural-urban migration. Households who maximized their livelihood opportunities through migration were able to raise cash income and cope with their seasonal problems. Some migrants were able even to buy plough oxen, pay their debts and replace their farm implements. This implies that the Government of Ethiopia should consider enhancing the implementation of its rural development policy with the aim of maximizing alternative livelihood opportunities including the creation of off-farm employment schemes, the promotion of small scale agro-industries, investment in small scale irrigation and improved agricultural extension.

Most of the migration of rural women to urban areas seems to be related to socio-cultural practices that perpetuate their inequalities such as lack of access and control over rural resources, early marriage practices, divorce and death of parents, or husbands. In order to counter these problems, it would be important for the new family law of Ethiopia to be effectively implemented to guarantee rural women's access to and control over land entitlement, protection of minimum age for marriage, promotion of affirmative girls' education and rural technologies for women.

Most of the informants emphasized that district or sub-district urban centers have a more significant contribution than the capital city or the regional capitals in terms of facilitating markets, creating employment opportunities, diffusing information and technology and using basic social services such as education and health. This would imply that the government and donors should consider investing more on the development of small urban centers than the mega cities. The Government of Ethiopia should therefore consider shifting its priority to the development of small towns that can serve as development conduits between the remote rural areas and the major urban centers.

Community development and self-help programs that generate employment opportunities for the urban poor and primarily target the youth could have significant value in minimizing the social problems resulting from large numbers of poor migrants that have become increasingly serious in the capital city and other secondary cities such as Shashemene.

Despite the economic burden that seasonal and long-term urban migrants face in urban settings, there is a continued interest, notably by young and male migrants from Gurage and Gamo areas, to maintain ties with their place of origin. It is desirable to use such networks for mobilization of development resources and implementation of projects that have benefits for the wellbeing of both rural and urban areas although the use of such networks can have risks since they sometimes can be misused to advance political interests. The construction of roads, the expansion of telecommunication infrastructure, the enhancement of the rural transportation system and the establishment of rural banks can play significant contributions in promoting fair and equitable development between rural and urban areas.

4.   Summary and conclusion

In the preceding sections, attempts were made to provide a better understanding of the dynamics of migration, labor markets and the informal sector in Ethiopia. The study explored the processes and consequences of labor migration and their implications for poverty alleviation in the country. The study used the analysis of migration data collected by the Wellbeing in Developing Countries - Ethiopia Programme targeting two urban and rural research sites; namely, Addis Ababa (the capital city of Ethiopia), Shashemene (a business town in the Southern Nations Nationalities and People Region, SNNPR).

The WeD research program examined the context and the reasons behind the recent migration of people to urban areas; particularly *Kebele* 08/09 in Shashemene and Kolfe in Addis Ababa. The qualitative study confirmed that although these urban areas tend to include heterogeneous urban migrants, the smaller units, s*efers*, or neighborhoods, often have a strong settlement pattern of people from the same ethnic origin. Various reasons including the history of settlement, availability of information, circular movement of migrants, better access to social networks and

mutual supports were mentioned among the factors that influenced the ethnic patterns of urban migration and settlement.

The most common push factors for rural –urban migration in the recent years are similar to those described in the literature, notably food vulnerability and destitution. The majority of the seasonal, male and adult urban migrants both in Shashemene and Kolfe areas mentioned that the main reasons for their migration are lack of enough food, shortage of rural farm land, existence of landlessness, imposition of heavy land tax and the inability of farmers to pay for agricultural debts. The main reasons for rural female migrants are mostly non-economic and they are mostly attributed to 'traditional' socio-cultural practices such as early marriage and abduction as well as social reasons like divorce, death of spouse, family displacement, marriage arrangement and family's relocation.

Seasonal rural-urban migration is not limited to the poor rural community members. Middle income and even "rich" peasants take part in seasonal migration as a means of maximizing income opportunities. Both young and adult men practice seasonal migration to offset their rural distress and earn income to augment their agricultural income.

Long-term migrants to the Shashemene research site include mostly young people from Wolayta, Kambata, Hadiya and Gofa in the SNNPR. Similarly, the long-term migrants in Kolfe area are mainly young men and women from SNNPR (mostly Gurage and Gamo), but also Amhara and Oromia regions. The longer-term male and young migrants notably from these regions often moved to the two urban areas because of extreme shortage of rural land and lack of off-farm employment opportunities.

Pull factors in Shashemene site relate to a variety of livelihood and work opportunities the town provides for long-term and seasonal migrants. For men these include unskilled daily laborers' work in the housing construction sector, loading and unloading of goods, urban vegetable growing, weaving, blacksmithing, lottery selling and, when they get unemployed, begging. Unmarried women are reported to engage in domestic work as housemaids, in the bars as waitresses and commercial sex workers, as well as carrying out petty trading and begging.

There seems to be some specialization of activities among the short-term migrants of the different ethnic groups living in the neighborhoods studied. For instance, many of

the Oromo male migrants to Kolfe are engaged in loading and unloading, firewood selling and daily labor work. The Amhara male migrants tend to carry out activities that include daily labor, guarding, lottery selling and begging; female migrants from the same ethnic group are mostly working as housemaids, local bar workers, lottery sellers and beggars. The male migrants from Gamo are mostly engaged in daily labor, weaving and other craft-related work, while the females tend to be housewives and assist their spouses and other family members in weaving work. Female seasonal migrants from Gurage areas were engaged in small business and street vending; the majority of the Amhara migrants were engaged in production of local drinks, waitressing in small bars, sex work and employed as house-maid and *injera* bakers. The Gamo female migrants were found to have moved due to marriage to join their spouses. Often they engaged in household activities and assisting weaving activities performed by their families. Young migrant boys from Gurage often work as shoeshine boys and the girls as "chulo" house servants. Similarly, young migrant boys from Gamo work as assistants in the traditional weaving sector. Young boys from Gojjam are engaged in lottery selling.

The presence of permanent movement/long term migration, seasonal/short-term migration and circular migration have created different levels and intensities of linkages between urban and rural areas. Long-term and short-term migrants are also instrumental in providing information about jobs, education and business opportunities to their kin. Marriage is also found to be among the mechanisms that link the urban and the rural areas as most of the migrants from Kambata, Hadiya, Gamo and Gurage prefer to marry within their ethnic groups. There are also times when long-term migrants, notably from Gurage have two wives and maintain two households, one in the rural and the other in urban areas. Long-term male migrants from SNNPR, particularly Gurage, who are now living in Kolfe and Shashemene sites often return to their birthplaces during *Mesqel* holiday in September. Migrants from the SNNPR also have strong social networks through which they meet and help one another. For instance, the self-help associations formed by the long-term female and male migrants from Wolayta and Kambata living in Bishate Sefer, Shashemene, are exemplary in organizing joint trips to celebrate *Mesqel* with their relatives in rural areas, contributing cash in times of emergencies and accompanying bereaved migrants for funerals. Kambata and Wolayta long-term migrants have associations, the Wolayta one called 'Wolayta Giorgis'. Migrants in Bishate *Sefer*, Shashemene,

were found to have business linkages with their home areas, whereby they bring and send goods for sale.

The majority of the urban poor households view *Wereda* towns, sub-*wereda* towns and other rural villages as important places to maximize the opportunities for their livelihoods. This is followed by Addis Ababa, the regional state capital and zonal town. Reasons for the importance of small-towns include the availability of consumer goods, health and education services as well as employment in construction work and social services (small bars, restaurants).

The majority of the migrants are below the age of 30. Due to the presence of circular migrations between the Gamo and the two urban sites (Kolfe and Shashemene), adult and long-term migrants also attract young boys from their respective areas of origin to join the highly exploitative and potentially abusive employment situation in the weaving work in Kolfe, Addis Ababa and *Serategna Sefer*, Shashemene.

Single and young female and male migrants have mostly practiced the migration from Gurage over the past three years. Both Addis Ababa and Shashemene were attractive for the migration of unskilled, lowly trained and poor rural males from remote rural areas.

The illiteracy rate of female migrants is found out to be more than that of male migrants. Few migrants are educated above grade 12, in both Addis Ababa and Shashemene, where both the female and male urban migrants were also found to be unskilled and with limited training.

Migration is attributed to have both negative and positive consequences at community, household and individual levels. The presence of seasonal and permanent migration from rural to urban areas mostly served as a safety net mechanism for poor individuals and rural households to earn cash income and transfer remittances used for coping with distress situations, paying annual land taxes, buying small stocks and obtaining better medications. Beyond serving as a safety net, the rural-urban seasonal migration among the interviewed individuals often did not bring significant change to the lives of the majority of the poor migrants. Out-migration has also negative economic and social effects on those who migrated particularly for those engaged in domestic work with extremely low wages. Although

these migrants manage to escape their serious economic problems in their rural homes due to a relatively better cash income they earned in the urban areas and the social support they obtained from their migrant associations, their individual wellbeing was not improved; rather it was sometimes reported to have exposed them to exploitation and abuse. The exploitation and abuse has been more serious among children and female migrants.

Given the dynamics of migration and effects of the migration experience the Government of Ethiopia, donors and the NGO community should consider the strengthening of the decentralization process and the shifting of concentration of holistic and integrated development activities in small *Wereda* towns and rural areas. Such investment in lower level of development structure can serve as development conduits between the remote rural areas and the major urban centers.

The Government of Ethiopia together with donors and the NGOs community should increase investment in rural employment creation, reduce extreme levels of rural destitution, improve rural roads and other physical infrastructures, increase the availability of education and health services at community and *Wereda* levels. The Ethiopian Government Sustainable Poverty Reduction Strategy is in line with this recommendation but its implementation process should be enhanced and backed up with increased budgetary resources and better coordination with NGOs.

Women need special support and this includes the enforcement of new legal instruments (revised family law, penal code, civil code and land policy) that protect them from abuses manifested in the form of rape, abduction, early marriage and empower them through affirmative programs such as compulsory primary level education for girls, rural credit facilities for women and access to political participation. The implementation of these affirmative actions and revised codes should be implemented on consistent manner at Woreda and community levels.

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THE NATURE OF SELF-EMPLOYMENT IN URBAN ETHIOPIA

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Abstract

Various studies on the Ethiopian economy in general and the urban sector in particular have stated about the staggering level of unemployment in the country. Rapidly growing population and a less than satisfactory performance in economic growth over the years, among others, are to blame for this situation. That the unemployment situation is particularly rampant among the youth which constitutes over a third of the population calls for an urgent intervention aimed at improving the fate of the unemployed. Promoting self-employment forms an integral part of any intervention aimed at reducing unemployment. Given this, studying the determinants of self-employment is essential by way of informing concerned parties as to factors important in encouraging self-employment. As well as surveying the relevant literature, the study undertakes an empirical investigation into the nature of self-employment using data from a unique panel data set, the Ethiopian Urban Socio-Economic Survey. Findings of the study give some evidence that self-employment is largely a route out of unemployment rather than being something driven by entrepreneurship. It also finds a declining trend in the patterns of self-employment over the study period. Very few studies have looked into issues relating to self-employment in the context of developing countries in general, and none in the case of Ethiopia. As such, this study serves an important role shedding some light on issues pertaining to self-employment.

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1.   Introduction

Various recent studies[2] have stated about the unprecedented level of unemployment that characterises urban Ethiopia.[3] The problem is rampant especially among the youth which constitutes over a third of the urban population. That the youth, which is the future of the country, is found in such a state is unfortunate and rather disquieting. One way of tackling this problem of unemployment is through the promotion of self-employment. That the State in countries such as Ethiopia is poor means that the promotion of self-employment is all the more essential in easing the high level of unemployment. Sustained growth performance accompanied by rapid employment creation is ultimately to decide the fate of the unemployed. Nevertheless, the promotion of self-employment can play a crucial role in this process. On a more optimistic note, the promotion of self-employment may even have a far reaching positive outcome. The accepted wisdom is that the development of new firms almost always starts with self-employment, and this may turn out to be particularly essential to capital-constrained developing economies such as Ethiopia. Given these, understanding the nature of self-employment is important for it makes possible an informed intervention. This paper investigates issues surrounding self-employment in the context of urban Ethiopia. In particular, the study focuses on factors that influence the decision to be self-employed.

This study is unique on at least three important grounds. First, there are very few previous studies investigating issues of self-employment in the context of a developing country, and none in the case of Ethiopia. Second, this study uses a unique panel data, the Ethiopian Urban Socio-Economic Survey (EUSES), which has rarely been used previously. Third, the study employs an empirical methodology that accounts for unobserved heterogeneity. Although most researchers agree on the importance of unobserved factors (for example, unobserved entrepreneurial ability) in determining the decision to be self-employed, no previous study models unobserved

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[2] Bizuneh *et al*. (2001), Getinet (2003), Serneels (2001) and Krishnan *et al*. (1998) are some of the studies dwelling on the labour market situation of the youth/'young' in Ethiopia. Findings reported in various publications of the UN give a similar account of the unemployment situation in Ethiopia.
[3] Unemployment rate related discussion in the developing world is largely an urban phenomenon for in the rural areas, where the bulk of the population resides; the unemployment rate may not be as reliable given the seasonality in labour market slack in these areas.

heterogeneity exclusively. As such, this study also adds a new dimension to the self-employment literature.

The study has the following sections. Section 2 is devoted to some background discussion with focus on the urban labour market and the unemployment situation in urban Ethiopia, particularly among the urban youth. Section 3 is devoted to some discussion on the underlying theoretical framework and review of the literature on self-employment. Section 4 discusses the data and the empirical methodology employed. Section 5 discusses the empirical findings and the final section concludes the paper.

2.   Background

The Ethiopian economy is essentially a subsistence-agriculture economy. Some 80 per cent of the population[4] resides in rural areas driving its livelihood directly from agriculture and animal husbandry, and contributing 52 per cent of the country's GDP. The urban centre is home to about 20 per cent of the population with some 12 per cent of this driving its livelihood from government and services while the remaining 8 per cent relying on industry and construction. A number of recent studies that have focused on different aspects of the urban labour market in Ethiopia (Bizuneh *et al*., 2001; Getinet, 2003; Krishnan, 1996, 2001; Krishnan *et al*., 1998; Serneels, 2001) have emphasised the unprecedented level of unemployment in the urban centres of the country, particularly among the youth/young.

Several factors are to blame for this sad state of affair. To start with, there is the unprecedented rate of growth of the (urban) population. The larger the size of the youth cohort, the more daunting the provision/generation of accommodating employment will generally be. That the growth and job creation performance of the economy has been disappointing for the most part is another important reason explaining the high level of unemployment. Poor growth performance and weak aggregate demand is a recipe for disaster when combined with growing youth/adult labour force in need of employment. The mismatch between the skill requirements of the labour market on the one hand and the education/training skills of the youth/young on the other is also another factor held responsible for the high and

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[4] Recent UN sources/estimates put the population of Ethiopia to be in excess of 74 million.

persistent levels of unemployment in the urban centres. That private sector development had been openly stifled in the pre-1991 period and has been given minimal support since then is yet another reason contributing to the current high level of unemployment in Ethiopia. The move to a market led system in the post-1991 period, which commenced with the adoption of the WB/IMF sponsored structural adjustment program, marked a major departure from the previous policy regime. Nonetheless, performance in employment creation has particularly been poor despite some improvement in growth performance. Krishnan (2001) attributes this to the fact that the private sector and self-employment has not yet overcome the effect of the repression it had experienced in the pre-1991 period. Alemayehu and Befekadu (2002), on the other hand, state that the recent improved growth performance came largely from the rural sector which is weakly linked to the urban sector. A post-1991 development in Ethiopia that is worthy of a note here is the expansion of parastatals that are likely to crowd out small businesses and the wider private sector.

3. Self-employment: Theoretical background and some stylized facts/evidence

The issue of self-employment has gained more ground in the economics literature relatively recently. Moreover, the existing literature dwells largely on developed economies, with very little to offer to the labour market situation of a developing country such as Ethiopia. The theoretical argument behind the self-employment decision is one that is based on labour market states as choice variables determined by expected utility from each labour market state. Following Evans and Jovanovic (1998), Evans and Leighton (1989) and Taylor (1996; 1999), suppose that the expected utility from self-employment, $E(U_{se})$, and employment, $E(U_e)$ are given as follows

$$E(U_{se}) = f(\theta, k, r, D, \mathbf{X})$$
$$E(U_e) = f(w, \mathbf{X})$$

where θ represents entrepreneurial ability, k represents available capital, r is the rate of interest, D stands for the level of demand in the economy, w stands for the wage

rate and/or wage offer, and **X** represents individual tastes and preferences. Suppose also that individuals receive no utility from being unemployed and/or being out of the labour force (OLF), i.e. $E(U_u) = E(U_{olf}) = 0.$ Given this framework and assuming that $E(U_u) = E(U_{olf}) = 0,$ the self-employment decision lies in comparing $E(U_{se})$ and $E(U_e)$. Thus, an individual will prefer self-employment over wage employment (or wage offer) if: $E(U_{se}) > E(U_e).$

This framework has some important implications. For example, individuals would voluntarily cease to be in self-employment if a wage offer, *w*, warranties that $E(U_e) > E(U_{se}).$ Likewise, individuals who perceive to have high entrepreneurial ability, who have access to capital and/or favourable rate of interest, among others, may prefer to be/stay in self-employment. As stated in section 2 above, in the context of the urban centre of developing countries in general and Ethiopia in particular there is very high and persistent unemployment. The implication of this is that expected earnings from self-employment are likely to be lower relative to expected employment earnings. Given the assumption $E(U_u) = E(U_{olf}) = 0,$ the pattern of preference/choice among alternative labour market states identified is to be $E(U_e) > E(U_{se}) > E(U_u) = E(U_{olf}).$ In other words, in an environment where jobs /wage offers/ are hard to come by for the large army of the unemployed, self-employment is almost certainly a preferred labour market state to being in unemployment and/or inactivity.

The existing literature on self-employment raises various issues of importance worth noting here. First, there is the conceptual and measurement issue that deserves particular attention. As Earle and Sakova (2000) state, a self-employed worker may represent a 'true' entrepreneur running successful business, exploiting new opportunities and inventing new products, processes and distribution methods. At the other extreme, we may have a self-employed worker who chose to be self-employed due only to lack of opportunities elsewhere. Similarly, "a high rate of self-employment may reflect an environment encouraging risk-taking, job creation, and market development, or it may indicate a lack of jobs in a primary sector in which wages are set above the market-clearing level. An increase in the self-employment rate may represent entrepreneurship derived from economic liberalization and tax reduction, or

it may be a consequence of imperfect adjustment to contractions or structural shocks" (Earle & Sakova, 2000, p. 576).

The self-employment literature also makes some claims that have not yet been proved conclusively for the most part. One such claim is that self-employment helps promote invention, innovation and the creation of new jobs.[5] The promotion of self-employment/small business is also claimed to lead to a higher degree of competition in the product market, bringing gains to consumers. Greater levels of self-employment are also linked to increased self-reliance and well-being. Despite lack of conclusive evidence on these claims and the advantages of promoting self-employment, some governments, particularly those in developed market economies, provide various types of support to encourage the unemployed to start own business. The types of support these governments provide include loans to small businesses, exemption of small businesses from certain regulations, exemption of small business from some taxes and an advisory service to beginner small businesses (Blanchflower, 2000; 1999)

With regards to characteristics that best describe the self-employed, the existing literature identifies some important factors that include access to capital and liquidity constraint, certain demographic and human capital characteristics, family background related factors, local/regional labour market conditions, and policy/institution related factors, among others. In terms of access to capital, the literature states that lack of capital and liquidity constraint affect the propensity to be self-employed adversely (Blanchflower, 1999, 2000; Blanchflower and Oswald, 1998). These studies also find that the propensity to be self-employed depends positively on whether the individual in question ever received an inheritance or gift. Regarding the role of institutions and/or policy, there is some evidence in the literature that attests to the positive effect of increases in income tax on self-employment. The existing evidence also points to the strong negative relationship between unemployment and self-employment. In terms of demographic characteristics, the evidence suggests that the probability of being self-employed is generally higher among men than women, and it is also found to increase with age. With regards to the educational profile of the self-employed, they are more likely to come from the least educated. There exists some evidence, however, that the most educated too have a higher probability of being self-employed

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[5] These claims/arguments are in line with the benefits of entrepreneurship that Schumpeter (1942) identifies, and can be justified if one assumes that self-employment represents the simplest kind of entrepreneurship

(Blanchflower and Oswald, 1990; Blanchflower, 1999; 2000; Earle and Sakova, 2000; Taylor, 1996).

4.   Data and empirical methodology

The data employed in this study comes from a unique panel data set collected by the Ethiopian Urban Socio-Economic Survey (EUSES) over the period 1994 – 2000. The EUSES is a national survey of urban households that has been undertaken by the Department of Economics, Addis Ababa University, in collaboration with the Department of Economics, Goteborg University. The first wave of the EUSES was conducted in 1994 covering seven major urban centres of the country, including the capital city, each with a population in excess of 100,000 and believed to represent the major socio-economic characteristics of urban Ethiopia. The original EUSES sample households had been selected by allocating a total sample size of 1500 households to the seven urban centres based on stratified random sampling technique. The first survey that was conducted in 1994 therefore covered these 1500 households. The second and third waves of the EUSES were conducted in 1995 and 1997 covering the original households[6], but capturing only changes on socio-economic conditions since the first/previous wave. The most recent wave available is the fourth wave that was conducted in 2000. Unlike the preceding two waves where only changes from the previous wave were monitored, the 2000 wave enlists each and every member in the households (Bigesten *et al*, 2004). In this study, use is made of all four sweeps of the EUSES for the purpose of studying the nature of self-employment in urban Ethiopia.

In terms of the empirical methodology employed to study the nature of self-employment, a panel data binary choice model that accounts for unobserved individual heterogeneity has been used. That we have, for each individual included in the sample, a binary outcome variable of self-employment, y_{it}, for each of $T = 4$ time periods justifies the use of panel data binary choice model.

Suppose that $\left\{ (\mathbf{y}_{it}, \mathbf{x}_{it}) : t = 1,...,T = 4 \right\}$ represent a random draw from the cross section for each individual, *i*, where $\mathbf{y}_{it}$ and $\mathbf{x}_{it}$ can both be vectors; we then assume

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[6] Subsequent waves covered the original households. Households that dropped out in subsequent waves were replaced by other/new households that are believed to be more or less similar to the original households, in terms of socio-economic characteristics.

and model that there is an unobserved heterogeneity, v_i, associated with each cross section unit i. Using unobserved effects probit model, the propensity to be self-employed can be assumed to take the form

$$P(y_{it} = 1 \mid \mathbf{x}_{it}, \theta_i) = \mathbf{\Phi}(\mathbf{x}_{it}\boldsymbol{\beta} + v_i), \qquad t = 1,...,4$$

with v_i, appearing additively in the index function and $\mathbf{x}_{it}$ containing a full set of time dummies. Because we specifically account for unobserved heterogeneity, it is safe to assume that y_{it} are dependent across t conditionally only on the observables, $\mathbf{x}_i$. The density of $(y_{i1},....y_{iT})$ conditional on $(\mathbf{x}_i, v_i)$ can be given as

$$f(y_1,..., y_T \mid \mathbf{x}_i, v_i; \boldsymbol{\beta}) = \prod_{t=1}^{T} f(y_t \mid \mathbf{x}_{it}, v_i; \boldsymbol{\beta})$$

where $f(y_t \mid \mathbf{x}_t, v; \boldsymbol{\beta}) = \mathbf{\Phi}(\mathbf{x}_t\boldsymbol{\beta} + v)^{y_t} [1 - \mathbf{\Phi}(\mathbf{x}_t\boldsymbol{\beta} + v)]^{1-y_t}$ (Wooldridge, 2002). The relevant log-likelihood function of interest is then given by

$$L(\boldsymbol{\beta}, v) = \sum_{i=1}^{N} \sum_{t=1}^{T} \left\{ y_{it} \log[\mathbf{\Phi}(\mathbf{x}_{it}\boldsymbol{\beta} + v_i)] + (1 - y_{it}) \log[1 - \mathbf{\Phi}(\mathbf{x}_{it}\boldsymbol{\beta} + v_i)] \right\}$$

An empirical issue of importance at this stage has to do with the nature/distribution of the unobserved heterogeneity term, v_i. The traditional random effects probit model makes the rather strong assumption that $v_i \mid x_i \sim \text{Normal}(0, \sigma_v^2)$. This assumption implies that v_i and $\mathbf{x}_i$ are independent and that v_i has a Gaussian distribution may prove to be implausible, for v_i, by definition, has an unknown distribution. The omitted variable that v_i stands for might, for example, be represented by a categorical variable, making the normality assumption inappropriate. In the face of such possible drawback, the best alternative is to model the unobserved heterogeneity term non-parametrically. In this study, unobserved heterogeneity is modelled non-parametrically by using a discrete mass point distribution for the heterogeneity term v and its density function $g_v(v)$. Representing the distribution of mass points by a number of finite locations $\theta_1,...,\theta_m$ and associated probabilities for each mass point

$\pi_1, ..., \pi_m$, the number and location of the mass points and associated probabilities has been estimated together with other parameters of interest.[7] The additional parameters characterising the unobserved heterogeneity term should satisfy the condition that $\sum_{m=1}^{M} \pi_m = 1, \ \pi_m \geq 0$ and $\sum_{m=1}^{M} \pi_m \theta_m = 0,$ however.

To account for the conceptual and measurement issues raised in section 3 of this study, alternative definitions of self-employment have been used. First, we make use of a narrow and a broader definition of self-employment. The narrow definition regards the self-employed as only those that are employers. The broader definition of self-employment, on the other hand, includes those that are own account workers and those involved in household female business activity. Secondly, the comparison group for the self-employed has been made to account for the different labour market states possible. Accordingly, the first version of models estimated has a dependent variable that assumes a value of 1 if an individual is self-employed and 0 if an individual is (wage) employee. The second version of models has a dependent variable that assumes a value of 1 if an individual is self-employed and 0 if an individual is (wage) employee or unemployed. The third version has a dependent variable that assumes a value of 1 if an individual is self-employed and 0 if an individual is (wage) employee, unemployed or out of the labour force.

5.   Discussion of results

As stated in section 4 above, alternative definitions of self-employment and comparison group have been used in the empirical analysis. Looking at the descriptive statistics given in Table 3 in the appendix reveals that there has been a declining trend in the proportion of the self-employed, defined broadly, over the study period. Accordingly, the self-employed make up 19 per cent of the labour force in 1994 but this percentage has declined consistently reaching 16 percent in 2000. The

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[7] The estimation of the discrete random effects probit model is conducted using the GLLAMM software (http://www.gllamm.org)

narrower definition of self-employment which refers to those that are employers, on the other hand, indicate some variability over the period but accounts for roughly 1 per cent of the urban labour force.

In terms of the characteristics of the self-employed, Table 1 and Table 2 in the appendix indicate that the self-employed are unlikely to come from the young, regardless of the type of definition used. Women are significantly less likely to be employers but are more likely to constitute the broader definition of the self-employed which has to do with the inclusion of household female business activity in the broader definition. Those who migrated to the urban centres over a period of 10 years prior to being surveyed are significantly less likely to make up the self-employed irrespective, again, of the type of definition used. In terms of ethnicity and religious background of respondents, the Gurages are significantly more likely to make up the self-employed defined narrowly while the other ethnic groups are significantly less likely to make up the self-employed.[8] Such ethnicity related significance tends to disappear when the reference category is made to account for the unemployed and the inactive, however. With regards to religious characteristics, orthodox Christians are significantly less likely to make up the self-employed, defined narrowly, in general while Muslims are more likely to constitute employers compared with their employee counterparts.

The nature of self-employment in terms of educational background of respondents suggest that the self-employed are generally significantly less likely to come from those that have completed at least secondary level education. On the other hand, those with at most primary level education are significantly more likely to form the self-employed defined broadly. This finding is in line with the evidence that the self-employment literature attests to. The general consensus is that the self-employed are more likely to come from the least educated segment of the labour force that is unlike to get wage offers that would make employment an option. The wider literature does, however, indicate that some, albeit a smaller proportion, of the highly educated moving into self-employment. In the sample used in this study, the proportion of those that have a tertiary education (or beyond) is rather small which explains the broad category of 'secondary level or more' used in the empirical exercise undertaken.

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[8] This seems to be in line with the traditionally held view that the Gurages have the edge, in terms of entrepreneurship, over other ethnic groups.

A finding that does not conform to what the self-employment and micro-enterprise literature suggests is that associated with 'access to credit'. Access to credit does not have the expected sign and significance in this study.[9] The wider literature suggests lack of capital and/or access to credit being an important impediment to would-be entrepreneurs from being self-employed or, for that matter, for giving up self-employment. Household/parental background is found to have a significant positive effect, for the most part, in determining the propensity to be self-employed. In particular, those whose father is/was in self-employment are more likely to pick the art of their father. This is not an unexpected finding given the influence that parental career may have on siblings in general. Not surprisingly, the self-employed are significantly more likely to be heads of the household. What is not in line with expectation is the finding that being in Addis Abeba does not have any positive and significant effect on the probability of being self-employed. One would expect urban based self-employment and/or entrepreneurship, if any, to be noticeable in the capital city of the country.

The declining trend in the number of the self-employed, defined narrowly or otherwise, that we observed in the descriptive statistics given in Table 3 in the appendix is further confirmed by the results from the formal modelling exercise. Broadly speaking, the trend in the patterns of self-employment in urban Ethiopia is one of declining. This is again very much counter-intuitive for an economy that claims to have departed from a command system of economic management over a decade or so ago. One would expect to observe a positive, however small in magnitude, trend in the direction of more entrepreneurship and self-employment. Such expectation is justified, irrespective of the weaknesses of the liberalisation measures undertaken in Ethiopia in the post 1991 period and/or other problems that beset this period/system.[10] Economies that have made a similar transition seem to have created a favourable condition for the development of self-employment and entrepreneurship. For example, in their recent study into the nature of self-employment in former socialist Eastern European countries, Earle and Sakova (2000) find that the level of

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[9] This may have to do with the 'crude' proxy used in the estimation. The access to credit variable is generated on the basis of the question that monitors whether or not at least one member of a household has a bank account; whether or not at least one member of a household is member of a credit association, or whether or not at least one member of the household is a member of an 'equib'.

[10] It is not uncommon to hear about the charges that international (financial) institutions and the domestic private sector lay against the current government regarding the half-hearted nature of the liberalisation measures undertaken to date and the increasing role that party affiliated companies have in the conduct of business in Ethiopia in the post 1991 period. Both of these are likely to be detrimental to the development of the private sector and the promotion of self-employment in the country.

self-employment has grown extremely rapidly in the post transition period although it was generally very much negligible at the start of transition in 1989.

With respect to the heterogeneity related parameters, we can view the location of the discrete points estimated (the θ's) and their respective masses (π's) as representing different, four in our case, latent classes of respondents, each representing different levels/propensity to be self-employed. Thus, if we take the narrow definition of self-employment with employees as the reference category, we can have four distinct groups with probabilities of 14 per cent, 38 per cent, 30 per cent and 18 per cent. The importance of these parameters is in providing us a way to handle unobserved factors that may determine the propensity to be self-employed.

6.   Summary and conclusion

This study has attempted to shed some light on the nature of self-employment in urban Ethiopia. To this end, the study reviewed the literature on self-employment focusing on the relevant theoretical background and empirical evidence on the same. Findings from the empirical investigation undertaken give some indication that self-employment is a route out of unemployment rather than being something of an entrepreneurial venture. In particular, findings of the study indicate that the young, the educated, those that migrated to urban areas recently and those without parents in self-employment are less likely to be found in self-employment. Findings regarding the effect of 'access to credit' on the propensity to be self-employed are counterintuitive. This may have to do with the way 'access to credit' has been measured and calls for a further investigation into the role that access to credit plays in determining self-employment.

The finding that there is a declining trend in self-employment is rather puzzling. One would expect a rising trend in self-employment in an economy that departed from a command system of economic management. That the liberalisation process has not gone far off and that government affiliated companies are having increasing role in the economy may, at least in part, explain this pattern. Small businesses and self-employment are likely to be crowded out when faced with large companies that seem to enjoy preferential treatment. As stated earlier, two important factors that are likely to impact the level of self-employment most are: 1) the availability of an environment

that encourages risk-taking and market development and 2) the lack of employment opportunity in the major employer sector of the economy. That there is lack of employment opportunity in the urban sector in Ethiopian is quite apparent. What is not obvious is as to why self-employment has not picked up in the urban sector substantially. This brings to the fore the issue of whether there has been a conducive environment, including credit availability, in the urban sector of the country. This is an important question to ponder about. That the growth of entrepreneurship in general and the private sector in particular is commonly associated with innovation, job creation and rapid economic growth makes this assignment all the more important.

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Appendix: Tables of results and descriptive statistics

Table 1: Random effects probit estimates of the determinants of self-employment (employers)

	Exp(b)	Exp(b)	Exp(b)
	1	**2**	**3**
Age	0.78***	0.82***	0.86***
	(0.04)	(0.02)	(0.02)
Agesq	1.004***	1.003***	1.002***
	(0.00)	(0.00)	(0.00)
Female	0.10***	0.15***	0.10***
	(0.04)	(0.03)	(0.02)
Married	0.38***	2.07***	2.57***
	(0.11)	(0.37)	(0.45)
Migrant	0.18***	0.56***	0.71
	0.08	0.12	0.15
No health problem	1.12	0.97	0.85
	(0.29)	(0.15)	(0.12)
TV set in the house	1.11	4.74***	1.51***
	(0.31)	(1.12)	(0.23)
Amhara	0.25***	0.15***	0.10***
	(0.09)	(0.04)	(0.03)
Oromo	0.09***	0.14***	0.08***
	(0.04)	(0.04)	(0.02)
Tigrawi	0.45	0.25***	0.10***
	(0.21)	(0.09)	(0.04)
Gurage	10.60***	0.31	0.75
	(4.99)	(0.09)	(0.20)
Orthodox Christian	0.18***	0.14***	0.16***
	(0.09)	(0.04)	(0.04)
Muslim	24.14***	1.13**	0.43***
	(16.39)	(0.35)	(0.11)
Primary level education	1.01	0.82	1.43**
	(0.31)	(0.16)	(0.22)
Secondary or more	0.07***	0.27***	0.99
	(0.03)	(0.06)	(0.17)
Access to credit	0.28***	0.85	0.86
	(0.08)	(0.13)	(0.12)
Father self-employed	1.90**	2.12***	1.33
	(0.56)	(0.38)	(0.21)
Household head	4.31***	4.39***	9.24***
	(22.24)	(0.85)	(1.78)
Children in the household	0.38***	0.85	0.71
	(0.12)	(0.16)	(0.11)

	Exp(b)	Exp(b)	Exp(b)
Addis Ababa	0.77	1.05	0.71*
	(0.23)	(0.17)	(0.11)
year95	0.92	0.88	0.83
	(0.19)	(0.12)	(0.10)
year97	0.74	0.82	0.83
	(0.16)	(0.12)	(0.10)
year00	0.63*	0.75*	0.72**
	(0.16)	(0.12)	(0.09)
Mass point 1 (θ_1)	1.7892	1.4499	2.3349
Probability 1 (π_1)	0.3428	0.2105	0.1880
Mass point 2 (θ_2)	6.9807	4.5897	5.2136
Probability 2 (π_2)	0.1872	0.1500	0.0958
Mass point 3 (θ_3)	-8.9121	-2.4574	-1.7186
Probability 3 (π_3)	0.3677	0.5862	0.6887
Mass point 4 (θ_4)	13.264	8.3887	8.9072
Probability 4 (π_4)	0.1023	0.0533	0.0275
No. of level 1 units	5258	11184	18799
No. of level 2 units	2677	5320	8736
Log-likelihood	-1285	-1884	-2245

Note: 1. Reported results of covariate estimates are exponentiated form of coefficients

5.   Figures in bracket are standard errors

6.   *** significant at 1%; ** significant at 5%; * significant at 10%

7.   Columns 1, 2 and 3 represent the different reference groups used involving employees; employees and the unemployed; and employees, the unemployed and the inactive, respectively.

Table 2: Random effects probit estimates of the determinants of self-employment (employer & own account worker)

	Exp(b)	Exp(b)	Exp(b)
	1	2	3
Age	0.90***	0.87***	0.88***
	(0.04)	(0.02)	(0.01)
Agesq	1.002***	1.003***	1.001***
	(0.00)	(0.00)	(0.00)
Female	3.37***	2.33***	0.72**
	(0.92)	(0.31)	(0.09)
Married	0.53**	1.25***	1.11
	(0.16)	(0.19)	(0.15)
Migrant	0.42**	0.49***	0.75
	(0.18)	(0.09)	(0.11)
No health problem	0.83	0.96	0.97
	(0.16)	(0.12)	(0.10)
TV set in the house	0.13***	0.49***	0.62***
	(0.04)	(0.07)	(0.08)
Amhara	0.09	0.13***	0.20***
	(0.04)***	(0.03)	(0.04)
Oromo	0.05***	0.12***	0.20***
	(0.04)	(0.03)	(0.04)
Tigrawi	0.23***	0.37***	0.20***
	(0.12)	(0.10)	(0.05)
Gurage	1.54	0.84*	0.70*
	(0.68)	(0.21)	(0.14)
Orthodox Christian	0.50*	0.13***	0.16***
	(0.18)	(0.03)	(0.03)
Muslim	3.63*	0.42	0.37***
	(2.73)	(0.11)	(0.09)
Primary level education	1.52	1.55***	2.08***
	(0.46)	(0.25)	(0.33)
Secondary or more	0.11***	0.18***	0.91
	(0.04)	(0.03)	(0.16)
Has access to credit	0.42***	0.81	0.53***
	(0.12)	(0.11)	(0.07)
Father self employed	2.35***	1.99***	1.59***
	(0.55)	(0.27)	(0.20)
Household head	3.99***	4.43***	16.25***
	(1.89)	(0.73)	(2.90)
Children in the household	1.11	1.15***	0.91
	(0.26)	(0.15)	(0.10)
Addis Ababa	1.48	0.47***	0.59***
	(0.49)	(0.07)	(0.09)

	Exp(b)	Exp(b)	Exp(b)
year95	0.87	0.82**	0.87*
	(0.14)	(0.09)	(0.08)
year97	0.70**	0.68***	0.85*
	(0.12)	(0.08)	(0.08)
year00	0.64**	0.66***	0.67***
	(0.13)	(0.09)	(0.07)
Mass point 1 (θ_1)	-1.9251	0.7933	1.9567
Probability 1 (π_1)	0.1438	0.3068	0.1785
Mass point 2 (θ_2)	2.0397	4.0489	4.3187
Probability 2 (π_2)	0.3845	0.1894	0.1273
Mass point 3 (θ_3)	-6.928	-3.7497	-1.9448
Probability 3 (π_3)	0.2962	0.4303	0.6455
Mass point 4 (θ_4)	8.8045	8.2074	7.3254
Probability 4 (π_4)	0.1755	0.0735	0.0487
No. of level 1 units	6088	11184	18799
No. of level 2 units	3061	5320	8736
Log-likelihood	-1835	-2631	-3514

Note: 1. Reported results of covariate estimates are exponentiated form of coefficients
2. Figures in bracket are standard errors
3. *** significant at 1%; ** significant at 5%; * significant at 10%.
4. Columns 1, 2 and 3 represent the different reference groups used involving employees; employees and the unemployed; and employees, the unemployed and the inactive, respectively.

Table 3: Descriptive statistics, dependent variable

Dependent variable	No. of obs.	Mean	Std. dev.
	Year = 1994		
Employer1	1500	0.020	0.140
Employer2	3289	0.011	0.105
Employer3	5485	0.007	0.082
Employer & own account worker1	1500	0.337	0.473
Employer & own account worker2	3289	0.189	0.391
Employer & own account worker3	5485	0.114	0.317
	Year = 1995		
Employer1	1370	0.014	0.116
Employer2	2865	0.007	0.085
Employer3	4716	0.004	0.067
Employer & own account worker1	1370	0.335	0.472
Employer & own account worker2	2865	0.180	0.384
Employer & own account worker3	4716	0.109	0.312
	Year = 1997		
Employer1	1204	0.012	0.110
Employer2	2566	0.007	0.081
Employer3	4169	0.004	0.064
Employer & own account worker1	1204	0.329	0.470
Employer & own account worker2	2566	0.176	0.381
Employer & own account worker3	4169	0.109	0.311
	Year = 2000		
Employer1	1184	0.018	0.133
Employer2	2464	0.010	0.098
Employer3	4429	0.005	0.073
Employer & own account worker1	1184	0.298	0.457
Employer & own account worker2	2464	0.160	0.367
Employer & own account worker3	4429	0.089	0.285

Note: Employer/employer & own account worker/ 1, 2 and 3 refer to the same number of employers and/or employer & own account workers but with different reference categories. The reference category in 1 is employees, in 2 employees & the unemployed and in 3 employees, the unemployed and the inactive, all within the age range of 16 - 65.

Table 4: Descriptive statistics, covariates

Wave	1994		1995		1997		2000	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	30.868	13.100	31.126	12.559	32.605	12.354	31.890	13.463
Agesq	1124.389	967.734	1126.531	929.954	1215.650	946.890	1198.194	995.194
Female	0.552	0.497	0.561	0.496	0.571	0.495	0.561	0.496
Married	0.326	0.469	0.328	0.470	0.328	0.469	0.279	0.449
Migrant	0.167	0.373	0.161	0.367	0.150	0.357	0.082	0.274
No health problem	0.143	0.350	0.153	0.360	0.166	0.372	0.099	0.299
TV in the HH	0.395	0.489	0.367	0.482	0.362	0.480	0.410	0.492
Amhara	0.520	0.500	0.522	0.500	0.524	0.499	0.507	0.500
Oromo	0.168	0.374	0.166	0.372	0.168	0.374	0.192	0.394
Tigrawi	0.099	0.298	0.093	0.291	0.094	0.292	0.092	0.289
Gurage	0.128	0.334	0.131	0.337	0.130	0.337	0.133	0.339
Orthodox Christian	0.808	0.394	0.811	0.391	0.812	0.391	0.794	0.404
Muslim	0.128	0.334	0.125	0.330	0.124	0.329	0.130	0.336
Primary education	0.400	0.490	0.405	0.491	0.407	0.491	0.352	0.478
Secondary or more	0.302	0.459	0.292	0.455	0.286	0.452	0.289	0.453
Has access to credit	0.755	0.430	0.742	0.438	0.741	0.438	0.630	0.483
Father self-employed	0.585	0.493	0.576	0.494	0.572	0.495	0.453	0.498
HH head	0.239	0.426	0.222	0.416	0.211	0.408	0.197	0.398
Children in the HH	0.279	0.449	0.281	0.449	0.281	0.449	0.229	0.420
Addis Ababa	0.657	0.475	0.658	0.474	0.669	0.471	0.655	0.475
No of observations	5500		4708		4152		4439	

PRIVATISATION AND ITS POTENTIALITIES IN INVESTMENT ATTRACTION:
AN EMPIRICAL STUDY OF ETHIOPIA

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Abstract

This paper examines the relation between privatisation and investment. Many previous studies have proved that privatisation has had a direct and positive effect on investment, triggering the economic growth and development which has significantly been observed particularly in the economies of transition. Ethiopia—can also be considered an economy of transition—having spent a two decades of communism, has implemented privatisation programme as a means of attracting a sizable investment including the foreign direct investment. We used data over nine years, 1994/95-2002/03, and applied correlation and regression analysis to find out the effect of the Ethiopian privatisation programme on investment. Our study reveals that the effect of privatisation on investment is robustly negative, owing to the lack of in-depth insight not only into privatisation programme itself, but also into overall reform and structural adjustment programmes. Moreover, the economic and political instability coupled with a weak potential domestic investment are also equally contributing factors. We also affirm that the nation's inherent problems of bureaucracy, commercial framework, and property issues must be overcome to make privatisation programme more fruitful on the aspect of investment attraction. We also suggest that a better market conditions coupled with financial reforms is indispensable to prevent the Ethiopian economy from the further investment sabotage.

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I.   Introduction

Privatisation is adopted by the world economies for different reasons, particularly for economic and political depending upon their perspectives. The manifesto of privatisation in a country normally depicts why privatisation is. Many countries irrespective of their economic status have launched privatisation programme with a different mixture of these reasons. There are many strong evidences that the developed countries have had accelerated privatisation which is equally for economical and political (Esser, 1998; Aharoni, 1988, 1991), whereas in the developing countries, privatisation stands more for economical and the least for political targeting only the economic growth (Donaldson and Wagle, 1995). Economies of transition are, however, a notable exception having political reason at first with an objective of moving from a centrally planned communist system to a market economy.

Many missions are aimed through privatisation: private participation; reduction of budget deficit and external debt; increase of social overheads and reducing the state burden— preferably a withdrawal from the whole to the part in state intervention. Among all these missions, attracting investment particularly from the private investors, which is indispensable for accomplishing both economic and political missions, is considered a golden rule to avoid shortage of capital, to lead an economy towards a sustainable growth and to shift an economy from the centralized to the decentralized.

Privatisation, in fact, brings private investment which has become the most important source of finance for developing countries. The case was entirely different before the 1980s which failed to see and implement privatisation as a tool of macro-economic liberalisation facilitating private investment (Sadar, 1995:2). Since then, however, privatisation has grown strongly and rapidly in a number of developing countries. This development has helped to create an attractive business environment, and has intensified the interest of private investors. Privatisation, moreover, may explore the covered avenues to the extent of benefiting a country including attracting foreign direct investment (FDI) because many studies have already proved that the relationship between privatisation and FDI variables is significant and positive. Sadar, (1995) in his critical study proved it through regression analysis over a cross-section

of thirty-six countries for the period of 1988-93, the co-efficient of which conforms to the result of the Edwards Model[1].

Privatisation effects investment through three mechanisms. First, privatisation itself can serve as a tool for capital flow since private investors spend their sizable wealth for purchasing those state owned enterprises (SOEs), and in terms of further investment such as capacity expansion, modernization and renovation in what they have purchased. Second, any privatisation programme, if well tailored, has already been proved to have a positive correlation with direct investment that comes from the new domestic and foreign investors. This is because of the reason that the privatisation programme itself acts as a media popularising a country as an attractive investment location. Cook and Uchida (2003) justify that if privatisation was sufficiently extensive and had efficiency-inducing effects, it would increase the opportunities for investment in newly privatised enterprises by releasing them from the capital constraints previously faced under public ownership. Moreover, it would reduce crowding out and provide more credit to the private sector. Third and finally, the privatisation proceeds may help the government to reinvest in the existing SOEs—public investment may have the possibility to remain constant—which rules out the notion of withdrawal of the complete public investment.

Thus, privatisation has many connections with investment which is sometimes imponderable. The size, speed, processing, regulatory framework and market creation are the impetus affecting the flow of investment, particularly the speed in which privatisation goes, links positively with investment. None can deny the fact that greater the speed, accuracy and feasibility of the programme, higher will be the investment climate an economy receives. The reason is that the speed is determined not only by the commitment of the government to sell, but also the willingness to buy and invest. The willingness of buyers usually depends how conducive the economic, political, legal and business environment are in a country. But many African countries have failed in this regard, leaving their investment potentiality including FDI unused owing to the poor processing and slow rate of privatisation (Eden, 1996). Not only is investment, but even other benefits of privatisation are neither known nor realised particularly in African countries, which is mainly due to the attitudes of top level politicians and legislators. Miller (1997) questions the credibility of legislators and officers, who obviously impede the privatisation activity as they feel themselves too comfortable to stick to state-run enterprises. He has also found that the pressure coming from their side has mal-proceeded some of the privatisation activities across

the world. It has, therefore, been proved that when privatisation is handled properly, it attracts investment enormously and vice versa.

Ethiopia is considered an economy of transition. The reason is that there has been not more than one and half a decade since the country has clutched out of socialism. The Derge—the Marxist military Government—came in 1974 which ruled the country with more centralized and communistic ideals. After the ouster of the Derge regime, the country in line with other African countries, implemented the privatisation in 1994 with a view to solving its major economic ailments such as weak operating mechanisms of SOEs, economic instability, increasing budget deficit, alarming external debt and steady-increase of poverty rate. Nonetheless, the programme is devised in such a way that it would generate the required revenues through encouraging the private sector's expansion which is, in turn, expected to be guaranteed by a smooth flow of investment. Ethiopia, which is suffering from the low per capita income and high rate of poverty, has also understood the obstacle of the vitality of the private sector's investment, and has had attempted to attract a substantial investment through its own privatisation paradigm.

The purpose of this paper is to critically analyse the relation between the privatisation and investment in Ethiopia, using data over the period 1994/95-2002/03. The study mainly emphasises the changes the privatisation programme in the country brings forth on investment. Not only is private investment, the capital formation from the state's side is also included in this study which is because of the reason that the state of market economy is expected to withdraw its share of investment from the total gross fixed capital formation and possibility of re-investing in the existing SOEs, causing a chance of equilibrium. The next section outlines the methodology adopted for the study which is followed by the third section, analysing the privatisation magnitude, and its impact on the sample macro variables as a pre-test to empirical analysis of investment. The fourth section attempts to analyse empirically the effect of privatisation on investment. The final section provides a summary and thus, concludes the study.

2. Methodology of the study

Data was collected from the Ministry of Finance and Economic Development (MoFED), Ethiopian Investment Commission (EIC), Ethiopian Privatisation Agency

(EPA) and also from the development reports and data bank of the United Financial Institutions such as the World Bank and the International Monetary Fund (IMF). The privatisation for this study implies only the privatisation of SOEs, but not real estates and lands. The study used data over nine years, 1994/95[2]-2002/03 which is referred to privatisation period in this study. This study applies regression analysis with a help of various functional and policy variables that may contribute to the investment potentialities of a country. A regression model, which is explained with more details in section V, is developed using the perspectives of the heterodox model, which does not conclude that the non-significant variables necessarily imply that the hypothesized causal links are invalid (Weeks, 2001). Correlation is applied, preceding the regression analysis, to examine whether the privatization has got any linear relationship with some of the important macro-economic variables. Section VI concludes with some remarks.

3.   Ethiopian privatisation programme – An overview and analysis

The Ethiopian Privatisation Agency was established in February 1994 by proclamation No. 87/1994, which was made in accordance with Article 9 (d) of the Transitional Period Charter. Since then EPA is the lead-agency in carrying out the process of privatisation of SOEs. A Board of Management, consisting of five permanent members, who are designated by the government and a General manager, administers the agency. The agency is directly accountable to the Prime Minister Office in all matters. In addition to this, the chairman of the board of the enterprises under privatisation and one of the representatives of workers in that board participate as non-voting members (TGE, 1994). According to the latest proclamation No. 146/98 which was issued in December 1998, EPA is committed to attaining objectives such as: generating revenue required for financing development activities undertaken by the government; changing the role and participation of the government in the economy to enable it to exert more effort on activities requiring its attention; and promoting the country's economic development through encouraging the expansion of private sector (GoE, 1998). In addition to the powers and duties vested under proclamation No. 146/98, EPA is also conferred, under Proclamation No. 110/1995 and its amendment proclamation No. 193/2000, the power to investigate

and decide on claims of ownership in respect of properties confiscated in extra-legal manner through directives as well as through written or oral orders.

Measuring the Ethiopian privatisation

Measuring the privatisation is the most crucial task before assessing its impact on any variable which may be either economic or social. No doubt, the privatisation proceeds are normally considered to judge as to how much the scale of privatisation is in a given country. But, it would not reveal the real magnitude of privatisation unless it is related to the output of the country. Keeping this in mind, the privatisation variable used for this study is measured as the annual privatisation proceeds as a share of gross domestic product (GDP) of a particular period which is almost in the same line with privatisation as a variable used by Cook and Uchida (2003) and Plane (1997), who also used the cumulative privatisation proceeds as a share of average GDP for their cross country study.

Data set for the Ethiopian privatisation is summarised in Table 1. It indicates that Ethiopia has privatised two hundred and seventeen enterprises over 1994/95-2002/03 which includes thirteen restitutions taken place in the country as an outcome of political change. Out of these, 67 percent accounts for small trade businesses and hotels, followed by food and beverage industries. It has yielded so far USD432.1 million.

Table 1: Magnitude of privatisation transactions, 1994/95-2002/03

Year	No. of Privatisations	Privatisation Proceeds (PP) (USD Millions)	GDP (USD Millions)	PP/GDP (In Percentage)
1994/95	14	29.54	5,779	0.51
1995/96	116	51.46	6,393	0.8
1996/97	26	18.72	6,725	0.28
1997/98	9	193.1	6,647	2.91
1998/99	21	89.12	7,067	1.26
1999/00	16	45.87	7,451	0.61
2000/01	11	2.97	8,106	0.04
2001/02	1	0.76	8,326	0.009
2002/03	3	0.56	6.638	0.008
Average	24	29.54	6277	0.21

Source: EPA (2003) and World Bank (2004)

Privatisation in Ethiopia, which was started with fourteen maiden-transactions, contributed on an average USD 29.54 millions a year, and the volume rose up to USD 51.46 millions in the following fiscal year 1995/96. Privatisation proceeds collected during the first phase, 1994/95-1997/98 were more lucrative than the second phase, 1998/99-2002/03. Of the total proceeds, 88.57 percent were collected during the first phase which is a good sign of progress, where as, in the second phase, it was only 11.43 percent which shows a poor show of the privatisation of the country. Thus, the earlier phase was considered a boost due to the proceeds received during the fiscal year 1997/98 which was the peak moment in the Ethiopian privatisation history that yielded USD 193.1 millions, constituting 45 percent in the total proceeds collected during the privatisation period.

Having observed these ups and downs, it is measured that there was a high degree of uncertainties on privatisation proceeds—measured by the standard deviation (σ = 0.88) of the flow of privatisation proceeds as a share of GDP—fluctuating highly during the study period. It is distressing to note from the findings that PP/GDP has not reached a three percent figure over the period. The only impressive year was that 1997/98, bagging a two percent PP/GDP due to the sale of a mining enterprise— the most expensive sale ever in the Ethiopian privatisation history. Following this, 1998/99 showed a 1.26 percent of PP/GDP ratio. Except these fiscal years, others were disappointed ones. Hence, the average PP/GDP during the study period was too little, accounting 0.21 percent which falls the lowest amongst those poorly performing countries. Not only was it too little from the country analysis, but also a meagre from a cross-country analysis. Nellis (2003) finds that the size of privatisation in the country over the period constitutes only 4.7 percent of the total sale proceeds received in the whole African region.

Privatisation and its effect on macro-economic variables

The magnitude of privatisation, which includes the total flow of proceeds, expressed as a share to GDP, has made a direct impact on various variables of economic growth (Yarrow, 1999). To prove this, not many but the relationships between privatisation variable and budgetary deficit in percent of GDP, and openness were examined. The inclusion of these two variables was justified by taking into account of their uniqueness in nature. Budgetary deficit, more of fiscal, which is expected to have a decreasing effect as a result of privatisation, has been ignored in many

studies. Furthermore, its effect on investment is enormous as it is considered an important factor for crowding out that increases the public sector deficit, resulting in the reduction of private sector investment.

The openness—otherwise called as the worth of international trade to a nation—is defined as the average of imports and exports, expressed as a share of GDP which is always expected by the result of privatisation a positive and significant effect. Week (2001) cites in his study on macro-economic policy for growth that the share of imports and exports is assumed to be functions of the real exchange rate. It is further noted from his heterodox model that the import share increases with the rate of growth, and holding the exchange rate constant, export rise with an improvement in the terms of trade boosting further investment.

Figure 1: The correlation between privatisation and government budget deficit
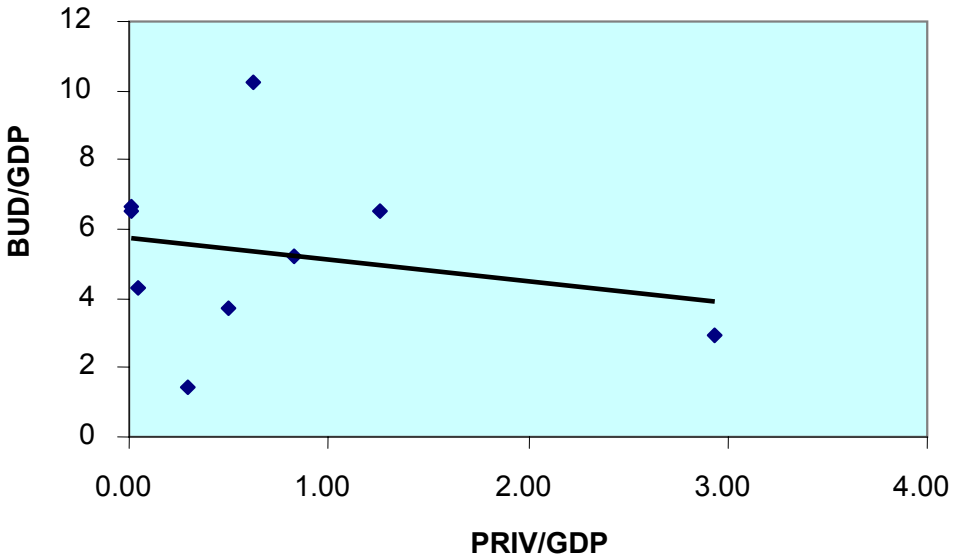
Source: World Bank (2004) & EPA (2003)

The result shown in Figure 1 indicates that there is no correlation between the privatisation variable and the budgetary deficit. A test of co-efficient of correlation shows that there is a weak correlation found between these two variables (r = -.224). It can also be explained that there is a little five percent variation (r^2 = 0.05) in the budgetary deficit by the variation in the privatisation variable. Hence, it may be said that the privatisation in Ethiopia had no impact on the budgetary deficit which is one of the high fiscal determinants deciding the inflow of investment, particularly public investment.

Figure 2: The correlation between privatisation and openness
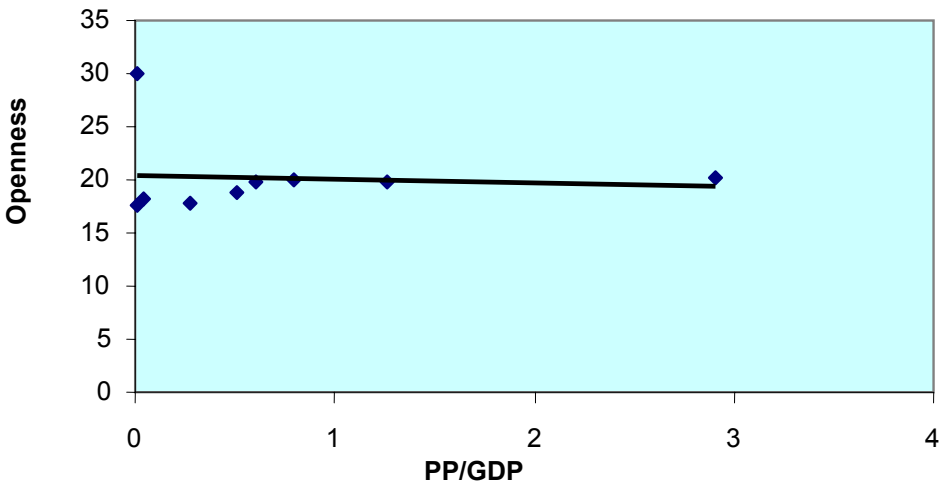
Source: World Bank (2004) & EPA (2003)

The same test is applied on the openness of Ethiopia, the result of which as shown in Figure 2, is as same as the budgetary deficit, proving that there is no correlation between the privatisation variable and openness(r = -0.099). The variation on the

openness could be explained much less than one percent (r^2 =0.0098) by the privatisation variable. It is proved by the findings that the average openness over the period was less than 20 percent which indicates a poor achievement because a country with not more than 20 percent of openness is considered a poorly performed one in the current globalised environment. Nonetheless, openness may not be a sole determinant indicating development because some of the developed countries including USA that pursues their economy with less openness (Baumol & Alan, 1997; 28), but their affluence are always guaranteed by their fiscal and monetary viability which is totally a different case in Ethiopia.

The foregoing discussion and analysis show that the privatisation was too slow and small, coupled with poor processing, to acquire the minimum advantages of privatisation which have been gained in the rest of the developing world. It is also evidenced that the impact of privatisation on fiscal deficit and openness is very fragile, causing a first-degree doubt about the conduciveness of the privatisation paradigm towards investment.

4. Ethiopian privatisation model and its relativity to investment

Creating and improving the investment climate is a top priority for the modern world, particularly for the developing African countries because investment is considered an engine for economic growth, and even for poverty reduction in the long run. The task of attracting a sizable investment in this regard for many African countries is indispensable, and should be pursued multifaceted that investment leads not only to a simple growth but also creates sustainable jobs and opportunities for citizens and entrepreneurs. In this broadest context, investment provides the mechanisms needed to finance the growth and development of any economy (Gitman and Joehnk, 1988: 4). But what has happened to many African countries is that they have drained their exchequer, and lost their financial and budgetary charm in such a way that they can neither invest for their state business ventures nor spend for the welfare of the people. The best alternative—may be the last alternative—is attract private investment.

The investment climate can be achieved through different means. Among all means, privatisation plays an important role either directly or indirectly. Privatisation gives a dual effect to the investment climate: one is that the sale proceeds comes as the private investment as well as revenues to the government; and second is that privatisation as a process creates a favourable condition for attracting investment during its operation. Such conditions include the development of local capital markets, devising a good regulatory environment, de-regulation and liberalisation of markets.

Ethiopia, which is one of the fiscally grave-positioned in the Sub-Saharan, is now an investment driven and felt country where it is believed that investment helps to reduce the cost of goods consumed by poor people, and improves the living conditions of them directly. It, moreover, contributes to an expanding tax base than indirectly enhancing the government's interest in improving health, education and welfare of the people. Ethiopia ranking one of the highest in poverty (World Bank, 2004) and the lowest in the human resource development index (UNDP, 2003) had realised a decade ago the paramount importance of investment after the installation of the new government in 1991. Commencing with the Investment Code Reform No. 15/1992, the government established the Ethiopian Investment Authority (EIA), followed by the establishment of the Ethiopian Privatisation Agency (EPA) in 1994. Furthermore, the Investment Code Amendments in 1996 and 1998 and their re-enactments with the broader objectives in 2002 are worth-mentioning to enrich the Ethiopian investment drive, calling the potential domestic and foreign investors to exploit and develop the immense natural resources (GoE, 2002).

Investment climate after a series of proclamations and reforms provides incentives for development related investment, reduces capital entry requirements for joint ventures and technical consultancy services, permits the duty free entry of capital goods (except computers and vehicles), opens the real estate sector to expatriate investors, extends the losses carried forward provisions, cuts the capital gains tax from 40 to 10 percent, full repatriation for foreign investors and gives priority to investors in obtaining land for lease. Since 1991, any investment that supplements the attempts of creating an openness economy has been well privileged on the payment of duties and other taxes (GoE, 1992). The guarantee is extended to investors that no asset will be expropriated or nationalised except in accordance with the regulations of the government, and upon the payment of adequate compensation.

It is also observed that neither under the Transitional nor the present government, any act of such kind is found to have occurred or is imminent. Encouragement has come from all angles opening the country to the private investors. The foreign participation in the most profitable energy and financial services is, however, restricted, posing obstacles to the privatisation and investment climate.

Table 2: Investment and its share in GDP, 1994/95-2002/03

Year	Gross Public Investment/ GDP (%)	Gross Private Investment/ GDP (%)	GDI* or GFCF/GDP (%)	FDI/GDP (%)
1994/95	7.5	8.9	16.4	0.14
1995/96	7.5	9.4	16.9	0.16
1996/97	8.3	8.7	17.0	0.42
1997/98	7.4	9.8	17.2	3.22
1998/99	7.9	8.9	16.0	0.47
1999/00	5.8	10.7	14.2	0.68
2000/01	8.5	9.3	18.0	0.25
2001/02	11.5	9.0	20.2	0.90
2002/03	Na**	na	20.5	1.13
Annual Average	7.92	9.32	17.28	0.51

Note: *Gross Domestic Investment (GDI) and Gross Fixed Capital Formation (GFCF) can be interchangeably used ** Not available
Source: World Bank (2004) and MoFED (2004)

Table 2 shows the performance of gross domestic investment— public and private— and foreign direct investment during the privatisation period. It indicates that there was a considerable share of private investment in the total GDI, comparing to the public investment. Although the difference of annual average growth rate between the public and private investment was too narrow, the achievement on the private investment cannot be underestimated. The reason is that the country, which transits itself from the socialism to capitalism, finds always difficulties to withdraw its stake from the business in a short period of time. And also, the withdrawal of state intervention from the economy has carefully been carried out in the country which is contrary to those Latin American and Eastern European Blocks where the withdrawal was fast and vast. To measure the flow and size of investment represented by the

public, private and FDI, a comparative analysis is made between pre-privatisation and post privatisation period.

Table 3: Investment performance before and after privatisation (Average Annual Growth)

Investment Flows (as a share of GDP)	Pre-Privatisation Performance 1986/87-1993/94	Post Privatisation Perforance 1994/95-2002/03
GFCF	10.37	17.28
Public Investment	5.57	7.92
Private Investment	3.6	9.32
FDI	0.12	0.51

Source: MoPED (2003), MoFED (2003), MoFED (2004) & World Bank (2004)

Table 3 provides a summary of the investment indicators for comparison between two different periods, i.e., pre-privatisation and post privatisation periods. The result shows a change in the different investment inflows, but a varying degree. Investment inflow after privatisation is significant since the annual growth rate of GDI and private investment were increased by 66 and 151 percent respectively. The growth rate of public investment which was more downsized than that of private investment and, not parallel during the post privatisation, indicating a declining interest of the state towards dominance. It is also found that FDI as a share of GDP increased but insignificantly from 0.12 percent to 0.51 percent. It is due to the fact that foreign investors are pragmatically more sensitive than the domestic investors to the prevalence of the economic and political conditions which they always see and analyse in a microscopic view because the only reason they invest is to enhance their welfare, whatever they perceive it to be (Ambrosio, 1976: 15). Nonetheless, the meagre flow may have its own share in increasing GDI on a fact that there is a direct positive linear between FDI, domestic investment and the growth of GDP (Thirwall, 2004: 592-93).

Whatever be the case, the country's performance on investment comparing to other Sub-Saharan Africa (SSA) was far from satisfactory as the latter were able to achieve 19.39 percent of annual growth rate during the study period. It is important to note that GDI in SSA has been lower than in other developing regions (Griffin, 2001: 21). In a nutshell, the Ethiopian's performance in attracting private investment directly or through

privatisation is not robust compared to its Sub-Saharan neighbours, and very little relative to other developing countries in the world (International Finance Corporation (IFC)/World Bank, 2000) despite the country's investment climate-creating efforts.

When analysing the causes for failure in attracting a significant amount of investment, it may owe to the economic and political instability, weak openness, slow and small privatisation and poor commercial framework. Most significant variables to attract investment are the rate of growth and openness. Economic growth and openness are positively associated which in turn correlate with investment (Alesina, 1998). But the growth was found low and unstable in the country with a lot of ups and down and uncertainties (see annex: Table 3A) amidst a significant increase of the output during the privatisation period and so did openness. Bräutigam (1998) proves in his empirical study that if there is difficulty in maintaining macro-economic stability, it will lead to a sharp decline in the investment. The inflows of investment are thus a consequence of successful development, not a cause of it. A weak capacity and poor entrepreneurial attitude of the locals, coupled with the processing constraints, may also be the reasons for the poorer show of privatisation and capital accumulation. No doubt, the capacity to purchase and invest primarily correlates with saving pattern, but it was, however, a soothing effect. Gross domestic savings as a share of GDP over the first phase of privatisation accounted for 7.64 percent, which was perhaps declined to 3.52 percent over the study period (World Bank, 2004). The annual average real interest (lending) rate, which was 10.39 percent over the period (MoFED, 2004), was considered a moderate rate for the borrowers. Inflation found over the period was moderate, recording 3.01 percent. However, it fluctuated highly and had risen to even 15 percent in 2002/03 which might cause a low profile for those potential investors to make long term investment decision leading to a lower rate of capital formation. On the other hand, such conditions develop a pattern of investment biased in favour of projects with a quick pay off (Griffin, 2001: 17). Nonetheless, a mild inflation, up to 5.8 percent, is positively beneficial for growth (Thirwall 2004), particularly in developing countries.

The war with Eritrea in 1998 has, however, caused a lot of damage to the Ethiopian investment climate, impinging investors' attitudes towards investing. The war— it is though now diluted—coupled with a sort of uncertainty in the economic and regulatory policy have been persisting as strong obstacles that still works against the privatisation and investment of the country. Ethiopia, which is with a poorer market potentiality and high risks associated with the security of property rights and poor

consumer preferences, should over-perform to convince investors to receive a steady flow of investment. The need of such task is very urgent due to the following reasons: Land issue is the most haunting one in the country since the investors can buy only the factory infra-structures and business, but not the land. Many existing as well as the potential investors were not at ease on land issue which is found to have adversely affected their further investment on modernisation and expansion. One of the investors during the focal group discussion uttered that "*much to disgust is the land of the enterprise; my balance sheet looks so deserted without any value of land*". Furthermore, many investors who see the country a poorly judiciary country, where several cases of properties confiscated by the previous regime in an extra legal manner remains unsettled (Price Waterhouse, 1998). Although concrete efforts are taken, the judiciary system still operates in a rudimentary stage that many judges lack the commercial knowledge. Fear among the foreign investors still exists despite the country signed the World Bank treaty the "International Convention on Settlement of Investment Disputes between States and Nationals of other States" (ICSID).

Above all, micro problems such as administration of tax rates, electricity, customs and trade regulations, corruption, anti-competitive or informal practices and commercial and regulatory uncertainty have been found as major hindrances in attracting investment inflows. Tax rates and its administration are the most dislikeable ones to the potential investors (Investment climate Survey, World Bank, 2002). The survey, which was conducted in the country, found that the commercial conduciveness and infra-structure and service facilities existing in the country were rated poor by the investors and firms. Corruption and diseases prevail—which are though found everywhere, particularly in all developing countries—but economic isolation (Sach, 2005) is the special phenomenon in the African continent. Ethiopia is no exception to this isolation.

5. Empirical analysis of the Ethiopian privatisation on investment

We have made an attempt to bring empirical evidence of the Ethiopian privatisation on investment, using the heterodox growth model found in Weeks (2001). The model is constructed with a view to analysing the effect of privatisation on the total

investment (GDI+FDI). The model includes the basic macro relationships: GDP growth, savings, inflation, aid, real interest rate and privatisation. Of these six variables, real interest rate and privatisation are policy variables.

$[I/Y]t = b_o + b_1 [y] t – 1 + b_2 [S/Y]t + b_3 [p]t + b_4 [A/Y]t + b_5 [r]t-1 + b_6 [PRIV/Y]t + u$

Where,

   $[I/Y]t$ = Investment/GDP (Share of Investment in GDP)

   $[y]t –1$ = GDP growth, $[S/Y]t$ = Savings/GDP, $[p]t$ = Inflation Rate,

   $[A/Y]t$ = Aid/GDP, $[r] t-1$ = Real Interest rate

   $[PRIV/Y]t$ = Privatisation Proceeds/GDP and u = Error term

In the above equation, growth rate of output, lagged one period, $[y](t – 1)$ indicates that investment is assumed to respond to changes in output in the previous period. The inclusion of growth rate of GDP as an independent variable in the regression can be justified that the causality runs from growth to investment and not vice versa (Barro and Sala-i-Martin, 1995). It is further assumed that inflation [p] has a negative effect on the private sector element of investment, by fostering a short-term preference for non-productive investments with a rapid turnover (Weeks, 2001:58).

In addition to the aforementioned variables, aid or external assistance [A/Y] is also added to this model with the implication that it reduces the public investment. The inclusion of external assistance is to test for the possibility that aid decreases savings by reducing the pressure for governments to increase public sector revenues (Weeks, 2001:58-9). Pierre et al. (2005) disagrees it by their findings that there is a link between aid, particularly non-food aid and public investment. Savings as a share of GDP (S/Y) and the real interest rate of lagged one period [r](t-1), a policy variable that influence each other are included as variables which determine not only the major portion of investment, but also are strongly influenced by the available investment opportunities (Griffin and Icknowitz, 2001). Privatisation variable (PRIV/Y), which is the study variable assumed to have inflated the inflows of investment, is inducted as an explanatory variable in the model.

The results of the effect of privatisation on investment, which are tested at 5 percent significance level, are presented in the Table 4. Any result obtained from this regression that exhibits a significant level of multi-collinearity (that is, a regression showing that a variance inflation factor (VIF) is greater than 10) is discarded from

these results. The performance of model is impressive, not because of high coefficients, but because of significant results on most of the explanatory variables. The empirical findings in the model underscores the fact that privatisation is robustly negative on the investment of the country. The result is not surprising as the privatisation programme in the country has suffered a serious setback owing to the weak institutional framework, poor processing, small size and slow pace. Moreover, the economic reforms in general, which are supposed to supplement or facilitate the privatisation, are not up to the mark. Such flaws, as seen in the previous discussion, are found ample on tax rates and its administration, property rights and commercial framework in the country.

Table 4: Effect of privatisation on investment of Ethiopia, 1994/95-2002/03

Dependent variable: Share of investment in GDP

Method: OLS (Ordinary Least Squares)

Variable	Co-efficient	Std. Error	T-statistic	Significance
Constant	2.003			0.073
[GDP]t-1	0.336			0.381
[Saving/GDP]t	1.088			0.127
[Inflation]t	1.202			0.194
[Aid/GDP]t	0.306	0.230	8.691	0.316
[Real Interest Rate]t-1	1.318	0.030	1.467	0.179
[Privatisation/GDP]t	-1.111	0.028	4.966	0.009
		0.029	3.172	
R	0.993	0.023	1.843	
R^2	0.986	0.043	3.461	
Adjusted R^2	0.905	0.009	-6.759	
F-statistic	12.067			
Significance (F-statistic)	0.217			
Std. Error of the Estimate	0.03075			
D/W	3.165			

Note: All Variables in the Logarithmic form

A positive but statistically insignificant result is obtained for GDP which is in contrary to the outcomes of many developing countries where it has had a significant impact on the investment (Weeks, 2001). This result may be justified from the point that the country failed to stabilise the economic growth despite its moderate achievement on the growth rate over the privatisation period. Theories of economic growth gives its

own practical literature that economic growth is not simply an increase of productivity over a period, but it is concerned with the long run trend rise in output rather than its fluctuation (Pentecost, 2002). So, it can be said that a country cannot take advantage of investment if there has been instability despite a growth.

The result, moreover, indicates that savings is positive, and statistically more significant amidst a poor rate of saving performance in the second phase of privatisation. It may be understood that the chances of fully utilising a limited available savings is not ruled out in the countries like Ethiopia where the expenditure pattern of the people is small and poor. Such expenditure pattern may ensure a high degree of savings accumulations despite its limited size. Furthermore, with whom the savings is that which matters a lot. If most of the savings were with the people who venture, and have an interest for business, the savings may carry a high rate of investment convertibility.

Aid is positive, but its non-significance to investment is observed despite a lesser uncertainty of aid measured at 3.83 (14.66 percent of variation) standard deviation over the period (see annexure Table 3A). The result proves that that aid reduces pressure for the government to increase public sector revenues. It is due to the reason that those countries, particularly African countries, which receive a substantial portion of aid, create a kind of lethargic attitude toward increase of further investment. This argument can be substantiated in this study that the public investment over the privatisation period was relatively decreased against private investment (see Table 2). Nonetheless, the withdrawal or reduction of the state role may also have share over the decline in public investment.

The above result on inflation is strongly significant on the country's investment climate. This can be attributed to the reason that the inflation has been found to be low profile over the privatisation period, and many private investors are assumed to have invested on those short-run and non-productive investments. To them, the effect of inflation is secondary. When the result of interest rate—an important variable on the investment efficiency—is interpreted, it shows a positive effect on the investment. It is absolutely true in the Ethiopian case because the rate over the period was positive and moderately high despite its instability in nature. Griffin (2001) finds that a moderate high rate of interest is essential to strike a better equilibrium between the risks and demand of the investors. Furthermore, high inflation, if it is expected, need

not hurt lenders as long as the lenders can adjust the nominal interest rate they charge to reflect the expected inflation role.

6.   Conclusion

The analysis has shown that privatisation has contributed negatively for the investment of the country, suggesting the country to review the whole economic reforms which are found to have failed to create attractive incentives for investment. Privatisation should be viewed, not as an end itself, but as part of a broader programme of reforms. If the reform measures fail, privatisation cannot stand alone to succeed. Hence, it can be said that a well tailored and user friendly reform policy with high clarity and transparency is a pre-requisite for converting privatisation programme successful.

Revealing the negative effect of GDP on investment, empirical model used by this study suggests that the country needs to maintain macro-economic balances pragmatically rather than ideologically. As far as the export earning is concerned, the country needs to build its export capacity at the earliest, and the same time to improve its production capability of the basic raw materials required for its industry. It is, therefore, assumed that had the country enjoyed a comfortable macro-economic stability and a high degree of openness, it would have received a significant investment from the domestic and foreign investors. Aid contributed insignificantly, recommending the country to choose the aid substitution economy. Depending on aid cannot be considered a policy, but a life saving instrument which is preferably used during the exigencies only. It should also be noted that total aid allocations have been falling rapidly, and it is unlikely that this declining trend would reverse.

Many researches into the investment show that cost-structures, differential returns, market growth and the institutional characteristics of the country are the most important determinants, but they are yet to come to be lucrative in the country. Investors wishing to invest do always look for a favourable trade and investment regimes, good infrastructure, property rights, economic and political stability and an educated and committed workforce. Above all, the major investment incentives, particularly tax concessions need to be reformed to the extent that it should create business friendly conditions. It should also be noted that among all types of investment flows, FDI is considered an important input for the enormous gross domestic investment on which the country greatly failed. Foreign investors need to be

encouraged and handled diligently as the discussion and empirical evidences in this study prove that FDI can often be a catalyst for domestic investment and it may play a significant role in generating positive spill over effects, bringing new technologies and management and marketing skills contributing to economic growth in developing countries

The economic isolation—the common and chronic issue in Africa—and non-existence of securities market especially in this county may also provide a strong explanation for the country's poor performance on privatisation and investment. Capital markets are necessary to the privatisation process because they set the market values of privatised enterprises on an ongoing process and also they force the banking system to become more competitive. Such happenings are little in Ethiopia. It can finally be said that a strong and bureaucratically free economic foundations to attract investment should be realised a first-hand priority. This study may lack a thorough analysis about the dynamics of fiscal and monetary policies such as money supply and exchange rate in relation to privatisation as well as investment. Hence, a further study on these implications is needed to assess the impact on privatisation and investment.

Statistical annex

Table 3A: Descriptive statistics of variables

	N	Range	Minimum	Maximum	Mean	S. Error	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic		Statistic	Statistic
Investment	9	6.3	14.2	20.5	17.38	0.66	1.98	3.93
GDP	9	14.3	-3.7	10.6	4.48	1.52	4.56	20.83
Openness	9	12.4	17.51	29.91	20.20	1.26	3.78	14.25
Savings	9	7.1	0.9	8	4.52	1.01	3.02	9.09
Aid	9	13.6	1.43	15.03	9.01	1.28	3.83	14.66
R. Interest Rate	9	26.05	-4.6	21.45	10.39	2.84	8.52	72.56
Inflation	9	23.5	-8.5	15	3.01	2.66	7.98	63.62
Privatisation	9	2.902	0.008	2.91	0.71	0.31	0.92	0.85
Valid N (list wise)	9							

Table 3B: Correlation between the selected variables

Variables	Investment	GDP	Savings	Aid	Real	Inflation	Privatisation
Investment	1.00	-0.245	0.220	-0.076	0.443	-0.426	-0.704
GDP	-0.245	1.00	-0.144	-0.328	-0.110	-0.279	-0.142
Savings	0.220	-0.144	1.000	0.178	-0.317	-0.068	0.337
Aid	-0.076	-0.328	0.178	1.000	-0.403	0.269	0.231
Real	0.443	-0.110	-0.317	-0.403	1.000	-0.733	-0.459
Inflation	-0.426	-0.279	-0.068	0.269	-0.733	1.000	0.519
Privatisation	-0.704	-0.142	0.337	0.231	-0.459	0.519	1.00

Note:

[1] A model, which was originally used by Edwards, applied to estimate the importance of privatisation as a determinant of FDI in developing countries. On the basis of empirical and theoretical literature on FDI, Edwards selected a set of structural variables he deemed relevant to the decision making process of a foreign investor. He used these variables to estimate the average level of FDI relative to GDP, as well as the percentage share of total FDI, for a cross section of fifty-eight developing countries during 1971-81.

[2] The Ethiopian fiscal year begins on 8th July and ends on 7th July

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AN AFRICAN TYPE "MIGA" AND INFRASTRUCTURE-INDEXED BONDS: POTENTIAL MEANS FOR FINANCING AFRICA'S INFRASTRUCTURE AGENDA

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Abstract

The paper examines the potential role of financing Africa's infrastructure projects with bonds indexed to the project. The paper also calls for the creation of an African Investment Guarantee Agency (AIGA) to support and strengthen the financing of infrastructure projects. The main objective of AIGA would be to provide non-commercial investment guarantees to African and non-African investors, private or public who are desirous of investing in Africa but do not have the appetite for the above non-commercial risks. Using option-pricing techniques, the author shows that an infrastructure indexed bond is equivalent to a regular bond and a short position on an European put option. The cost of AIGA's guarantees and the associated implied risk premium are also derived. The results of the paper suggest that the value of the infrastructure indexed bond increases monotonically as the value of the project it is financing rises. In addition, the market value of the infrastructure-indexed bonds falls as the value of the project becomes more volatile. The rise in the dividend rate on the project is observed to have an adverse effect on the value of infrastructure-indexed bonds. Lastly, the risk premium embedded in a infrastructure-indexed bond contract is seen as a function of the ratio of the cost of the infrastructure-indexed bond guarantee and the present value of the promised payment.

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1.   Introduction

The lack of adequate infrastructure in Africa is perhaps a reason for the continent's economic performance as good and strong infrastructure do support sustainable economic growth and wealth generation. Moreover, in this age of globalization, industries depend more and more on modern and efficient local infrastructure to enhance low operational costs and high quality service.

In Africa and other developing countries, the building and operation of infrastructure is undertaken by governments. However, this trend is changing as the private sector is attempting to get into financing and operation of infrastructure facilities. The demand for private investment has arisen as a result of: (1) the lack of government financial resources; (2) decrease in ODAs for infrastructure projects; and (3) the strong demand for new infrastructure development. Governments of the developing countries are paying attention and are slowly expanding the role of the private sector to implement their infrastructure programmes.

To enhance the participation of the private sector in the financing of infrastructure development projects requires that a sound financing framework be established. Vehicles that could be used to support the financing of projects are the global capital markets. These markets have the depth, maturity, size and the capability of handle complex shocks and therefore have the potential of funding infrastructure projects.

This paper suggests that the infrastructure of Africa could greatly be improved through the issuance of infrastructure bonds. These bonds, it is argued in the paper, could be raised by African countries on the capital markets of the continent. Infrastructure development requires high capital infusion and specific investments, factors that deter the private sector to commit long-term capital. However, by raising the capital required to finance the infrastructure projects from the bond market, financial risks become diversified so as to ensure allocative efficiency.

The paper is organized as follows. Section 2 provides a brief review on the state of Africa's infrastructure. Section 3 provides an overview on the traditional ways of financing infrastructure. Section 4 discusses the pricing of infrastructure bonds. Section 5 argues for the creation of an African Investment Guarantee Agency to support the financing of infrastructure projects. Concluding remarks are made in Section 6.

2.   Africa's infrastructure

In recent years the leadership of the African continent has renewed its interest in achieving full integration of the continent. However, this goal of a united Africa would be very difficult to achieve without physical integration. That this why a key component of the New Partnership for Africa's Development (NEPAD) is devoted to strengthening Africa's weak infrastructure. This section provides a brief overview on the state of the continent's infrastructure and suggestions on how it could be strengthened.

2.1   Transport

Compared to world standards, Africa's infrastructure network is generally very weak. The main mode of transportation is by road, accounting for 90 per cent of urban transport. Yet of the 2 million kilometers of Africa's road networks only about 28 per cent are paved. Moreover, the road density is extremely low, estimated at about 7 kilometres per 100 square kilometres.

The railway connectivity in Africa is also very weak, particularly in central and west Africa. For a continent of size 30 million square kilometers, the rail network accounts for only 89,380 kilometres, translating into 3 kilometres of rail lines per 1,000.

Most of Africa's international trade depends on maritime transport. Yet a great number of the ports are below international standards. The merchant fleet are also very old, with an average age of 19 years as opposed to a world average of 14 years. Africa's air transport networks also needs to be brought to world standards. It is probably easier to fly from an African country to Europe or the US than to fly within Africa. Perhaps the adoption and the implementation of the Yamoussoukro Decision in 2000 could expiate the process of opening up the skies of the continent.

The challenges faced on the continent in the operation of transport include cumbersome customs and administrative procedures, roadblocks, inefficient operators, and inappropriate vehicles, factors contributing to high transportation costs. Transport costs remain very high in Africa, particularly for landlocked countries because of poor infrastructure and weak institutions.

In order to improve the whole transportation network of the continent there is a strong need for the leadership to engage in the promotion and implementation of the infrastructure programmes of the New Partnership for Africa's Development. The short-term action plan proposed by the African Development Bank in 2002 to strengthen infrastructure and services in African countries, to facilitate trade and tourism must be encouraged and immediately implemented. Efforts should also be made by the leadership to construct the missing links of the Trans-African Highway. In addition the facilitation of transport along Africa's major international transport corridors, especially those serving landlocked countries, must be carried out.

The strengthening of the transport system of the continent would not be an easy chore. It would require the total commitment of member countries of the African Union. It would require massive financial support. This calls for a "paradigm shift" from the traditional sources of funds for infrastructure. The leadership may therefore have to turn to other non-traditional methods that would attract private investment in infrastructure. The idea of public-private-partnership projects (PPP) should therefore be embraced by the African leadership.

2.2   Communication

Although there has been some improvements, communication systems in Africa remain very weak. To strengthen regional integration efforts there is the strong need for African countries to modernize existing ICTs. A strengthened ICTs would contribute to growth in trade and financial services as well as reduce the cost of information and linking communities with each other.

In recent years the communications network on the continent has improved significantly, attracting greater investment from local and foreign investors. In most parts of the continent, the growth in fixed line telephone connectivity and mobile telephones services have risen remarkably. Internet use by the population is also up. Despite the improvements made in this field, compared to the past, more needs to be done if Africa is to bridge the digital divide. It is essential the strengthening of the telecommunication sector of the continent would require the convergence of national policies. This would require: the harmonization of market structures; the creation of conditions that ensure the interconnection among operators in different countries; the harmonization of tariff principles; and reducing the costs of telecommunications services.

2.3   Energy

Africa is endowed with a lot of energy resources - oil, coal, hydroelectricity, natural gas, and biomass and other renewable energy sources. Yet these have not been efficiently tapped or underdeveloped. Those that are developed are often located far from the demand centres. The infrastructure - gas pipelines and electricity transmission and distribution networks - needed to move the supply to consumers remain very weak. To ensure a sufficient, sustainable supply of commercial energy it is important the infrastructure is strengthened.

The regional economic communities are increasing their efforts to promote regional power pools and interconnected electricity grids and master plans for regional power development and environmentally benign power sources. Oil and gas pipelines are also being connected from supply points to consumers. These include the Trans-Mediterranean Gas Pipeline linking Algeria to Italy through Tunisia; the Maghreb and Europe Gas Pipeline linking Algeria to Spain through Morocco; the West African Gas Pipeline supplies Benin, Ghana, and Togo with natural gas from Nigeria; the Mozambique-South Africa Natural Gas Project among others. The regional economic communities continue to promote regional cooperation in the development of hydropower resources. The RECs efforts have contributed to countries jointly developing several hydro power generating facilities.

Although significant progress has been made in strengthening Africa's energy infrastructure, substantial investments are still required in order to bring the infrastructure to world standards. Going forward, there is the strong need for the leadership of the continent to encourage cross-border energy trade, the development of regional power pools, harmonization of regulatory policies and investment codes, and engaging in capacity-building activities.

3. Traditional forms of financing infrastructure in Africa [3]

Before arguing that Africa's infrastructure development be financed with infrastructure indexed bonds, it is important that we present a brief discussion on the current form of financing used by African countries. This is important in a number of ways because it contributes to the motivation of the paper. In addition, it allows the recommendation of this paper to be compared with existing methods used by developing, particularly those in Africa, to deal with their infrastructure development needs.

Traditionally, all of the developing economies, including African countries, rely mainly on the World Bank in the financing of infrastructure. The forms of financing offered by the World Bank to the countries include loans, guarantees, equity investments, and political risk insurance. The agencies of the Bank responsible for financially aiding the African countries are: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), together referred to as the World Bank; the International Finance Corporation (IFC); and the Multilateral Investment Guarantee Agency (MIGA). *What are the functions of these agencies and what contractual arrangements do they reach with developing countries in the development of their infrastructure?*

3.1 Loans and Guarantees by IBRD

The World Bank, through IBRD and IDA, finances both public and private sector projects. IBRD supports middle-income developing countries while the IDA provides assistance to least developed countries. The financial assistance given by the World Bank (IBRD and IDA) is general in the form of loans. However, IBRD has provided limited forms of guarantees to support infrastructure projects undertaken by some of countries. Governments sometimes use the IBRD and IDA loans to finance equity, guarantees, and other forms of financial support. In the next part of this section we provide examples to explain how the World Bank supports infrastructure projects in developing countries.

IBRD charges interests on its loans at a few basis points higher than those charged

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[3] This section relies heavily on materials on the website of the World Bank (www.worldbank.org). The reader is referred to this site for an in depth discussion on this subject matter.

to AAA-rated bonds. The loans could be contracted in two forms. One form is where, for example, IBRD lends directly to a consortium constructing a super highway and, as required by IBRD's Articles of Agreement, the loan is guaranteed by the host country to IBRD. The second contractural arrangement would be the case where IBRD would lend directly to the host country, which in turn would loan to a public or private company. This contractural arrangement is therefore made up of a loan agreement between IBRD and the host country and a subsidiary loan agreement between the host country and the public or private company.

The guarantees offered by IBRD for private lending takes two forms: a partial risk guarantee protecting lenders against payment defaults arising from breaches of sovereign contractual undertakings to a project, and a partial credit guarantee covering certain debt service payments against all risks, typically for later maturities. IBRD's Articles of Agreement requires that all its guarantees are counter-guaranteed by the host country.

The provision of a partial risk guarantee by IBRD for private lending takes the following structure: (a) loans by commercial lenders; (b) host country contractual undertakings to the public or private company that would support the infrastructure project; (c) an IBRD partial risk guaranteeing loans against private investors debt service defaults arising from host country breaches of contract; and a host country counter-guarantee to IBRD.

To further explain the partial risk guarantee let us take a consortium of public-private-partnership in the construction of a super highway in a developing country and IBRD agrees to provide partial risk guarantees for the project. The host country would then undertake to make compensatory payments to the consortium should there be a specified contractual defaults by the sub-contractors of the project. The IBRD guarantee protects lenders to the consortium against debt service defaults resulting from the host country's breach of this obligation. The host country in this case should have a counter-guarantee to IBRD.

Alternatively, IBRD could provide a partial credit guarantee to the commercial lenders to protect them against default by the consortium on debt service payments. This structure would involve the same basic agreements as the partial risk guarantee, but would not require contractual undertakings from the host country to the consortium.

3.2   IBRD financing in IDA countries

Generally, IBRD does not finance projects in poorer developing countries. This is because these countries are not in a position to pay IBRD's market lending rates as their credit worthiness is very low. These countries receive only concessionary IDA lending (referred to as IDA-only countries).

In exceptional cases, IBRD has offered loans for certain projects in IDA-only countries that generate substantial foreign exchange revenues (referred to as enclave projects). In addition, these projects typically include an offshore escrow account for debt service payments and a guarantee to IBRD from a creditworthy third party, such as the project's private shareholders. Enclave projects could also be eligible for an IBRD guarantee.

3.3   IDA loans

IDA offers fairly favourable loans to poor developing nations. These loans are made generally on very good concessional terms, with maturities of thirty-five to forty years and a 0.75 percent interest rate. IDA loans to a host country, which in turn lends the funds to the company responsible for developing the infrastructure project. In the example used in the previous section, IDA would support the development of the super highway by entering into a loan agreement with the host country. The host country would then loan the funds to the Consortium backed by a project agreement between the Consortium and IDA.

3.4   Equity Financing

IBRD and IDA do not invest directly in infrastructure projects of developing countries. In other words either of the two agencies hold equity stakes in projects carried out in the countries they loan to. However, either of the agencies could provide loans or credits to a country to finance its equity investment in an infrastructure project. In the example being used in this Section, the host country could obtain an IBRD loan or an IDA credit to finance an equity stake in the Consortium developing the super highway. In this case, IBRD would have a loan agreement with the host country. The host country would then have a subsidiary loan agreement with a parastatal company which would then use the funds to have an equity stake in the Consortium.

3.5   Financing guarantees and debt refinancing

IBRD and IDA also provide loans to countries to finance guarantees offered by host countries to investors who are undertaking infrastructure development. For example, a country could finance a loan guarantee issued by an independent guarantor mandated by the government with a loan from IBRD or IDA. The structure of such an arrangement would involve IBRD or IDA providing a loan to the host country. The host country would then use this funds, through a parastatal agency such a financial intermediary, to provide guarantees to commercial lenders (banks) who have loan agreements with the project developers (the Consortium in our example).

3.6   Financial intermediaries, investment funds, and facilities

In some cases IBRD and IDA do lend to a host country to finance financial intermediaries or an investment fund or other facility that would provide loans, equity, guarantees, take-out financing, or other financial support for special projects. An example is where IBRD provides loan to a host country to finance a government-sponsored fund that lends to selected private sector infrastructure projects.

3.7   IFC's loans, loan syndication, equity, and quasi equity

The IFC generally offers loans or holds equity and quasi equity investments in private ventures only. Unlike the World Bank, IFC financing requires no direct government guarantees of repayment. Loans made by the IFC attract market interest rates. To hedge against currency transfer and other political risks to lenders, the IFC provides an extensive loan syndication program (known as B-loans) by extending its lender-of-record umbrella to participating banks. B-loans are always coupled with loans funded from IFC's own resources (A-loans).

In the construction of the supper highway example, IFC could have an equity stake in the Consortium with an A-loan and a syndicated B-loan. At the same time it could choose to have participation agreements with syndicated commercial lenders who are providing loans to the Consortium.

3.8   MIGA's political risk insurance

MIGA provides guarantee for foreign equity and related debt investments to cover unforeseen political risk. The coverage are for war and civil disturbance, expropriation, and currency transfer risks. MIGA also offers guarantees for breach of contracts which the host country prevents claimants to seek relief through judicial courts. In our example, MIGA insurance would be provided to the Consortium developing the super highway.

3.9   Group support

The World Bank also provides financial assistance to infrastructure projects supported by all its agencies so as to encourage foreign direct investment (FDIs). In the example of the construction of the highways, the Consortium could receive support from the World Bank through IFC equity (A-and B-loans), MIGA political risk insurance, and an IBRD partial risk guarantee.

4.   The pricing of the infrastructure-indexed bonds

Section 3 has provided a brief discussion on World Bank financial assisted programmes for developing countries.

Option pricing techniques are very flexible such that they can easily be used in the valuation of most financial instruments. In this section, we use the technique to suggest a pricing formula for the infrastructure bond. It also assumed under the contractual framework that the bond-holders would take over the project if the borrower defaults on the payment. Although the future value of the project is not known, we assume that all parties have full knowledge of the initial market value of the project. Under this assumption, the borrower will rationally default at any time during the contract period if the market value of the project is less than the outstanding balance of the infrastructure-indexed bond.

To finance the infrastructure project in some part of an African country or in a region of the continent, we assume that the government of the country in question or a regional economic community would invite private sector participation in the financing

of the project through the issue of bonds linked to the project. Let us assume that the face value of the Bond is *F* and the market of value of the project is *V*, then the expected value of the infrastructure-indexed bond at the end of the contract is:

$$\text{Min}[F, V] \tag{1}$$

We make a further assumption that embedded in *F* are all the necessary costs incurred by the bond-holders upon defaulting of the contract.[3]

In addition to the above assumption, we shall make the usual assumptions for modelling continuous-time asset-pricing models: (i) assets are traded in a frictionless or perfect market, where there are no taxes, transactions costs, or short sale restrictions, and all assets are perfectly divisible; (ii) trading of assets is done continuously; and (iii) the value of the project follows a continuous-time diffusion process. For reasons of parsimony, the interest rates are also assumed to be deterministic.

Lastly, we assume that lenders and borrowers have the same information on, and identical beliefs in, the prospects for the project. Both therefore agree on the diffusion process followed by the value of the project. Let *V(t)* be the market value of the project and its stochastic process be of the form:

$$\frac{dV}{V} = \left(\alpha_v - \frac{\delta}{V} \right) dt + \sigma_v dz_v \ , \tag{2}$$

where is a standard Brownian motion, with mean zero and variance *dt*. In equation (2), it is assumed that the project pays out dividends at a constant rate, δ. The diffusion part (the second part on the right-hand side) of equation (2) makes the instantaneous rate of appreciation of the project uncertain. Hence, the expected rate of appreciation of the project is ($\alpha_q - \delta/Q$).

4.1   Valuation of the infrastructure indexed bond

Since the bond is indexed to the market value of the project then the market value of the bond at any given time is $B(V, t)$. Using the Ito's lemma, the drift and the diffusion of the bond could be expressed as:

$$dB = B_v dV + \frac{1}{2} B_{vv}(dV)^2 + B_t dt \; , \tag{3}$$

which, upon simplifying, yields:

$$\frac{dB}{B} = \alpha_b dt + \sigma_b dz_v , \tag{4}$$

where

$$\alpha_b = \left[\frac{1}{2}\sigma_v^2 V^2 B_{vv} + \left(\alpha_v - \frac{\delta}{V}\right) V B_v + B_t + c \right] / B , \tag{5}$$

$$\sigma_b = \frac{\sigma_v V B_v}{B} . \tag{6}$$

and c is the instantaneous coupon rate paid to bond holders.

Proposition 1: *Based on the assumptions and the framework proposed the partial differential equation governing the infrastructure-indexed bond, which pays an instantaneous coupon rate of c is*

$$\frac{1}{2}\sigma_v^2 V^2 B_{vv} + (rV - \delta)B_v + B_t - rB + c = 0 . \tag{7}$$

Proof:

Standard arbitrage arguments common in the options-pricing literature are employed for the proof. Consider a portfolio, H, made up of a share ω in the project and $(1 - \omega)$ in the bond. The instantaneous return on such a portfolio dH, is:

$$dH = \omega(\alpha_v dt + \sigma_v dz_v) + (1 - \omega)[\alpha_b dt + \sigma_b dz_v] \qquad (8)$$

Rearranging,

$$dH = (\omega\alpha_v + (1 - \omega)\alpha_b)dt + [\omega\sigma_v + (1 - \omega)\sigma_v]dz_v. \qquad (9)$$

H would be a riskless portfolio if ω is chosen such that

$$\omega\sigma_v + (1 - \omega)\sigma_b = 0, \qquad (10)$$

Or

$$\omega = \frac{\sigma_b}{\sigma_b - \sigma_v}. \qquad (11)$$

An investor who holds $\sigma_b / (\sigma_b - \sigma_v)$ units in the value of the project and $-\sigma_v / (\sigma_b - \sigma_v)$ in the bond would earn the riskless rate of return r if there are no arbitrage profits to be made. Hence:

$$dH = r\left[\frac{\sigma_b}{\sigma_b - \sigma_v} - \frac{\sigma_v}{\sigma_b - \sigma_v}\right]dt. \qquad (12)$$

Equating equation (12) with the drift term of equation (9), with the substitution of ω, we have:

$$\left[\left(\frac{\sigma_b}{\sigma_b-\sigma_v}\right)\alpha_v - \left(\frac{\sigma_v}{\sigma_b-\sigma_v}\right)\alpha_b\right] - r\left[\frac{\sigma_b}{\sigma_b-\sigma_v} - \frac{\sigma_v}{\sigma_b-\sigma_v}\right]. \qquad \textbf{(13)}$$

Equation (7), the partial differential equation governing the value of the bond is obtained by the substitution of equations (5) and (6) into equation (13) and rearranging.

An intuitive explanation in the finance literature for the differential equation that summarizes the bond pricing is the following. The first term on the left-hand side of equation (7) captures Jensen's inequality effect coming from the variance of the value of the project. The second term represents the risk-adjusted expected drift of the value of the project. The third term reflects the shrinking time-to-maturity. The last term represents the net flows to the lender.

Proposition 2: *The present value of the bond under the set of assumptions is:*

$$B(V,\tau) = \frac{c}{r}(1-e^{-r\tau}) + Fe^{-r\tau} - P(V,F,\tau), \qquad \textbf{(14)}$$

where P(V, F, τ) is a European put option on the project, V, with constant dividend δV and an exercise price equal to the principal payment, F. The value of the put option is:

$$P(V,F,\tau) = Fe^{-r\tau}N(d_1) - Ve^{-\delta\tau}N(d_2) , \qquad \textbf{(15)}$$

Where

$$d_1 = \frac{\log(F/V) + \left((\delta - r) + \frac{1}{2}\sigma_v^2\right)\tau}{\sigma_v \sqrt{\tau}} \quad,$$

$$d_2 = d_1 - \sigma_v \sqrt{\tau},$$

and N (.) is the cumulative normal distribution function.

Proof:
Rewrite equation (1) as:

$$\text{Min}[F, V] = F - \max[0, F-V]. \tag{16}$$

What equation (16) says is that the value of the infrastructure-indexed bond is equivalent to a regular bond (with face value of F) and a short position on a European put option on the project, with the time left to maturity τ (T-t) and the strike price equal to the final payment of the infrastructure-indexed bond, which by our assumption is the principal, F. The first term of equation (14) is the present value of the stream of coupon payments that would accrue to the bond holder over the life of the bond. The second term is the present value of the face value of the bond. The put option value follows from Atta-Mensah (1992), Merton (1973), and Geske (1979).

Lastly, by performing the relevant differentiations, we find that equations (14) and (15) correspond to equation (7), the stochastic partial differential.

Propositions 1 and 2 indicate that the value of the infrastructure-indexed bond is a function of the value of the project, creating an incentive needed to ensure that the project is carried through. In the next section we perform simple comparative statistics to examine how the factors underlying the pricing formula impact on the infrastructure indexed bonds.

4.2 Properties of the infrastructure-indexed bonds

This section focuses on assessing factors that impact on the value of the indexed-bonds. This is carried out by studying the influence of key parameters on the pricing formula derived in the last section for the infrastructure indexed bonds.

Proposition 3: *The value of the infrastructure indexed bond increases monotonically as the value of the project it is financing rises.*

Proof:
Differentiating equation (14) with respect to Q and using equation (A10) in Appendix A:

$$\frac{\partial B}{\partial V} = -\frac{\partial P}{\partial V} = -(-e^{-\delta\tau}N(d_2)) \geq 0 \qquad (17)$$

Remarks: The result corroborates conventional wisdom, which suggests that the higher the value of the project, the greater the size of the infrastructure-indexed bond, given the same level of project risk. An explanation is that as the market value of the project that the indexed bond is being used to finance increases, the probability that the put call embedded in the bond finishes out-of-money also increases, contributing to the rise in the value of the bond. Vice-versa the fall in the market value of the project reduces the value of the indexed bond, reducing the debt burden of the borrower. This result is very important because unlike the traditional bond whose value remains the same regardless of the value of the project, in the case of the indexed bonds its value is directly linked to the market value of the project.

Proposition 4: *The market value of the infrastructure-indexed bonds falls as the value of the project becomes more volatile.*

Proof:
Differentiating equation (14) with respect to the variance of *V*, σ_v, and using equation (A16) in Appendix A:

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$$\frac{\partial B}{\partial \sigma_v} = -\frac{\partial P}{\partial \sigma_v} = -(\sqrt{\tau} V e^{-\delta \tau} N'(d_2)) \leq 0. \tag{18}$$

Remarks: The result shows that risk-averse investors would be very reluctant to hold the infrastructure-indexed bonds if the project is very risky (measured by the volatility of the market value of the project). In a sense this imposes discipline on borrowers and prevents them from taking up risky ventures as investors are less likely to "bank roll" them. Technically, the rise in the volatility of the market value of the project increases the value of the put option embedded in the indexed bond. This is because a put call has no downside risk, since the value of the put is zero irrespective of how far it finishes out of the money. What the increase in the volatility of the market value of project does is to increase the likelihood that the put option would finish in the money.

Proposition 5: *The value of the infrastructure-indexed bonds rises monotonically with the face value, F, of the bond.*

Proof:
Differentiating equation (14) with respect to *F* and using equation (A21) in Appendix A:

$$\frac{\partial B}{\partial F} = e^{-r\tau}(1 - N(d_1)) \geq 0, \tag{19}$$

since $0 \leq N(d_1) \leq 1$.

Remarks: To explain the results one needs to recall that technically the indexed bond could be decomposed into a regular bond and short position on a put option on the project with a strike equal to the face value of the regular bond. Hence an increase in the principal of the indexed bonds leads to an increase in the value of the regular bond component of the indexed bond and at the same time an increase in the short position of the put option. On net, the indexed bond rises in value because the regular bond dominates the put option. Intuitively, the results means that investors would be

attracted to the indexed bonds if its face value should rise.

Proposition 6: *A tightening of monetary policy has a negative impact on the market value of an infrastructure-indexed bond.*

Proof:
Differentiating equation (14) with respect to the interest rate, *r*, and using equation (A24):

$$\frac{\partial B}{\partial r} = -\frac{c}{r^2}[1 - (1 + r\tau)e^{-r\tau}] - \tau F e^{-r\tau}(1 - N(d_1)) \le 0, \qquad (20)$$

Since $0 \le N(d_1) \le 1$ and given that r and τ are non-negative we should expect [1– (1+ rτ)e$^{-r\tau}$] ≥ 0

Remarks: Intuitively, interest rates bear a negative relationship with the price of a financial asset. That is why asset prices fall with the tightening of monetary policy. The result shows that the increase in the interest rates leads to a decline in the market value of infrastructure-indexed bonds. The results can be explained by the fact that the rise in interest rates reduces the present values of the bond component of the infrastructure-indexed bond and the exercise price of the put option. These factors combine to depress the market value of the infrastructure-indexed bond.

Proposition 7: *The rise in the dividend rate on the project has an adverse effect on the value of infrastructure-indexed bonds.*

Proof:
Differentiating equation (14) with respect to the dividend rate, δ, and using equation (A26):

$$\frac{\partial B}{\partial \delta} = -\tau V e^{-\delta\tau} N(d_2) \le 0. \qquad (21)$$

Remarks: An intuitive explanation of this result is that the rise in the dividend make

ownership in the project more attractive than bearing the indexed bonds as a result the fall in the value of the indexed bonds. A technical explanation is that the rise in the dividend rate increases the value of the put option component embedded in the index bonds. Since the contribution of the put option to the value of the indexed bond is negative a rise in the dividend rate on the value of the indexed bond is negative.

Proposition 8: *The term-to-maturity date has an ambiguous effect on the value of infrastructure-indexed bonds.*

Proof:
Differentiating equation (14) with respect to the term left to maturity, τ, and using equation (A27):

$$\frac{\partial B}{\partial \tau} = ce^{-r\tau} - rFe^{-r\tau}(1 - N(d_1)) - V\delta e^{-\delta\tau}N(d_2) + \frac{\sigma_v}{2\sqrt{\tau}}Fe^{-r\tau}N'(d_1). \quad \textbf{(21)}$$

Clearly, the sign for equation (22) is indeterminate.

Remarks: This result demonstrates that investors are indifferent between holding short-and long-term infrastructure-indexed bonds.

5.   An African Investment Guarantee Agency

The financing of Africa's infrastructure could also be strengthened through the establishment of an African Investment Guarantee Agency (AIGA). AIGA's function could be similar to the World Bank's MIGA but would cater to only investments in Africa, particularly in the area of infrastructure.

MIGA, which was created in 1988, aims at promoting FDIs in developing countries by providing guarantees to investors against non-commercial risks such currency transfers restrictions, expropriation and war and civil disturbance. Since the establishment of MIGA it has provided a cumulative guarantee totalling $13.5 billion, within guarantees in 2004 adding up to $1.1 billion. The membership of MIGA, which is opened to all the member countries of the World Bank, currently stands at 164. In

addition to its investment guarantees, MIGA also offers technical assistance to its members in strategies that contribute to the promotion of FDIs. Its legal wing could be used is settling disputes and disagreements between investors and governments.

5.1 Suggested framework for AIGA

AIGA could have a mission of promoting investments in Africa, particularly in the area of infrastructure development. *Why AIGA and not MIGA?* Despite the its good work in facilitating and promoting FDIs to developing countries, MIGAs focus is very broad and therefore the assistance to Africa could be smaller than what is expected. AIGA, if properly created, would focus only on Africa as its members would be made up of only African countries and charged with the sole task of assisting public or private investments on the continent. This agency is also needed because of the difficulty of African countries face in attracting productive capital for financing projects, as international investors perceive the countries to be of high risk due to political instability and other non-financial risks that have plagued the continent for some time now. Moreover, if it is managed well, AIGA has a potential of generating enough profits that could be ploughed back into the continent's economy.

The main objective of AIGA would be to provide non-commercial investment guarantees to African and non-African investors, private or public who are desirous of investing in Africa but do not have the appetite for the above non-commercial risks. Like those covered by MIGA, these risks could include an investors inability to repatriate funds because of an unstable political environment in a country, war or civil or sectarian conflicts and unlawful nationalization, confiscation and seizure of the investment projects by the government of a host country. The exact definition of risks could be left in the hands of a legal team that would be responsible for carving out the legal text and protocols that would govern the operation of the Agency.

The structure of AIGA should be such that its membership is opened mainly to African countries. However, a small fraction of ownership could go to other countries. Each member would contribute to the initial capital needed to operate the agency plus an agreed annual membership fee. The membership of the Agency would have to agree on the currency of operation. A suggestion is that the currency be convertible in international financial markets. Depending on the financial health of the Agency members could be paid dividends from accrued profits.

The Board of Directors of AIGA could be made up of the Finance Ministers of the African countries who hold membership in the Agency. Representatives of non-African countries who are members could be non-voting members of the board. The Board would be responsible for appointing the President of the Agency. Depending on the structure of the Agency, the Board could appoint a number of vice-presidents. The Board should be empowered to set policies, regulations and rules that would ensure the smooth operation of the Agency. The President is empowered to oversee the day-to-day activity of the Agency.

Under the direction of the Board, the President would approve all guarantee-contracts between the Agency and investors. However, the President must ensure that not all investors receive guarantees. For example, investment that are very risky and have high chance of failure should not be covered so as to reduce "moral hazards" or "adverse selection" bias. In other words the Agency, led by the President, should strike a balance between ensuring the sound financial health of the Agency and the provision of coverage that would attract productive investment to the continent.

In addition to a number of units that must be created to assist the President in running the Agency, AIGA should have a risk management unit. The risk management unit would be responsible for managing all the risk exposures the Agency faces. The unit must be equipped with modern tools, techniques and the best minds in the field to effectively manage all forms of risk. As part of its assignment the unit must be able to determine the actuarial fair premiums each applicant must pay in order to receive a guarantee from AIGA. The unit would in turn invest the premiums on behalf of AIGA in both financial and physical assets. It is very important the President, under the direction of the Board, would have to keep a careful eye on the risk management unit.

5.2   The cost of guarantee

Let us consider a case in which there is a third party that guarantees to pay the lender should the borrower default.[4] This contract, between the borrower and the guarantor, would require that the borrower surrender the project to the guarantor in the event of an infrastructure-indexed bond default. Note that the project could be the assets of the borrower or the value of the project being financed with the infrastructure-indexed bond.

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[4] The Discussion in this section is based on Merton (1977)

Before we provide the pricing formula for the cost of the guarantee, we analyze the pay-offs under various states of the world. On the maturity date of the infrastructure-indexed bond, if the value of the project, Q, exceeds the promised payment of the infrastructure-indexed bond, F, then the borrower pays the lender, F, and keeps $Q - F$. On the other hand, if the value of the project, Q, is less than the promised payment of the infrastructure-indexed bond, F, the third party pays the lender F and takes a loss of $F - Q$, with the borrower receiving nothing.

Proposition 9: *The cost of the infrastructure-indexed bond guarantee is equivalent to a European put option, the underlying asset of which is Q and the exercise price F.*

Proof:
The contractual arrangement suggests that, at the maturity date, the lender will receive the promised payment, F, regardless of the state of the world. Thus, to the lender the infrastructure-indexed bond is riskless. The net receipt for the borrower is *max(0, Q - F)*, with or without a guarantee. The net receipt to the guarantor is *min (0, Q -F)*, which is non-positive. As a result of the guarantee, the borrower receives an additional cash inflow of *-min(0, Q - F)*,or *max(0, F - Q)*. Hence, if $G(\tau)$ is the value of the guarantee to the borrower, then

$$G(0) = max(0, F - Q), \qquad\qquad (23)$$

which is equivalent to a put option. Equation (15) gives the exact formula for evaluating the option.

5.3   Risk premium

In this section, we attempt to derive an expression for the risk premium embedded in the infrastructure-indexed bond contract. To a lender, an infrastructure-indexed bond that is guaranteed by the borrower is riskless. The difference between the yield on an infrastructure-indexed bond that is not guaranteed and one that is guaranteed is a measure of the risk premium.

Proposition 10: *The risk premium embedded in an infrastructure-indexed bond contract is a function of the ratio of the cost of the infrastructure-indexed bond guarantee and the present value of the promised payment.*

Proof:

Let $y(\tau)$ be the implied yield of the debt, F, when there is no guarantee, implying that the present value of the debt is *Fexp(-y(τ)τ)*. With the infrastructure-indexed bond guaranteed, the lender is assured F, which is either paid by the borrower or the guarantor. The present value of the guaranteed infrastructure-indexed bond is *Fexp(-r(τ)τ)*, where $r(\tau)$ is the riskless rate of return. In the absence of arbitrage opportunities, we should expect::

$$G(\tau) + Fe^{-y\tau} - Fe^{-r\tau},$$ (24)

From which the implied risk premium is derived as:

$$\Pi - y - r - -\frac{1}{\tau}\log\left(\left[1 - \frac{G(\tau)}{Fe^{-r\tau}}\right]\right).$$ (25)

Equation (26) gives an expression for the implied risk premium.

5.3.1 Factors influencing the risk premium

In section 3, we showed that the value of the project plays an important part in the determination of an infrastructure-indexed bond contract. In this section, we examine factors that influence the risk premium.

Proposition 11: *The risk premium is negatively correlated with the value of the project.*

Proof:

Differentiate equation (26) with respect to Q:

$$\frac{\partial \Pi}{\partial Q} - -\frac{1}{\tau}\left(\frac{e^{-\delta\tau}}{Fe^{-r\tau} - G(\tau)}\right)N(d_2) \leq 0,$$ (26)

since $N(d_2) \geq 0$ and $G(\tau) < Fe^{-r\tau}$.

Remarks: An explanation for this result is that an appreciation in the value of the project leads to a lesser chance of the borrower defaulting on the promised payment of the infrastructure-indexed bond. The risk premium falls, reflecting the reduced risk of default.

Proposition 12: *The risk premium rises as the value of the project becomes more volatile.*

Proof:
Differentiate equation (26) with respect to σ_q:

$$\frac{\partial \Pi}{\partial \sigma_q} = \frac{1}{\sqrt{\tau}} \left(\frac{Qe^{-\delta\tau}}{Fe^{-r\tau} - G(\tau)} \right) N'(d_2) \geq 0, \tag{27}$$

since $N'(d_2) \geq 0$ and $G(\tau) < Fe^{-r\tau}$.

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Remarks: An increase in the volatility of the value of the project increases the option-value component of the infrastructure-indexed bond. Consequently, the risk of default by the borrower rises, resulting in the rise in the risk premium.

Proposition 13: *The impact of monetary policy on the risk premium is indeterminate.*

Proof:
Differentiate equation (26) with respect to *r*:

$$\frac{\partial \Pi}{\partial r} = \frac{1}{\tau} \left(\frac{Fe^{-r\tau}}{Fe^{-r\tau} - G(\tau)} \right) \left(\frac{G(\tau)}{Fe^{-r\tau}} - N(d_1) \right). \tag{28}$$

Remarks: The results indicate that the impact of monetary policy on the risk premium

is indeterminate. A common view held by market analysts is that an expansionary monetary policy will help reduce risky spreads. Our result, however, indicates that the impact of monetary policy on the risky spread cannot be ascertained.

6.   Conclusion

In this paper, we have examined the potential role of financing Africa's infrastructure projects with bonds indexed to the project. Developing a nation's infrastructure requires massive capital infusion, which the private sector are reluctant to commit to in the long run. However, capital markets have the depth, maturity, size and the capability of handle complex shocks and therefore have the potential of funding infrastructure projects. Hence, a nation could rely on the bond market to raise the capital it needs to finance infrastructure projects. This would ensure diversification of financial risks and allocative efficiency.

The paper also calls for the creation of an African Investment Guarantee Agency (AIGA) to support and strengthen the financing of infrastructure projects. The proposes that AIGA's function could be similar to the World Bank's MIGA but would cater to only investments in Africa, particularly in the area of infrastructure. The main objective of AIGA would be to provide non-commercial investment guarantees to African and non-African investors, private or public who are desirous of investing in Africa but do not have the appetite for the above non-commercial risks.

Using option-pricing techniques, the paper shows that an infrastructure indexed bond is equivalent to a regular bond and a short position on an European put option. We also derive the cost of AIGA's guarantees and the associated implied risk premium. The results of the paper indicate that the value of the infrastructure indexed bond increases monotonically as the value of the project it is financing rise. Moreover, the market value of the infrastructure-indexed bonds falls as the value of the project becomes more volatile. The rise in the dividend rate on the project is observed to have an adverse effect on the value of infrastructure-indexed bonds. Lastly, the risk premium embedded in a infrastructure-indexed bond contract is seen as a function of the ratio of the cost of the infrastructure-indexed bond guarantee and the present value of the promised payment.

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Appendix A: Properties of the Put Option

A1. The value of the put option

In the text, an expression for valuing a European put option was given as:

$$P(V, F, \tau) = Fe^{-r\tau}N(d_1) - Qe^{-\delta\tau}N(d_2), \qquad \text{(A1)}$$

where

$$d_1 = \frac{\log(F/V) + \left((\delta - r) + \frac{1}{2}\sigma_v^2\right)\tau}{\sigma_v\sqrt{\tau}}, \qquad \text{(A2)}$$

$$d_2 = d_1 - \sigma_v\sqrt{\tau}, \qquad \text{(A3)}$$

and $N(.)$ is the cumulative normal distribution function.

A2. The change of the value of the project on the put option

Differentiate equation (A1) with respect to the project value, V:

$$\frac{\partial P}{\partial V} = -\frac{Fe^{-r\tau}}{V\sigma_v\sqrt{\tau}}N'(d_1) - e^{-\delta\tau}N(d_2) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{\tau}}N'(d_2),$$

but

$$N'(x) = \frac{1}{\sqrt{2\pi}}e^{-(1/2)x^2},$$

thus

$$\frac{\partial P}{\partial V} = -e^{-\delta\tau}N(d_2) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{2\pi\tau}}\left[e^{-(1/2)d_2^2} - e^{\log(F/V) + (\delta - r)\tau - (1/2)d_1^2}\right].$$

Substitute equations (A2) and (A3) in the last part of equation (A6):

$$\frac{\partial P}{\partial V} = -e^{-\delta\tau}N(d_2) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{2\pi\tau}}\left[e^{-(1/2)d_2^2} - e^{d_2\sigma_v\sqrt{\tau}+(1/2)\sigma_v^2\tau-(1/2)(d_2+\sigma_v\sqrt{\tau})^2}\right], \quad \text{(A7)}$$

$$\frac{\partial P}{\partial V} = -e^{-\delta\tau}N(d_2) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{2\pi\tau}}\left[e^{-(1/2)d_2^2} - e^{-(1/2)d_2^2}\right],$$

or:

$$\frac{\partial P}{\partial V} = -e^{-\delta\tau}N(d_2) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{2\pi\tau}}\left[e^{-(1/2)d_2^2} - e^{-(1/2)d_2^2}\right].$$

Hence:

$$\frac{\partial P}{\partial V} = -e^{-\delta\tau}N(d_2) \leq 0, \quad \text{since } N(d_2) \geq 0.$$

A3. The change of the variance of the value of the project on the put option value

Differentiate equation (A1) with respect to σ_v:

$$\frac{\partial P}{\partial \sigma_v} = Fe^{-r\tau}\left[\sqrt{\tau} - \left(\frac{\log(F/V) + \left((\delta - r) + \frac{1}{2}\sigma_v^2\right)\tau}{\sigma_v^2\sqrt{\tau}}\right)\right]N'(d_1)$$

$$- Ve^{-\delta\tau}\left[-\sqrt{\tau} - \left(\frac{\log(F/V) + \left((\delta - r) - \frac{1}{2}\sigma_v^2\right)\tau}{\sigma_v^2\sqrt{\tau}}\right)\right]N'(d_2). \quad \text{(A11)}$$

Simplifying,

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$$\frac{\partial P}{\partial \sigma_v} - \frac{V d_1 e^{-\delta \tau}}{\sigma_v} N'(d_2) - \frac{F d_2 e^{-r\tau}}{\sigma_v} N'(d_1) \; .$$ (2)

Further,

$$\frac{\partial P}{\partial \sigma_v} - \frac{Q(d_2 + \sigma_v \sqrt{\tau}) e^{-\delta \tau}}{\sigma_v} N'(d_2) - \frac{F d_2 e^{-r\tau}}{\sigma_v} N'(d_1),$$ (3)

or

$$\frac{\partial P}{\partial \sigma_v} - \sqrt{\tau} V e^{-\delta \tau} N'(d_2) + \frac{V d_2 e^{-\delta \tau}}{\sigma_v} N'(d_2) - \frac{F d_2 e^{-r\tau}}{\sigma_v} N'(d_1).$$ (4)

then,

$$\frac{\partial P}{\partial \sigma_v} - \sqrt{\tau} V e^{-\delta \tau} N'(d_2) + \frac{d_2 V e^{-\delta \tau}}{\sigma_v} \left[e^{-(1/2)d_2^2} - e^{\log(F/V) + (\delta - r)\tau - (1/2)d_1^2} \right].$$ (A15)

As we shown before, the term in the square bracket on the right-hand side of equation (A15) reduces to zero. This suggests that:

$$\frac{\partial P}{\partial \sigma_v} - \sqrt{\tau} V e^{-\delta \tau} N'(d_2) \geq 0.$$ (A16)

A4. The change of the principal on the put option value

Differentiate the put option value with respect to F:

$$\frac{\partial P}{\partial F} - e^{-r\tau} N(d_1) + \frac{e^{-r\tau}}{\sigma_v \sqrt{\tau}} N'(d_1) - \frac{V e^{-\delta \tau}}{F \sigma_v \sqrt{\tau}} N'(d_2),$$ (A17)

or;

$$\frac{\partial P}{\partial F} = e^{-r\tau}N(d_1) + \frac{e^{-r\tau}}{\sigma_v\sqrt{\tau}}\left[N'(d_1) - \frac{V}{F}e^{-(\delta-r)\tau}N'(d_2)\right].$$ **(A18)**

Simplifying further:

$$\frac{\partial P}{\partial F} = e^{-r\tau}N(d_1) + \frac{e^{-\delta\tau}}{\sigma_v\sqrt{2\pi\tau}}\left[e^{-(1/2)d_1^2} - e^{-(d_1\sigma_v\sqrt{\tau}-(1/2)\sigma_v^2\tau)-(1/2)(d_1-\sigma_v\sqrt{\tau})^2}\right],$$ **A19)**

which reduces to:

$$\frac{\partial P}{\partial F} = e^{-r\tau}N(d_1) + \frac{e^{-\delta\tau}}{\sigma_q\sqrt{2\pi\tau}}\left[e^{-(1/2)d_1^2} - e^{-(1/2)d_1^2}\right].$$ **(A20)**

Hence,

$$\frac{\partial P}{\partial F} = e^{-r\tau}N(d_1) \geq 0.$$ **(A21)**

A5. The change of the interest rate on the put option value

Differentiate with respect to r:

$$\frac{\partial P}{\partial r} = -\tau e^{-r\tau}FN(d_1) - \frac{e^{-r\tau}F}{\sigma_v\sqrt{\tau}}N'(d_1) + \frac{Ve^{-\delta\tau}}{\sigma_v\sqrt{\tau}}N'(d_2).$$ **(A22)**

Simplifying,

$$\frac{\partial P}{\partial r} = -\tau e^{-r\tau}FN(d_1) - \frac{e^{-r\tau}F}{\sigma_v\sqrt{\tau}}\left[N'(d_1) - \frac{V}{F}e^{-(\delta-r)\tau}N'(d_2)\right].$$ **(A23)**

From the previous section, the second term on the right-hand side is zero. Hence,

$$\frac{\partial P}{\partial r} - -\tau e^{-r\tau} F N(d_1) \leq 0. \qquad \text{(A24)}$$

A6. The change of the dividend rate on the put option value

Differentiate with respect to δ:

$$\frac{\partial P}{\partial \delta} - \frac{\tau e^{-r\tau} F}{\sigma_v \sqrt{\tau}} N'(d_1) + \tau V e^{-\delta\tau} N(d_2) - \frac{\tau V e^{-\delta\tau}}{\sigma_v \sqrt{\tau}} N'(d_2). \qquad \text{(A25)}$$

This easily reduces to:

$$\frac{\partial P}{\partial \delta} - \tau V e^{-\delta\tau} N(d_2) \geq 0. \qquad \text{(A26)}$$

A7. The change of the term to maturity on the put option value

Differentiate with respect to τ:

$$\frac{\partial P}{\partial \tau} - -rFe^{-r\tau} N(d_1) + AFe^{-r\tau} N'(d_1) + V\delta e^{-\delta\tau} N(d_2) - BVe^{-\delta\tau} N'(d_2). \qquad \text{(A27)}$$

where,

$$A - \frac{\left((\delta - r) + \frac{1}{2}\sigma_v^2\right)}{\sigma_v \sqrt{\tau}} - \frac{d_1}{2\tau}, \qquad \text{(A28)}$$

and

$$B - \frac{\left((\delta - r) - \frac{1}{2}\sigma_v^2\right)}{\sigma_v \sqrt{\tau}} - \frac{(d_1 - \sigma_v \sqrt{\tau})}{2\tau}. \qquad \text{(A29)}$$

Substituting *A* and *B*, equation (A29) becomes,

$$\frac{\partial P}{\partial \tau} = -rFe^{-r\tau}N(d_1) + V\delta e^{-\delta\tau}N(d_2) + \frac{\sigma_v}{2\sqrt{\tau}}Fe^{-r\tau}N'(d_1)$$

$$+ \frac{(\delta-r)}{\sigma_v\sqrt{\tau}}\left[N'(d_1) - \frac{V}{F}e^{-(\delta-r)\tau}N'(d_2)\right] - \frac{d_1}{2\tau}Fe^{-r\tau}\left[N'(d_1) - \frac{V}{F}e^{-(\delta-r)\tau}N'(d_2)\right]. \quad \text{(A30)}$$

Noting that the terms in the square brackets equal to zero,

$$\frac{\partial P}{\partial \tau} = -rFe^{-r\tau}N(d_1) + V\delta e^{-\delta\tau}N(d_2) + \frac{\sigma_v}{2\sqrt{\tau}}Fe^{-r\tau}N'(d_1). \quad \text{A31)}$$

The sign of equation (A31) is clearly indeterminate.

SUSTAINABILITY OF LIVELIHOODS STRATEGIES IN SOUTHERN ETHIOPIA: EVIDENCE FROM UMBULLO WATERSHED

Kebebe Ergano[1], Tewodros Tefera and Waktole Tiki

Abstract

This study used the sustainable livelihoods (SL) framework to analyse the livelihoods profile and strategies for 200 sample households in Umbullo watershed, Southern Ethiopia. The study was carried out during April-May 2004. In terms of livelihood outcomes, the majority of households (69%) reported that their economic situation had worsened over the past five years, and agricultural extension and rural development policies have not yet responded to this decline in welfare. The study further showed that agricultural intensification through blanket extension packages had not helped farmers either. Rising population levels, illiteracy, declining land productivity, increasing costs of technological inputs, low asset endowment along with lack of viable livelihoods diversification opportunities have left farmers in appalling living condition. Households were able to feed themselves on average for only 8 months in a year from their own production. This forced the farmers to be expectant of food aid from the government and other sources. A sudden landslide and subsequent decrease in water table have resulted in limited opportunities for the studied households to get sufficient and clean drinking water for human use and livestock. In the absence of favourable access to large urban markets, infrastructure, technical assistance, and credit, win-win outcomes for increasing agricultural productivity and human welfare while conserving natural production resources remain a challenge.

Keywords: **Ethiopia, Awassa, Livelihoods strategies, Watershed**

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1. Introduction

The downward spiral of land degradation, low and declining agricultural productivity, poverty, and food insecurity are the major problems commonly faced in rural Ethiopia. The underlying causes are socio-economic and policy-related factors, including population pressure; poverty; limited development of and access to markets, infrastructure and credit; limited farmer awareness of appropriate and profitable technologies; limited development or responsiveness of agricultural research and extension systems to farmers' needs; land fragmentation and limited development of land markets; limited education of farmers; limited alternative livelihood options; and policies related to these factors(Benin *et al* 2002). The impacts of these underlying factors on livelihoods under watershed context are generally not well understood. Investigating the impacts of such factors on livelihood strategies, and the effects of these responses on agricultural productivity, household welfare, and the condition of natural resources is important and needs location-specific studies to generate relevant information.

This paper assesses livelihood strategies at Umbullo Watershed in Sidama Zone of Southern Ethiopia. The purpose of the study was to deepen the existing knowledge and understanding of household livelihood strategies upon which future design and implementation of poverty reduction efforts can be based in the watershed. More specifically, the study tries to develop a household livelihood profile, identify range of livelihood strategies pursued by the households and identify indicators for assessing the sustainability of livelihood strategies.

2. Analytic framework

The study uses the sustainable livelihoods (SL) framework that emphasises the institutional arrangements through which people gain access to the necessary resources needed to attain livelihoods (Figure 1). The livelihoods approach used in this study rely on analytic framework developed by the International Development Studies (IDS) Sustainable Livelihoods Programme (Scoones, 1998) and subsequently adopted in slightly modified form by the UK Department for International Development (DFID 2000). The framework is useful in assessing the effectiveness of

existing efforts to reduce poverty. The framework endeavours to provide a way of thinking about the livelihoods of the poor people that will stimulate debates and reflection, thereby improving the performance of poverty-reduction strategies.

Following Scoones's (1998) interpretation of the SL framework, livelihood strategies may be categorized into three broad groups:

(i) *Agricultural intensification/ extensification:* refers to strategies based on the exploitation of natural resources (e.g., food crops, cash crops and livestock). It also includes income from agriculture that is earned off-farm (for example from casual labour).

(ii) *Livelihood diversification:* occurs as rural "households construct a diverse portfolio of activities and social support capabilities for survival in order to improve their standard of living" (Ellis 1998a). In this definition, diversification denotes expanding the share of income from *non-agricultural* activities (rural trade and services) or from income transfers.

(iii) *Migration:* refers to the situations where one or more family members leave the resident household for varying periods of time. Various types of migration may be distinguished (Ellis 1998b). Seasonal migration refers to temporary migration determined by the agricultural season. Circular migration occurs where migration is temporary but not necessarily linked to the cropping season. Permanent migration may involve migration from village to town or abroad.

Fig.1. Sustainable livelihood analysis framework

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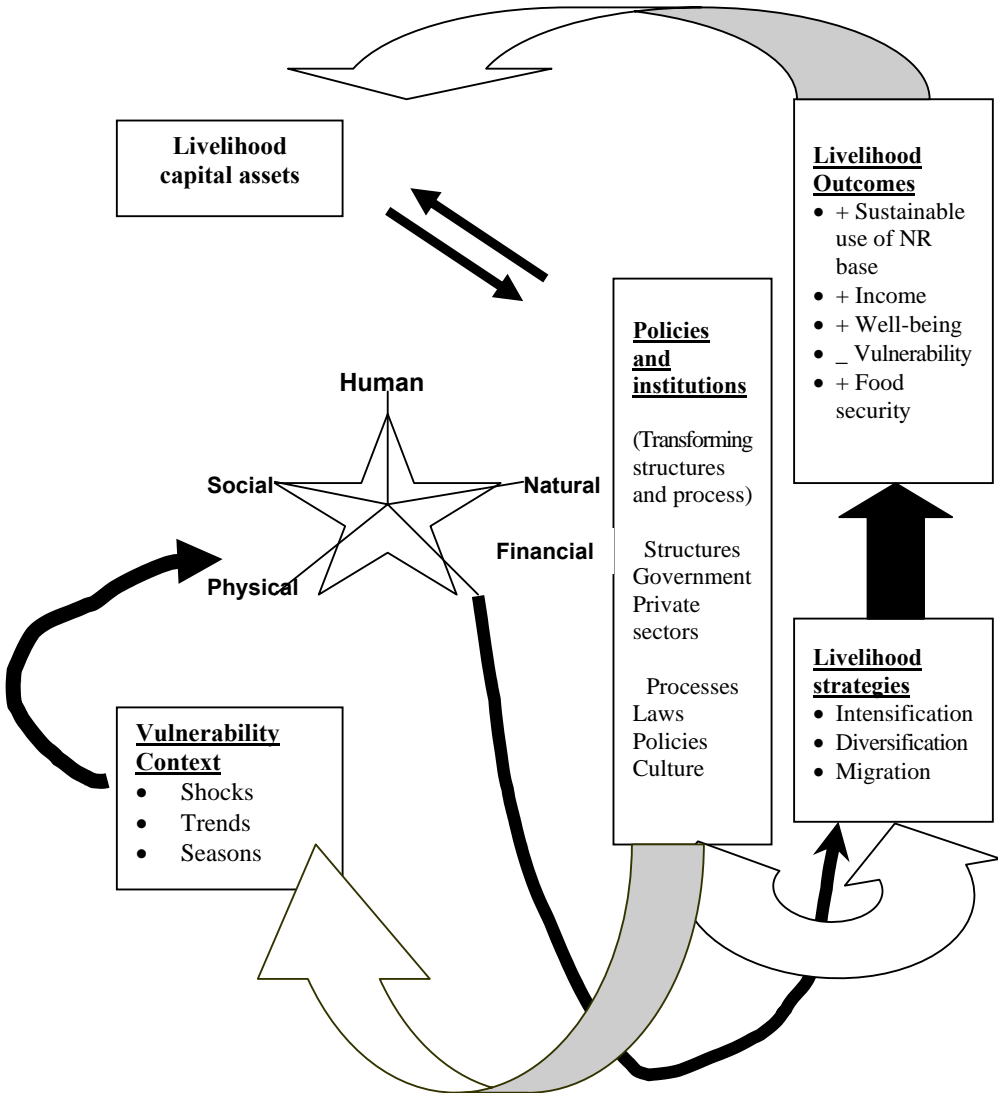
3.   Methodology

3.1   Sampling design and data collection

In order to achieve the breadth and depth of sustainable livelihood analysis, it is important to build on relevant skills, perspectives, tools and knowledge. Social, economic, environmental and governance perspectives and tools make contributions to our understanding of livelihoods. The key to effective sustainable livelihoods analysis is to be flexible, employing a range of different methods as the need arises. Accordingly, a range of methodologies including questionnaire survey, group discussions and key informants' interviews were used to generate the necessary data and information for the study. In addition, secondary data were collected from books, journals and other research reports to augment primary data. Advantage was taken of government policy documents in obtaining information related to the issue at hand.

The sustainable livelihoods framework developed by DFID and IDS was used as a guide to understand and analyse the information.

Two Peasants' Associations (PAs) sharing the same watershed were included in the research. Individual households were selected through simple random sampling technique for the survey. The sampling frame was obtained from the PA offices. Based on the number of the households that reside in the area, 80 households from Borecha and 120 households from Awassa Zuria were selected and included in the sample. Structured questionnaire that contained both open and close-ended questions was used for the survey. The questionnaire was pre-tested to ensure validity and reliability. Enumerators were employed and trained to administer the questionnaire. The structured questionnaire was administered on the selected households in the two PAs of the watershed during April-May 2004. Focus group discussions were conducted to collect the information on farmers' livelihood strategies and to assess trends in resource use patterns, ecological changes and general living situation of the community to complement data collected through a structured questionnaire. The team conducted the focus group discussions with the assistance of translators. The participants were selected based on their familiarity and unique knowledge of the community. A checklist was used to facilitate smooth discussion during the group discussions. Moreover, key informants were interviewed in order to get supplementary information from other sources. Criteria such as age, duration of stay in the catchment as a resident and positions in the local administrative and religious institutions were used for selection of key informants.

3.2   Data analysis

The analysis of the data involved both qualitative and quantitative analytical tools. Qualitative methods/tools were used to analyse data collected from key informant interviews and focus group discussions. This was based on narrative descriptions. The quantitative analysis applied included descriptive statistical procedures. The data collected from the field were coded and entered into computer for analysis. Software packages such as a spreadsheet (from Microsoft Excel) and Statistical Package for Social Science (SPSS) were used to analyse the data and tabulate the results. The data were described and summarised in terms of frequency distributions, means and standard deviations.

4.   Results and discussion

4.1   Livelihood resources

a)   Human capital

The household size for Umbullo Wacho watershed ranged between 2 and 12. The average size of household for the study households in Borecha and Awassa Zuria woreda were 6.25 and 7.15 respectively (Table 1). The community classified households into rich, medium and poor mainly depending on land and livestock holdings. The big households had at least nine members; the size of the medium households ranged between 5 and 8, while the small households had four members or less. As per this classification, the survey finding revealed that 27 percent and 13 percent of the respondents were rich in Awassa and Borecha, respectively. On the contrary the proportion of poor households were larger in Borecha (21 percent) than in Awassa (9.2 percent). Out of the randomly selected 77 sample households in Borecha only 9 percent were women-headed. In the case of Awassa Zuria the women-headed household constituted only 2.5 percent.

As indicated in Table-1, 93.5 percent and 99.2 percent of sample respondents in Borecha and Awassa Zuria were married, respectively. The single households constitute 1.3 percent in Borecha and 0.8 percent in Awassa Zuria. The divorced and widowed households made-up 3.9 percent and 1.3 percent of the sampled

respondents, respectively, in Borecha, while no unmarried cases were identified in Awassa. The male to female ratio percentage in Borecha was 95 while it was 116 for Awassa. This implies that for every 100 males there were 116 females in Awassa whereas it was only 95 in Borecha. For the watershed as a whole one could find 108 male for every 100 women.

Table 1: Household characteristics

Study site	Average household size	Sex of household head (%)		Marital status of household head				Sex ratio (MF)x100
		Male	Female	Married	Single	Divorced	Widowed	
Borecha	6.26	90.90	9.10	93.50	1.30	3.90	1.30	95
Awassa	7.15	97.50	2.50	99.20	0.80	-	-	116

Source: Primary data

Household education

Even though similar educational levels were observed among the study respondents in both study sites, many respondents in Borecha had attained primary and secondary levels of education than those of Awassa Zuria district (Figure 2).

Fig 2: Distribution of education levels
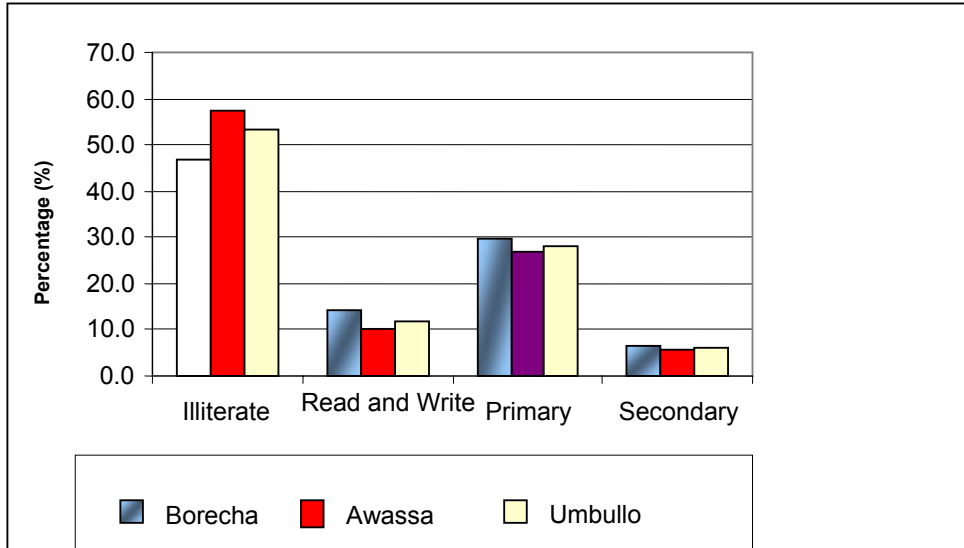
Household labour

Availability of work force in a particular farm family is determined by the household size, sex, and age composition. The mean man equivalent and adult equivalent per household were used as standard measures of available labour and consumer units, respectively. The overall labour availability is higher for Awassa woreda than that of Borecha (Table 2).

Table 2: Mean labour supply and consumption requirements of households (standard deviation in parenthesis)

Location	Man equivalent	Man equivalent/hectare	Adult equivalent
Borecha	2.87 (1.26)	5.15 (3.24)	5.46 (1.98)
Awassa	3.31 (1.64)	4.20 (2.83)	6.17 (1.98)
Umbullo	3.13 (1.50)	4.58 (3.02)	5.90 (2.00)

Man equivalent is calculated based on the following conversions:

Age groups (years)	Male	Female
Below 10	0.0	0.0
10-13	0.2	0.2
14-16	0.5	0.4
17-50	1.0	0.8
Over 50	0.7	0.5

Also the average adult equivalent (subsistence unit), which measures daily caloric requirement, was compared for the sample respondents. The mean adult equivalent value for the study area as a whole was 5.9. By taking Man Equivalent (ME) as a measure of labour force and Adult Equivalent (AE) as a subsistence unit, the result shows a 190% higher average AE value than ME. This finding implied that the majority of household members were below working age group. As a result, a few economically active household members are expected to support a large number of dependent household members. The dependency ratio computed for the households studied was 0.52 for Borecha and 0.54 for Awassa (Table 3). This figure is consistent with the adult equivalent calculated for the two sites.

Table 3: Household members' participation in productive work

Location	Total number of people in the study households	Proportion of dependents (%)		Adults 15-64 years No. (%)	Dependency ratio
		Children (0-14 years)	Old (> 64 years)		
Borecha	485	247 (50.93)	5 (1.03)	233 (48.04)	0.52
Awassa	855	446 (52.16)	13 (1.52)	396 (46.32)	0.54
Umbullo Wacho	1340	693 (51.7)	18 (1.34)	629 (47)	0.53

Institutional structure for acquisition of labour

Different labour mobilisation mechanisms are adopted at the time of peak agricultural seasons and crises. *Huchato, wonfel and mehaber* are the traditional labour mobilisation arrangements used in both study sites (Table 4).

Table 4: Institutional structure for accessing labour

Traditional means of labour accession	Umbullo		Borecha		Awassa	
	No.	%	No.	%	No.	%
"*Huchato*" as labour mobilization	113	58.5	51	66.2	62	51.7
"*Wonfel*" as reciprocal type of labour exchange	41	21.8	8	10.4	33	27.5
" *Mehaber*" as labour mobilization	61	32.8	28	36.4	33	27.5

The majority (66%) of respondents in Borecha used *Huchato* as a strategy to get sufficient labour when needed. The peculiar feature of this type of labour arrangement is that a household, which called its neighbours for labour support, should prepare food or provide gifts in kind after the task is completed. As a result, such type of labour generating mechanism is usually implemented by better off households, who afford the associated cost. *Mehaber* is a type of labour generating mechanism that has been used by a group of households who have blood ties or some kind of kinship. About 36% and 27.5% of respondents in Borecha and Awassa Zuria have practised it, respectively. Poor households who have little capacity to provide food or do not have relatives to mobilize enough labour engage in a reciprocal type of labour sharing known as *wonfel,* where participants work in "turn by

turn" till the tasks for all members are completed. The existence of such traditional mechanisms of labour mobilization promotes a labour intensive kind of agricultural intensification that reduces external input use like herbicide that can reduce the labour input.

b) Physical capital

Land

The size of owned land of respondent households ranged from 0.13 ha to 2 ha for Borecha and 0.25 to 3 ha for Awassa Zuria districts (Table 5). The mean land holding size was 0.67 ha and 0.98 ha for Borecha and Awassa respectively. This implied that respondents in Awassa Zuria district enjoyed relatively large land holding as compared to that of Borecha.

Table 5: Land holdings of households (ha)

Location	Size range of land holding		Size of land holding		Average size in *ha*
	Minimum	Maximum	Mean	Sd. deviation	
Borecha	0.13	2.00	0.673	0.36	0.67
Awassa	0.25	3.00	0.985	0.66	0.99

Land use pattern

All respondent households in both study sites were engaged in annual crop production. Fallowing was not currently being practised in Awassa Zuria while only 3.9% of respondents rested part of their farmlands under fallow in Borecha. The majority of respondents (96.4%) grew perennial crops in Awassa Zuria as compared to 72% in Borecha. About 12% and 6.7% of respondents had their own grazing land in Borecha and Awassa Zuria, respectively.

Land market

The findings in land renting suggest that land markets are uncommon. Only 11.7% of the respondents at Borecha and 9.2 % of the respondents at Awassa Zuria districts rented in land. Very few respondents were involved in renting out (0.8%) in Awassa

district while no one responded to have rented out land from Borecha district. The possible explanations for the poor land market in the watershed are small land holdings and the existing land tenure system. In micro farms there is no land viable for renting. Moreover, the current land tenure system in Ethiopia does not allow long term rental arrangement. This situation limits the investment opportunity for the landless and enterprising farmers.

Livestock

The farmers practiced mixed farming, where both animal and crop production are carried out concurrently. Animals were used as a source of food, manure, income and social prestige. Except for four respondents, the other respondents reported to have kept some kind of animals. The respondents' kept different livestock types (Table 6). However, cattle ownership played a major role in both study sites.

Table 6: Household livestock ownership

Location	Livestock type	Respondents Own livestock No. (%)	Minimum	Maximum	Mean	Std.
Borecha	Cow	67	1	7	1.66	1.08
	Ox	36	1	3	1.22	0.48
	Calf	50	1	16	1.5	0.95
	Sheep	13	1	2	1.38	0.51
	Goat	8	1	5	1.75	1.39
	Donkey	35	1	10	3.97	2.67
	Chicken	12	1	2	1.25	0.45
	Bull	7	1	2	1.14	0.38
	Horse	1	1	1	1	0
Awassa	Cow	111	1	10	2.27	1.87
	Ox	5	1	4	1.43	0.70
	Calf	80	1	8	1.6	0.81
	Sheep	41	1	10	2.10	1.96
	Goat	22	1	16	3.73	3.55
	Donkey	36	1	12	4.20	2.62
	Chicken	54	1	4	1.22	0.72
	Bull	7	1	1	1	0
	Horse	6	1	1	1	0

Tropical Livestock Unit (TLU)

To facilitate uniform interpretation of livestock ownership, all classes of animals were converted into a standard unit called Tropical Livestock Unit (TLU), equivalent to 250 kg live weight of an animal. In the study sites, livestock ownership can be used as a proxy indicator of wealth. The mean tropical livestock unit (TLU) for the study sites was found to be 3.6 (Table 7). When the TLU for the two study sites was compared, it as 2.9 and 4 for Borecha and Awassa Zuria in that order. There was a variation in livestock possession among the different households and the study sites. The findings indicated that respondents in Awassa Zuria districts were better endowed with livestock asset than respondents in Borecha.

Table 7: Livestock ownership in Tropical Livestock Unit (TLU)

Location	Minimum	Maximum	Mean	Std. deviation
Borecha	0.03	16.44	2.9	2.34
Awassa	0.01	19.76	4.0	3.30
Umbullo Wacho	0.01	19.76	3.6	3.00

Tropical Livestock Units are calculated based on the Following conversions:

Animal	unit
Calf	0.25
Weaned calf	0.34
Heifer	0.75
Cows and oxen	1.00
Horse	1.10
Donkey (adult)	0.70
Donkey (young)	0.35
Sheep and goats (adult)	0.13
Sheep and goats (young)	0.06
Chicken	0.013

Oxen ownership

Oxen represent the main energy source for land cultivation and threshing. Oxen ownership makes a difference in the overall well-being of a household because it determines the timing of land preparation and the resulting crop productivity. The

mean oxen ownership for Umbullo watershed as a whole was 1.36 per household. The mean holding for Borecha was 2.9 while it was 4.0 for Awassa Zuria woreda.

Farm implements

Possession of farm implements has an important role in performing agricultural operation as per the agricultural calendar and there-by determining the level of productivity at the household level. Most farmers owned simple and traditional farm tools such as iron tipped plough, sickle, axe, etc. in both watersheds (Table 8).

Table 8: Ownership of farm implements

Location	Type of assets	Number Respondents own No. (%)	Minimum	Maximum	Mean	Std.
Borecha	Hoe	75 (94.4)	1	4	1.76	0.82
	Sickle	52 (67.5)	1	2	1.04	0.19
	Iron plough	40 (52)	1	2	1.15	0.36
	Spade	30 (39)	1	2	1.10	0.13
	Axe	40 (52)	1	4	1.10	0.50
Awassa	Hoe	106 (88.3)	1	4	1.68	0.75
	Sickle	93 (77.5)	1	3	1.24	0.50
	Iron plough	78 (65)	1	2	1.04	0.20
	Spade	29 (24.16)	1	4	1.17	0.60
	Axe	69 (57.5)	1	6	1.33	0.76

None of the farmers owned modern farm implements such as tractors, threshers, etc. One distinct implement of greater importance in the study sites was the hoe. Hoe was, especially, indispensable in Borecha due to the undulating topography of the land and farmers preferred the hoe to oxen drawn plough in the highly degraded parts of the watershed.

Household utensils

Most respondents owned different household utensils which they used in their day-to-day life (Table 9). Very few number of respondents owned assets such as iron beds, bicycles, watches and radios. Respondents in Awassa Zuria district owned more

household utensils than those at Borecha. This might be due to geographic and administrative proximity to the region's capital city, Awassa.

Table 9: Ownership of household utensils

Type of assets	Borecha			Awassa		
	No. of respondents	Mean	Std.	No. of respondents	Mean	Std.
Bicycle	4	1.25	0.50	2	1.00	0.00
Wooden bed	53	1.13	0.34	98	1.16	0.46
Radio	6	1.00	0.00	17	1.00	0.00
Watch	12	1.00	0.00	14	1.14	0.36
Table	31	1.23	0.62	59	1.54	1.18

House types and conditions

House type was another indicator of wealth in the study watershed. Houses made of corrugated iron sheet were not reported from respondents in Borecha while 11.2 % of respondents from Awassa Zuria owned such houses (Table 10). This finding implies that the wealth status of respondents in Awassa was better than that of Borecha.

Table 10: House type and condition

Location	Hut			Iron sheet		
	V. Good (%)	Good (%)	Poorly maintained (%)	V. Good (%)	Good (%)	Poorly maintained (%)
Borecha	9.1	51.9	39.0	0.0	0.0	0.0
Awassa	2.5	60.0	35.8	0.8	11.7	5.8
Umbullo Wacho	5.1	56.9	37.1	0.5	7.1	3.6

4.2   Livelihood strategies

a)   Agricultural intensification

Cropping pattern

Crop production was the major activity in both study sites. Maize followed by haricot bean and pepper were the major crops grown in both sites. Enset, sugarcane, chat and other perennial crops were also grown in the area.

Use of external inputs

Farm households, which have access to production resources such as land, labour, working capital and credit markets would likely pursue agricultural intensification both in the labour and capital-intensive production activities. Broadly speaking, agricultural intensification can be categorized into 'capital-led intensification' and 'labour-led intensification.' Capital-led intensification as the name implies requires a substantial use of capital that includes inputs such as fertilizer, organic manure and quasi-fixed capital that protects land such as soil conservation measures. Labour-led intensification, on the other hand, is a process whereby farmers add more labour inputs to the production process on fixed or given unit of land. Agricultural intensification may occur as a result of the use of more labour or capital inputs or shift to more valuable outputs of technical progress that raises productivity in a given unit of land.

The use of external inputs such as hired labour, fertilizers, improved seed and chemicals that can lead to capital-intensive type of intensification were examined in the watershed. All respondents in the study areas owned pieces of land regardless of the differences in size. On average 38 percent of the household used labour as a means of agricultural intensification in their livelihood strategy. The average quantities of improved seeds, fertilizers and chemicals used by households were taken as indicators for capital-intensive mode of agricultural intensification. Out of the sample households interviewed, 56.1% responded to have used improved seed with fertilizer in their intensification strategy. Only 5% of the respondents expressed to have used chemicals. However, 54.2% of the respondent's replied that the trend in the use of inputs was declining. The mean fertilizer use for the study respondents in the

watershed was 48 kg per household (Table 11). Comparison of respondents between Borecha and Awassa Zuria regarding amount of fertilizer use in 2003 production year indicated that the mean for the former was 42 kg per household while it was 51 kg per household for the latter. The use of chemicals was the exception rather than the norm in both Borecha and Awassa Zuria.

Table 11: Use of external input and access to credit

External input use	Umbullo		Borecha		Awassa	
	Mean	SD	Mean	SD	Mean	SD
Fertilizer used (kg/ household)	48.00	31.00	42.0	18.0	50.70	36.7
Improved seed used (kg/household)	12.13	6.46	12.9	7.0	11.50	6.0
Herbicides used (Litres)	1.15	0.82	-	-	0.93	-
Access to credit (%)	41.00	20.00	19.0	24.7	22.00	18.3

Formal credit helps small producers to access improved seeds and fertilizer in order to intensify their agriculture. Only 21.8 percent of respondents used credit as a means of agricultural intensification strategy.

b) Diversification

Diversification towards off-farm activities was not as such important in the watershed. Some households were engaged in petty trade, casual labour, handcraft, selling of firewood, begging and being "brokers" in that order (Table 12). Comparison between Borecha and Awassa Zuria district showed a remarkable difference in terms of the proportion of households involved in off-farm activities as diversification strategy. Nearly 53% of households in Awassa were reported to have been involved in petty trade while only 20% were involved in Borecha. Those households involved in the casual labour in Awassa Zuria were also significantly higher than that of Borecha. Handicraft, selling of firewood, brokerage were other forms of off-farm activities practiced by the respondents in Awassa. However, only begging and handicraft employed a few households in Borecha. In general this finding indicated that households in Awassa Zuria had a better position in terms of both diversification of livelihood activities and in the proportion of households participating in off-farm activities in Awassa. This might be due to their better access to infrastructure, Awassa market, and institutional support from government agencies.

Table12: Household livelihood diversification strategies

Livelihood diversification strategy.	Umbullo			Borecha			Awassa		
	No.	%	Rank	No.	%	Rank	No.	%	Rank
Petty trade	78	43.8	1	15	19.5	1	63	52.5	1
Casual labour	58	32.8	2	9	11.7	2	49	40.8	2
Selling firewood	3	1.7	4	0	-	-	3	2.5	4
Broker age	1	0.6	6	0	-	-	1	0.8	5
Handicraft	7	4.1	3	1	1.3	4	6	5.0	3
Begging	2	1.2	5	2	2.6	3	0	-	-

c) Migration

The contribution of migration to household livelihoods in terms of income is important to back up the financial resources of household members. However, migration was a rare phenomenon in Umbullo watershed. Only very few households practiced seasonal migration. Key informants strongly affirmed that migration and casual labour were the most degrading and despised forms of livelihoods. Culturally, the community members used migration as the last option. Historically the area was deprived of access to education and other basic social amenities by the past government regimes. As a result, there were no significant number of community members who left the area for education or other forms of employment. These undermined the contributions of migration as an alternative form of livelihood strategy. The type of migration that was practiced by members of the community was seasonal migration for search of animal feed and water. Some community members also had pieces of land in the remotest parts of lowland areas, and they sometimes moved with their family to carry out farming activities.

Table 13: Migration as livelihood strategy

Livelihood strategy		Umbullo watershed	
		No.	%
Seasonal migration			
	Summer/wet season	5	2.50
	Dry season	6	3.00
Member of migrant			
	Head of household	5	2.50
	Head & family members	3	1.52
	Whole family	3	1.52
Destination			
	Nearby village	4	2.03
	Within the wereda	4	2.03
	Outside the wereda	3	1.52
Type of activity			
	Weeding	3	1.52
	Own farm operation	3	1.52
	Non-farm labour	5	5.60

4.3   Livelihood outcomes

Major indicators of livelihood outcomes are considered in this section. To this end, farmers wealth standing and their perception on the trends of living conditions, length of time households feed themselves from their own production, farmers' view on trends of soil fertility, and trends in water supply are considered as proxy for the sustainability of livelihood outcomes. The indicators are analysed in disaggregates for Awassa and Borecha research sites.

a) Wealth status of farmers

Wealth status was derived from the responses of sample households on their perception of wealth category using a structured questionnaire. The results indicate that 53.2% of farmers ranked themselves as medium, while 40% and 5.2% of the sample households perceived themselves as poor and rich, respectively in Borecha (Tables 14 and 15). On the other hand, 2.5%, 61.7% and 34.2% of the households at Awassa site perceived themselves as better off, medium and poor respectively.

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Table 14: Household perception of wealth status

Location of households	Status	Frequency	Percent
Borecha	Better off	4	5.2
	Medium	41	53.2
	Poor	31	40.3
	Total	76	98.7
Awassa	Better off	3	2.5
	Medium	74	61.7
	Poor	41	34.2
	Total	118	98.3

The perception of wealth indicators was specific to the local community. What made a household better off in one location did not hold true in another. In the Umbullo Wacho watershed, the number of livestock, and especially cattle and land holding size were the major criteria used by key informants.

Table 15: Household wealth status indicators

Location	Wealth Category		
	Rich	Medium	Poor
Borecha	Own more than one hectare of land	Minimum of half ha of land	Have only one piece of land at his/her backyard
	2 oxen, 5-6 cows and some small ruminants	Have 3 cattle and ox	Casual labourer
	Sending children to secondary school in Awassa		Living with better off by being servant
	Have more than 50 plants of *'enset'*		Receive government aid
Awassa	Own more than one hectare	Own one hectare of land	Have small or no land
	3 oxen, 5-10 cattle and 2 small ruminants	Pair of oxen, 3-5 cattle	Have only chicken
	Have economically active household members (>15 years of age)	Send children to school	Sell his labour for others
	Have corrugated iron sheet house Employ others		Receive government aid

b) Trends in living conditions

Farmers were asked if their living condition had improved or worsened as compared to what it used to be five years ago. The living condition was categorized as better off, slightly improved, no change and worse off. The farmers believed that their living conditions have worsened in both sites as compared to the situation five years ago. The proportion of farmers who perceived their condition to be better off was negligible in both sites. Relatively more number of farmers from Borecha site perceived their living condition to have become worse off than those in Awassa.

Table 16: Farmers' perception of current living condition as compared to five years ago

Location	Living condition	Frequency	Percent
Borecha	Worse off	53	68.8
	No change	11	14.3
	Slightly improved	9	11.7
	Better off	3	3.90
Awassa	Worse off	51	42.5
	No change	32	26.7
	Slightly improved	31	25.8
	Better off	4	3.30

c) Food security situations of households

The ability of households to feed their family from their own production throughout the year was taken as one of the indicators of livelihood outcome of households. Interestingly, the percentage of households that could feed themselves for eight months were about 22% in both sites. The proportion of households that could feed their family for 8 to 10 months accounted for about 50% in Borecha and 40% at Awassa site. However, these figures need a further and in-depth investigation to improve their reliability. Generally, the food security situation is precarious in both sites. The proportion of food secure households from their own production was 24.7% in Borecha and 7.5% in Awassa, respectively.

Fig 3: Number of food secure months
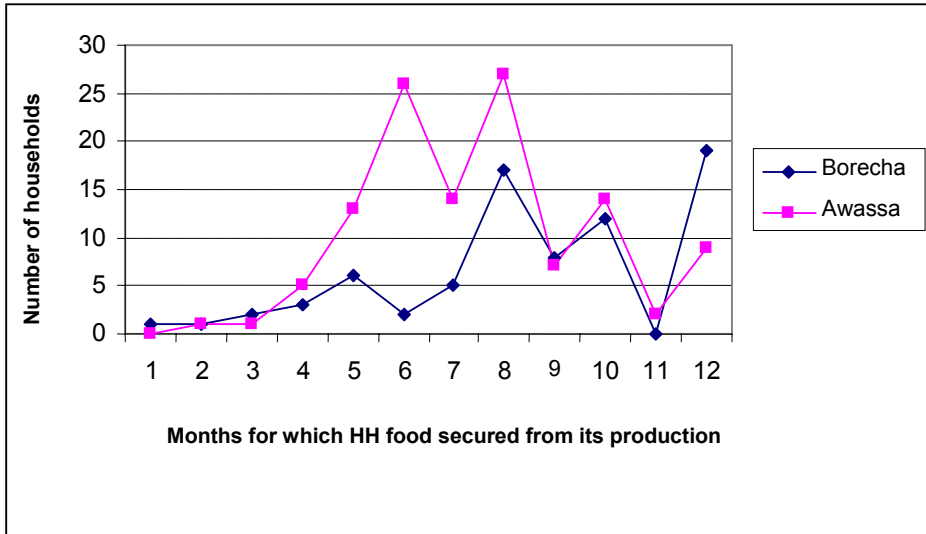
d) Sustainability of production potential of natural resource

Livelihood strategies pursued by households and the community at large has a far-reaching impact on the wider environmental sustainability. Soil fertility status was considered as a principal proxy indicator to show sustainability of the productive potential of the natural resources. Farmers' perception of the status of soil fertility as compared to that of five years age was assessed. Among the sample households interviewed, 89.6% and 75% perceived the soil fertility to be declining at Borecha and Awassa, respectively (Table 17). On the other hand, 7.8% and 20.8% of the interviewees perceived soil fertility to have improved at Borecha and Awassa, respectively. The finding seems logical, as the farmers had been exploiting the existing soil nutrient stock without replenishing it. Short-term survival mechanisms were forcing people to adopt unsustainable strategies. This was reflected in the low number of people using soil fertility improving technologies such as chemical fertilizers, manure, soil and water conservation measures and fallowing (Table 18).

Table 17: Trends in soil fertility status

Location	Soil fertility status	Frequency	Percent
	Declining	69	89.6
Borecha	Improving	6	7.8
	No change	2	2.6
	Declining	90	75.0
Awassa	Improving	25	20.8
	No change	5	4.20

Table 18: Farmers' perception of factors determining declining soil fertility

Location	Variables	Count	Percentage of respondents
	Absence of fallowing	26	28.3
	Deforestation/erosion	50	54.3
Borecha	Lack/small fertilization	11	12.0
	Slope	3	3.3
	Population pressure	2	2.2
	Absence of fallowing	29	27.6
	Deforestation/erosion	48	45.7
Awassa	Lack/small fertilization	18	17.1
	Slope	1	1.0
	Population pressure	9	8.6

e) Trends in water supply

The impacts of farmers actions and practices on livelihood outcomes can be seen on the supply of water. The farmers were of the opinion that water supply had declined drastically in Borecha site, while it had, to some extent, improved in Awassa (Table 19). The decline in water availability at Borecha site can be explained by the fact that the water reserve was covered up with soil during a landslide in 2000. Moreover, erratic rainfall and recurrent drought have exacerbated the situation. Thus, water shortage remains an important concern for the residents in Borecha as the available evidence seems to indicate.

Table 19: Farmers response on trends of water supply

Location	Status of water supply	Count	Percent
Borecha	Increasing	5	6.5
	Decreasing	70	90.9
	No change	2	2.6
Awassa	Increasing	28	23.3
	Decreasing	33	27.5
	No change	59	49.2

5. Conclusions and policy implications

In terms of livelihood outcomes, the majority of households believed that their economic situation had worsened over the past five years. Households in the watershed were generally in precarious living conditions. On average, they were able to feed themselves from their own production for only 8 months in a year. This has forced farmers to be expectant of food aid from the government and other sources. Agricultural extension and rural development policies have not yet responded to this socio-agronomic transformation. Analysis of livelihood strategies using SL framework has shown that agricultural intensification through blanket extension packages has not improved the situation. The rising population, illiteracy, declining land productivity, increasing costs of technological inputs, low asset endowment, with lack of viable livelihoods diversification opportunities, have left farmers in appalling living situations. A sudden landslide that covered the water source in the study sites has deprived households of drinking water for people and livestock. These findings amply demonstrate the complexity of factors affecting livelihoods. The search for simple solutions to the complex problems of land degradation, low and declining agricultural productivity and poverty is elusive and dogmatic pursuit of approaches that have succeeded in some settings is likely to fail in others. In the absence of favourable access to a large urban market, infrastructure, technical assistance and credit, win-win outcomes in increasing agricultural productivity and human welfare while improving natural resource conditions still remain a challenge.

Therefore, development efforts should be directed towards:

1. Investing in public goods such as education to improve livelihood options and welfare. In the long run, education is likely to reduce population pressure on land by taking rural people out of land-based livelihoods.
2. Enhancing farmers' access to reliable information about profitable economic opportunities and technologies suited to their circumstances instead of widespread government extension and credit program.
3. Extension programs that strive to learn from farmers, as well as from other sources, the opportunities that are profitable and sustainable with acceptable risks, rather than trying to promote a pre-defined set of technologies everywhere.
4. A flexible and demand-driven approach to credit linked to identification of profitable opportunities that can facilitate the improvement of livelihoods.
5. Promoting functional factor markets i.e. markets for land, labour, oxen-power and other productive inputs.
6. Increasing access to markets, improving road infrastructure and promoting a shift to higher value crops such as vegetables and fruits or intensive dairy production for high yields and returns.
7. Efforts must be geared at exploiting expanding Awassa market
8. Efforts should be made to improve the absorbance of markets to the products of farmers. Outlets also should be available to help the farmers mobilize their products to nearby and faraway markets.
9. Investments in rural feeder roads that can be a high return investment, enabling high value agricultural production and associated land improvement.
10. More off-farm employment opportunities should be made available to help rural households diversify their sources of income and to reduce the risk associated with the dependency on only one source of livelihood.
11. Skill enhancement programs should be arranged for the farming community in order to help them be innovative as well as engage in activities outside agriculture.
12. Strong policies on family planning should be designed and implemented in order to check the rapid increase in population size.

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ESTIMATING WEALTH EFFECTS WITHOUT EXPENDITURE DATA: AN ASSET-BASED WEALTH INDEX FOR RURAL ETHIOPIA

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Abstract

In economic studies household economic status is usually proxied by measures of consumption or income. In recent years, several studies have advanced an asset-based index as an alternative measure of wealth status. Compared to measures based on consumption, the data required to construct such indices are less demanding and the measure is simpler to calculate. In most studies the asset-based wealth index is constructed with a standard list of assets comprising household ownership of consumer durables, the characteristics of the household's dwelling and sometimes household landownership. These indices have been used to estimate the effect of long term economic status on socio-economic outcomes such as health status or children's school enrolment.

This paper extends the use of an asset-based wealth index in estimating the effect of long term wealth status on food security, measured as the number of weeks in a typical year in which the household has substantially less to eat than otherwise. The paper also addresses the question: what assets should be included in the wealth index to best reflect long term economic status in rural Ethiopia? We use data from the Ethiopian Rural Household Survey (ERHS) collected in 1994 and 1995 to construct several asset-based wealth indices and test the predictive power of these indices in explaining differences in food security. We also explore regional differences in the relationship between asset-based wealth and food security. The outcomes of this analysis will be used to design a data collection record for a study on social networks and risk sharing behaviour within and between households, in which long term economic wealth features as a control variable.

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1.   Introduction[2]

Starting out on the research project "Social security within and between households: a social network approach to intra-household resource allocation in Ethiopia", we were confronted with a challenge. The project aims to bring together insights from the literature on risk sharing, intra-household resource allocation and social capital and seeks to explain differences in the social security position of different members within a household. The subject and approach of this study requires intensive data collection on insurance transfers, social networks and intra-household bargaining processes and outcomes. It is expected that economic status, *albeit* not the main focus of this study, does play a role in the mechanisms we are interested in. Given the time intensive nature of the proposed data collection, it is, however, not possible to collect full information on incomes and expenditures, measures that are commonly used as proxies for household economic status. This paper elaborates on an alternative measure of economic status, asset-based wealth indices. It discusses the choice of assets to be included in such an index for Ethiopia, addresses geographical patterns in ownership of assets and explores the relation between asset-based wealth and food security.

In the past decade, several studies have advanced an asset-based index as an alternative measure of economic status. The indices used in these studies are the weighted sum of a defined set of household assets including housing characteristics and durables. This measure of economic status is much easier to construct and far less demanding in terms of data collection compared to the conventional consumption or income based proxies used to compare outcomes across different economic groups. Asset-based wealth indices have, for example, been used to estimate the effect of wealth on educational attainment (Filmer and Pritchett, 1999) and nutrition status or to assess changes in poverty over time (Sahn and Stifel, 2000).

Although some studies have discussed the validity of an asset-based proxy for economic status versus an income or consumption based proxy (Sahn and Stifel, 2003, Filmer and Pritchett, 2001, and Lindelow, 2002) little attention has been given to the type of assets to be included in the index.[3] The wealth indices used in the literature so far are based on a more or less standard list of assets including assets relating to housing conditions and ownership of consumption durables, sometimes extended to include productive capital (such as land) or human capital (level of education of the household head). The choice of assets is hardly ever discussed. The most commonly used assets for the index include durables such as television, fridge, car and access to electricity. Such assets may be relevant to construct a measure of economic status to make comparisons across households at a national level, comprising both urban and rural households; they seem to be less relevant for a study conducted in poor rural communities. Even less so when focussing on one village in specific, where ownership of particular assets, such as toilet facilities, may not vary within a village.

This leads to an important question that is central to this paper: What assets should be included in an asset-based wealth index that can be used as a control variable in research in rural Ethiopia? The availability of household data on both assets, consumption and food security from the 1994/1995 round of the Ethiopian Rural Household Survey (ERHS) allows us to compare the relevance of five differently composed asset-based wealth indices and to explore geographical differences in terms of the importance of these assets. Looking at the factor loadings on assets, we find substantial differences across villages and argue for a location specific asset-based wealth index for studies at a disaggregated level. Also, preliminary analysis shows that asset-based indices of economic status have a more precisely estimated relation with food security compared to a per-capita consumption measure.

The remaining part of this paper is organised as follows. Section two elaborates on the use and composition of asset-based indicators of wealth in the literature, including an example for Ethiopia. Section three describes the data and methodology. In section four, we present five different wealth-indices while section five discusses geographical differences in terms of importance of assets. In section six, we use the

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[3] Moser (1998) addresses this question in a qualitative way while Filmer and Pritchett (2001) perform a robustness check on the type of assets included.

asset-based wealth index to estimate the effect of economic status on food security, in this paper measured as the number of weeks in a typical year in which the household has substantially less to eat than otherwise. Section seven concludes.

2. Asset-based wealth indices

Economists have long relied on a money-metric measure of income or consumption expenditures as indicators of poverty or living standards. These money metric measures are used as proxies for economic status. It is, however, commonly agreed that such a measure at best captures temporal dimensions of poverty because it measures consumption at only one point in time and, therefore, may not reflect long-term economic status. At the same time, collecting the information necessary to construct such a money metric measure is time consuming and especially in developing countries the data collection and metric construction is often constrained by measurement problems.[4]

In the past decade, several studies have advanced an asset-based index as an alternative measure of economic status. See, for example, Sahn and Stifel (2000 and 2003), Filmer and Pritchett (1999 and 2001), Morris et al. (2000). The index used in these studies is a weighted sum of a defined set of household assets (including housing characteristics and durables) that is used to rank households and construct wealth quintiles. Compared to measures based on consumption, the data required to construct a wealth index are less demanding and the measure is simpler to calculate. An asset-based wealth index may also capture dimensions of poverty not reflected in a one-time measurement of consumption or income, as is advanced by Sen (1985) in the capability approach or more recently in the livelihood-framework (see, for example, Ellis, 2000). More importantly, asset-based wealth indices have been shown to be at least as good predictors of outcome variables of interest such as nutrition or school enrolment, as are conventionally measured consumption expenditures (Filmer and Pritchett, 2001, Sahn and Stifel, 2003). In most cases, the

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[4] Sahn and Stifel (2003) mention at least five measurement problems. First, consumption and expenditure surveys are often intermittent and of low quality. Secondly, using recall questions on consumption can lead to measurement errors that may not be random. Thirdly, it is often difficult to value the consumption of home-made goods. Fourthly it is also difficult to find a suitable deflator, especially when inflation is high. Finally, and related to the latter it is not easy to compare prices and expenditures across countries.

wealth index is used to compare outcomes across groups of different economic status, either at a national level or across countries, using nationally representative surveys. An index-based approach has, however, also been used at a more disaggregated level. See, for example, Janssens (2005) who uses a household asset index as a proxy for household wealth in measuring the externalities of a women's empowerment programme in the state of Bihar, India.

Filmer and Pritchett (2001) compare an asset-based wealth index with consumption expenditures and find a strong correlation between the index and per capita output and poverty. Yet, Sahn and Stifel (2003) argue it is not meaningful to consider the correlation between the asset index and consumption expenditures, as both are proxies for welfare and measure long term wealth with error. Along these lines they suggest it is more important to measure the impact on outcomes and evaluate the predictive power of asset-based wealth indices and consumption expenditures on child health and nutrition. Comparing indicators of relative measurement error[5], they show that the asset index they use is measured as a proxy for long term wealth with less error than expenditures. They suggest researchers may actually prefer to use the asset index as an explanatory variable in studies on economic welfare and capabilities such as health and nutrition.

Most of the asset-based wealth indices currently used in the literature consists of at least two sets of assets. The first is a set of household or housing characteristics, such as the availability and type of toilet facilities, type of water sources for drinking, type of building material used for walls, floors and roofs, access to electricity and the type of cooking fuel used. The second is a set of durable consumption goods whose ownership is expected to be indicative of wealth, such as a television, watch, refrigerator, bicycle, motorcycle, car, telephone, sewing machine and/or stove. Also, to varying degrees, other dimensions of wealth are included such as the education of the household head (Sahn and Stifel, 2000 and 2003), ownership of land (Filmer and Pritchett, 2001); the number of household members per room (Lindelow, 2002) and having a kitchen separate from bedrooms (Filmer and Pritchett, 2001).

The use of a standard list of assets is useful when comparing groups on a (cross-) country level, as it comprises information on what distinguishes the rich from the poor

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[5] The indicator of relative measurement error is defined as the ratio of OLS to IV estimators of the two measures.

regardless of the place of residence (urban versus rural). In our case, where we want to use the wealth index as a control variable in an analysis at a lower level of aggregation, one village located in a poor rural setting, such a standard list including the ownership of durables such as a television or a car, may not be the most relevant. The challenge, therefore, is to define the assets relevant for the construction of a wealth index for rural Ethiopia.[6] Indicative is the asset-based wealth index used by Alemu et al. (2003) in an international study of childhood poverty. This study comprises both rural and urban communities and the index used is composed of three components including housing quality, consumer durables and services and ranks households in three groups: very poor, poor, less poor. This study, however, used a slightly different approach compared to the studies mentioned above as the three components and different assets within the components received equal weights.

3. Data and methodology

To construct and compare asset-based wealth indices and estimate the relation between long-term economic wealth and food security we use data from the Ethiopian Rural Household Survey (ERHS) collected in three rounds in 1994 and 1995 by the Department of Economics of Addis Ababa University in collaboration with the Centre for the Study of African Economies of Oxford University. The survey covers 20 sites and approximately 1450 households and captures many of the major socio-economic groups, agro-ecological zones and farming systems in Ethiopia. For more information on the dataset, see for example Bigsten (2003) and Dercon (2004). The available data set covers a wide range of information, including asset ownership, food security and household consumption. For the purpose of this paper we use the number of weeks in a typical year in which the household has substantially less to eat than otherwise as an indicator of food security.[7] The aggregate household

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[6] Similar arguments are currently made in the literature on poverty lines based on Cost of Basic Needs (CBN) consumption measures where the use of a single consumption bundle to construct a national poverty line has shown to yield inconsistent poverty comparisons and the use of region-specific basic needs bundles is now advocated (Tarp et al. 2002).

[7] As respondents were asked to reflect on the situation of a "typical" year, rather than the situation they were experiencing at the time of the interview it is expected that this measure gives a more general impression of food security over time. It is however possible that the particular situation of a respondent in 1994 has affected the answer given to this question.

consumption measures used in this paper have been provided by Bereket Kebede and have been used in previous analyses based on the ERHS data, see for example Bigsten (2003).

The construction of an asset-based wealth index is based on the assumption that wealth or economic status is a latent variable. We assume that economic status is the common factor behind the ownership of the assets, such that household economic status explains the maximum variance and covariance in the asset variables. Such factors can be extracted from a set of variables by creating a set of mutually uncorrelated components or factors of the data using principal component or factor analysis. The first linear component is that linear index of the underlying variables that captures most common variation among them. Each item, in our case asset, gets a different weight reflecting the contribution of this asset to the common factor. Principal component analysis only uses the variation in the variables that they have in common with other variables (communality), while factor analysis uses all the variability in a variable to extract the factors and also allows for a unique contribution of each of the assets (often referred to as uniqueness).[8]

In this paper we will use both factor analysis and principal component analysis. The uniqueness scores calculated in factor analysis provide us with a tool to assess if an asset should be included in the index; variables with low factor loadings and a high score on uniqueness contribute little to the common factor economic status and can therefore be excluded.[9] As a cut-off point, we use a uniqueness-score of 0.95: assets with a uniqueness-score higher than 0.95 will not be included in the index.[10] Since we assume there is one common factor behind the ownership of the assets, household economic status, we use principal component analysis to derive the final weights for each asset (the factor loading) and to construct the index.[11] Ranking households on their score on the index then allows us to construct wealth quintiles where the first

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[8] Earlier studies have used both principal component analysis and factor analysis to derive the weights for the assets and construct the indices. Comparisons of the outcomes have shown no significant differences between the two methods (Sahn and Stifel, 2003, World Bank, undated).

[9] This may be relevant for housing characteristics that are at least to some extent determined by the possibilities that are locally available; even wealthy households may not have a flush toilet or piped water sources when the technology (for instance, sewage or a tube system for water) is not locally available. This is especially relevant for toilet facilities, source of drinking water, electricity and to a lesser extent in relation to building material and cooking fuel.

[10] This cut-off point was empirically determined and is arbitrary. Future work should establish the sensitivity of the index to this cut-off point.

[11] In practice, results obtained with factor analysis and principal component analysis are very similar.

quintile represents the 20 percent of households with the highest score on the wealth index the fifth quintile represents the 20 percent of households with the lowest score on the wealth index.

We will compare five asset-based wealth indices. First, the standard list of assets commonly used in the literature (see for example, Filmer and Pritchett, 2001). Second, the index used in the Young Lives project composed of the assets listed in Table 1. Third, an extended index including an extensive list of durables available in the ERHS. Based on the importance of particular assets in these three indices, we compose a forth, specified index containing the most relevant assets in the rural Ethiopian context. Finally, in the specified+ index we add information on the ownership of oxen, as this is an important productive asset in agriculture. As the sale of cattle may be an important consumption smoothing strategy, the results obtained with this index should, however, be interpreted with care.

Table 1: Variables used to construct wealth index in Young Lives Project Ethiopia

Housing Quality	Consumer Durables	Services
Rooms/person *	Radio *	Electricity
Quality wall *	Fridge	Water *
Quality roof *	Bicycle	Sanitation *
Floor Durability	TV	Cooking Fuel *
	Motorbike/scooter	
	Motor car/truck	
	Mobile phone	
	Landline phone	
	Modern bed *	
	Table or Chair *	
	Sofa *	

Source: Alemu et al. (2003)
* Available in ERHS 1994/5

The data set does not contain information on all assets that have been used elsewhere in the literature and not all asset variables are measured in the same way. This may account for some of the differences we will find. It is also important to realize that the data used in this paper was collected 10 years ago and that over time, different or additional assets are indicative of long-term wealth or economic status,

such as, for example, the mobile phone that is included in the asset-based wealth index used in the Young Lives project. Consequently, and also following from our subsequent analysis it will be important to have information on the situation in the particular site before deciding on the assets to be included in a survey instrument.

4.   Assets and indices

Table two presents factor loadings and uniqueness-scores of the assets included in the five indices. These reflect the contribution of the variable to the common factor and the variation in the variable not in common with other assets respectively. The second column shows the scores on the assets that are commonly used in the literature on asset-based wealth indices, the standard index. We find high factor loadings on assets related to housing, with the clear exception of the availability of toilet facilities (latrine or flush), while the factor loadings on durables are relatively low. It should be noted, however, that the latter scores are comparable to the loadings on durables found by Filmer and Pritchett (2001); while the loadings on housing facilities found in the ERHS data are relatively high compared to other studies. Of the additional assets included in the so-called Young Lives Index (third column), only a bed seems to make a meaningful contribution to the wealth index. The factor loadings on sofa and table are low and the latter has a negative rather than an expected positive sign. The extended index presented in the fourth column includes a wide range of durables on which information is available. Most of these have a low factor loading and high uniqueness and therefore only marginally relate to our common factor economic status. Only a cart, a torch and a leather mat seem to be relevant. The latter is confirmed by qualitative information on asset-based wealth from Bevan and Pankhurst (1996).

Based on the uniqueness-score in these three indices, we constructed the forth, specified, index by excluding toilet facilities and rooms per capita from the standard list of housing facilities and added cart, bed, torch and leather mat to the standard list of durables (fifth column). In the specified+ index in the sixth column we also include oxen, an important asset in agricultural societies. The factor loading on oxen is considerable, reflecting a relevant contribution to the underlying factor. The eigenvalue-score reported in the last row of table two allows us to say something about the fit of the wealth index. It gives an indication on the proportion of the total

variance in the asset variables that is captured by the factor extracted with principal component analysis. The first factor derived in the specified index has an eigenvalue of 2.95, while the specified+ index has an eigenvalue of 3.03. In these cases, the eigenvalue of the first components is slightly lower compared to those reported for other African countries in Filmer and Pritchett (1999).

5.   Geographical differences

The asset weights and indices discussed so far in this paper have been constructed and determined using the whole sample, covering 19 survey sites.[12] Given the diverse nature of the socioeconomic groups, agro-ecological environments and farming systems covered by the survey sites, it is expected that the assets included in an index will not be equally important in all sites. To explore these issues further, we compare factor loadings on the assets across the villages included in the sample on two asset indices. We use the specified index composed in section four and extend it with three assets from the standard list that appeared not to be relevant in the analysis presented in the previous section: toilet facilities, cooking fuel and the number of persons living in one room to explore potential reasons for low factor loadings on these assets in the rural Ethiopian context. The village specific factor loadings are listed in Table three. Comparing the loadings on assets across villages provide us with at least three important insights.

First, in each village some assets are dropped from the list such as piped water, a well, a leather mat or a cart. This is the case when there is no variation in ownership of that asset in a village, either because all households own/use a particular asset or because no one owns or

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[12] One site has been excluded from this analysis because of missing data on one or more of the variables included.

uses the asset. When conducting an analysis at a national level, this is not problematic as there is still variation in ownership across villages. At a village level however, the number of assets on which the index is based will reduce and one may want to think about adding assets that are locally relevant in distinguishing wealth differences.

Second, we see opposite signs on the factor loading for each asset across villages, meaning that ownership of an asset does not have the same type of effect in each of the villages. To some extent, this explains the low factor loadings on an asset at a national level; high positive loadings in some villages and high negative loadings in others single out into a low loading at a national level. One can, for example, compare the factor loadings on rooms per capita in village two and three. This means that an asset that is locally important in marking wealth differences between households does not get much weight in an asset-index used to capture wealth at a national level. Although this may not be problematic when interested in wealth effects at a national level, using the nationally representative weights at a disaggregated level will result in biased results. Moreover, excluding assets that do not contribute much to a factor at a national level may not be correctly reflecting the situation in a village.

Third, and related to this, even when most of the loadings on an asset have the same sign, the size of the loading can differ quite substantially across villages. This is for example the case for radio ownership that has a factor loading higher than 0.5 in village 10, 11, 12, 14 and 19, a particularly low factor loading in village 1, 2, 3 and 8 and a low negative load in village 6 and 9. Similarly, there are considerable differences across villages in the variation explained by the first component and it's eigenvalue.

These findings suggest one has to be careful in using a standard list of assets to construct an asset-based wealth index for the analysis of wealth differences at disaggregated levels. Assets that may be relevant to distinguish wealth differences at a national level may not provide a relevant distinction at a local level as ownership of that particular asset may not capture wealth differences in a specific locality. It is, therefore, advisable to work with a list of assets that is more specified to the local situation. Additional information such as previously collected quantitative data or qualitative information on wealth dimensions will be essential in selecting the assets for a locally relevant index and possibly in constructing the data collection modules used in household surveys.

Another issue related to the level of aggregation concerns the intra-household differences in wealth. So far, we have discussed the use of an asset-based index to compare wealth differences between households, and ownership of assets is defined and measured at a household level. In practice, not all assets may belong to the household as a unit but ownership of assets may reside in certain individuals within the household. Distinguishing wealth differences in the household will require even more detailed information about the local situation. Although very relevant for the study we embarked on, the subject of intra-household differences in wealth and asset ownership and relevant assets to measure this is beyond the scope of this paper.

6.   Asset-based wealth indices and food security

In the previous sections of this paper we have reviewed what assets could/should be included in an asset-based index for economic status in rural Ethiopia and discussed geographical differences in factor loadings on included assets across villages. We found the standard list of assets to proxy for economic wealth can be included in an analysis at a national level, but when the analysis is confined to a lower level of aggregation, especially when covering only one village, the standard list may not be sufficient. In such a case the researcher should construct a locally relevant list of assets, for example, by taking the relevant items from the standard list and extend it to include location specific assets.

To move away from the composition of the asset-based wealth index *per se* we turn to the use of an asset-based wealth index in estimating wealth differences in outcomes in this section and make a first comparison of outcomes and estimations based on asset indices with those based on per capita consumption. In this case, we focus on the relationship between wealth and self-reported food security, the number of weeks in a typical year that a household has substantially less to eat than otherwise. Of the 1405 households in the sample who answered this question, only 17 percent indicated they did not have any week in which they had substantially less to eat in a typical year. Of those who did report temporal food shortages, the average number of weeks was 13.3, with a minimum of 2 and a maximum of 52. The average number of weeks with substantially less to eat differs greatly across villages, ranging from 4.5 to 18 weeks.

A first glance on the relation between household economic status and food security is provided in table four. In this table, we list differences in the number of weeks in a typical year that a household has less to eat per wealth quintile. We constructed six sets of quintiles, five sets based on the asset-based wealth indices discussed in section five and for comparison one set based on per capita consumption figures (the mean per capita consumption as measured in the first and second round in 1994). The distribution based on the standard asset list of quintiles shows the mean number of weeks a household has substantially less to eat decreases per quintile, the difference between the second and the third quintile is, however, negligible. The distribution based on other asset indices provides a result that is counter-intuitive; the mean number of week for households in the third quintile is higher compared to those on the second quintile. At the same time the mean number of weeks per quintile is rather similar for each of these asset-based wealth indices. In comparison, the mean

number of weeks calculated for per capita consumption quintiles does show a pattern that is to be expected; for each quintile the number of weeks in a typical year in which a household has substantially less to eat decreases when wealth, proxied by per capita consumption, goes up. The mean number of weeks in the fifth quintile, 9.1, is, however, substantially higher compared to the mean number of weeks based on the asset-based wealth indices.

To investigate the relationship between wealth and food security further, we perform a number of explorative regression analyses. We regress the number of weeks in a typical year that a household has substantially less to eat on a number of explanatory variables, including wealth indices. We perform six regressions to compare the predictive power of the five asset-based indices and per capita consumption. Apart from the wealth indices, we also included the total acreage of land a household has access to, indicative of its potential to produce food, the size of the household and a set of village dummies that capture amongst others regional differences in food producing potential. We expect richer households as well as households with more land to report a lower number of weeks with substantially less food (a negative coefficient) while larger households are expected to have a higher number of weeks with less food, given the fact they have more mouths to feed.

The results are presented in table five. The sign on total land owned cannot be interpreted as it is not estimated with sufficient precision. The coefficients on household size and wealth have the expected sign and are significant, with the exception of the per capita consumption wealth index (significant at the 0.059 level). This suggests indeed that households with higher economic status experience fewer weeks with substantially less food than otherwise relative to households with a lower economic status. The differences between the regression results of the five different wealth indices are small, with slightly higher coefficients (and more precision in estimation) in the two specified indices. Given the explorative nature of these analyses, the results should be interpreted as preliminary only. These preliminary results do, however, confirm the findings of Sahn and Stifel (2003) that asset-based indices of wealth are at least as good a predictor of outcomes as are expenditures.

From the analysis presented above it is not exactly clear how to interpret the exact relationship between economic status and food security. There may be a direct link between assets and food security as assets can be used to smooth consumption, as

a source of income or by selling them. However, the assets included in the index are not those typically sold or used to generate income in response to food shortages or other shocks. [13] Alternatively, and in line with the argument of this paper, the ownership of assets signals economic status. In that case, higher economic status, reflecting for example higher (non-farm) income, may result in more and better options to smooth consumption. The analysis needed to unravel the precise mechanism behind the relationship between wealth and food security is beyond the scope of this paper. Yet, if these results were to be confirmed in other studies, a case could be made for using asset-based indicators of wealth to target of public interventions, whether on food security or in other fields. In such case, community-based (or district-based) targeting is likely to be most suitable to take the geographical differences in the ownership of specific assets into account.

7.   Conclusion

In this paper, we explored some issues related to the use of an asset-based wealth index as a proxy for long-term household economic status and extended the use of asset-based wealth indices to food security. In particular, we addressed the potential composition of an asset-based wealth index and considered the influence of geographical differences in asset-ownership and relevance by addressing the relevance of the standard list of assets used in the literature for the context of rural Ethiopia.

To this end, we used ERHS data on asset ownership to construct five different asset-based wealth indices and compared the factor loadings on the assets included, both at a national level covering 19 villages and on a village by village basis. The standard list of assets used in an index to compare economic status across different communities in one

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[13] The literature on buffer stocks predominantly refers to cattle as an important asset to be sold in times of stress (see for example Rosenzweig and Wolpin, 1993, and Kinsey, Burger and Gunning, 1998). If productive assets, such as cattle, are sold to smooth consumption, future food security may be put at risk.

country or across countries may be useful. However, some dimensions of wealth, such as the type of drinking water facilities or the type of building material used, are to some extent determined by the community or environment in which one lives. For this reason, the standard list may not be the most relevant list to capture wealth differences between households or individuals living in one community. A list of assets that is more specified to the local situation is, therefore, advisable. Additional information, such as the one of previously collected quantitative data or qualitative information on wealth dimensions is, therefore, essential in constructing such an index and the data collection modules underlying it.

We also looked at the predictive power of an asset-based wealth index in explaining differences in food security. We find that households with a higher economic status experience significantly fewer weeks of food insecurity compared to households with a lower economic status. Moreover, preliminary results suggest the relation between household economic status and food security is measured more precisely when we use an asset-based index of wealth compared to a wealth proxy defined as per-capita consumption. In such case, a well-defined list of assets may provide policy makers with an opportunity to distinguish households capable of smoothing consumption from those who are not, making it easier to target food security interventions.

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Appendix

Table 2: Factor loadings and uniqueness scores on assets for five different wealth indices

Assets included in the index:	Wealth index: standard assets		Wealth index: Young Lives Project		Wealth index: Extended ERHS asset list		Wealth index: specified asset list		Wealth index: specified +	
	Load	Uniq	Load	Uniq	Load	Uniq	Load	Uniq	Load	Uniq
Toilet	0.036	0.999	0.033	0.999	0.042	0.998				
Piped	0.570	0.676	0.544	0.704	0.576	0.668	0.571	0.674	0.550	0.697
Well	0.282	0.920	0.284	0.919	0.234	0.945	0.249	0.938	0.267	0.929
Open water	-0.600	0.640	-0.583	0.660	-0.579	0.665	-0.583	0.659	-0.566	0.680
Fuel	0.182	0.967	0.180	0.968	0.187	0.965				
Iron roof	0.649	0.579	0.639	0.592	0.635	0.596	0.649	0.579	0.650	0.581
Thatch roof	-0.570	0.675	-0.559	0.687	-0.562	0.684	-0.568	0.677	-0.556	0.691
Mud wall	0.735	0.460	0.750	0.437	0.731	0.466	0.727	0.471	0.727	0.471
Wood wall	0.735	0.460	-0.751	0.437	0.735	0.460	-0.724	0.476	-0.712	0.493
No. residents per room	-0.111	0.988	-0.103	0.989	-0.102	0.990				
Radio	0.274	0.924	0.279	0.922	0.284	0.919	0.290	0.916	0.314	0.901
Watch	0.220	0.952	0.226	0.949	0.209	0.956	0.222	0.951	0.244	0.947
Bed			0.254	0.936	0.217	0.953	0.224	0.950	0.269	0.927
Table			-0.168	0.972	-0.163	0.974				
Sofa			0.032	0.999	0.019	0.999				
Cart					0.225	0.949	0.234	0.945	0.256	0.935
Torch					0.251	0.937	0.247	0.939	0.249	0.938
Mill					0.025	0.999				
Cup-board					-0.041	0.999				
Pouch					0.036	0.999				
Weaving equipment					0.007	0.999				
Leather Mat					0.356	0.873	0.354	0.875	0.304	0.907
Oxen									0.354	0.875
Eigenvalue first factor	2.76		2.83		3.00		2.95		3.03	

Source: ERHS

Table 3. Factor loadings on asset index across different villages (numbered 1-20)

Asset	1	2	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Piped	0.73	-	0.04	-	-	0.02	0.12	-	-0.38	0.71	0.06	-0.21	-0.10	0.35	-	-	0.22	-	0.38
Well	0.14	0.25	-	0.49	0.85	-0.03	0.01	0.54	-	-	0.61	-	-0.05	-	-	-	-	-	-
Openwater	-0.78	-0.47	-0.16	-0.52	-0.27	0.07	-0.08	-0.54	0.55	-0.63	-0.28	0.30	0.08	-0.48	-	0.58	-0.52	-0.57	0.25
Iron roof	-	-0.06	-	0.73	0.84	0.82	0.85	-0.09	0.84	0.63	0.31	0.89	0.73	-0.46	-	-0.42	0.46	-0.53	0.44
Thatch roof	-	-0.66	0.71	-0.69	-0.71	-0.75	-0.85	0.59	-0.81	-0.63	-0.52	-0.81	-0.74	0.55	0.67	0.45	-0.29	0.15	-0.88
Mud wall	-0.37	0.46	0.87	0.73	0.85	-0.60	-0.34	-0.82	0.21	0.68	-	-0.04	0.70	0.51	-0.86	-0.48	0.71	0.75	0.69
Wood wall	0.33	-	-0.48	-0.73	-0.81	0.35	0.35	0.85	-0.20	-0.68	-	0.04	-0.70	-0.43	0.96	0.73	-0.32	-0.76	-
Radio	0.03	0.04	0.04	0.10	-0.01	0.48	0.04	-0.02	0.63	0.50	0.83	-	0.68	0.22	0.09	-0.21	0.49	0.57	0.35
Watch	0.35	0.32	0.49	-0.34	0.37	0.16	0.42	-0.07	0.27	0.66	0.55	0.68	0.34	0.09	-0.23	-0.31	0.11	0.31	0.01
Bed	-0.13	-	-0.38	0.67	0.35	0.36	0.47	-0.15	0.52	0.49	0.80	0.18	0.40	0.49	0.08	-0.44	0.50	-0.41	-0.33
Leather mat	0.55	0.15	-	-	-	-0.24	-0.22	-	-	-	-	-	-	-	-	-	-	-	0.32
Torch	-0.11	0.73	-0.30	0.29	-0.13	0.54	0.36	-0.12	0.29	0.12	0.38	0.61	0.05	0.30	0.21	-0.19	-0.50	0.17	-
Cart	-	-	-	-	-	0.53	-	-	0.63	0.51	-	-	-	-	-	-	0.14	0.40	-
Toilet	0.01	-	-0.10	-	-	0.37	0.24	0.17	0.60	0.73	0.36	0.33	0.17	0.19	-0.16	0.57	-	-	0.12
Fuel	0.04	-0.40	0.07	0.18	-0.15	0.19	0.19	0.13	0.19	0.68	0.19	-	0.23	0.14	-0.01	-0.60	0.25	-0.01	-0.47
Rooms pc	-0.05	0.28	0.55	-0.35	0.08	0.14	-0.21	0.11	0.14	0.02	-0.16	0.06	-0.19	0.36	0.23	0.38	-0.10	-0.06	0.37
Prop.	0.15	0.16	0.19	0.28	0.31	0.18	0.16	0.19	0.25	0.34	0.24	0.23	0.21	0.14	0.23	0.23	0.16	0.21	0.20
Eigenvalue	1.88	1.84	2.3	3.4	3.6	2.9	2.4	2.4	3.5	4.8	2.8	2.6	3.0	1.87	2.3	2.7	2.1	2.6	2.4

Source: ERHS

Notes: The numbers in the column represent the villages in the ERHS.

Table 4: Relation between asset-index and food security: mean number of weeks with substantially less to eat per wealth quintile based on the different type of indices

Type of index	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile
Standard	13.1	12.6	12.5	10.2	6.9
Young Lives	13.0	12.5	13.0	10.4	6.7
Extended Assets	13.1	12.4	12.9	9.6	7.2
Specified	12.9	12.4	13.1	9.9	7.1
Specified +	13.5	12.3	12.6	10.1	7.1
Per capita consumption (mean)	13.9	12.4	10.4	9.9	9.1

Source: ERHS

Table 5: OLS regression of the number of weeks in a typical year that a household has substantially less to eat on land, household size and wealth as reflected in different measures

	Standard	Young Lives	Extended	Specified	Specified +	Pc cons[1]
Total land	-0.02 (-0.27)	-0.02 (-0.21)	-0.02 (-0.22)	-0.02 (-0.22)	-0.00 (-0.02)	-0.03 (-.39)
Household size	**0.20 (2.66)**	**0.20 (2.67)**	**0.20 (2.66)**	**0.20 (2.55)**	**0.21 (2.83)**	0.11 (0.15)
Wealth	**-1.87 (-5.69)**	**-1.91 (-5.79)**	**-1.97 (-5.85)**	**-2.01 (-5.85)**	**-2.14 (-6.62)**	-0.10 (-.89)
Adj. R-squared	0.29	0.29	0.29	0.29	0.30	0.27
Observations	1400	1400	1400	1400	1400	1400

Source of data: ERHS

Notes: Village fixed effect included coefficients not reported in the table.

t-values in brackets

Bald figures are significant at 0.05 level

[1] In 1000 birr

CONSUMPTION SMOOTHING AND VULNERABILITY IN RURAL VILLAGES OF ETHIOPIA

Nigussie Tefera[1]

Abstract

Using panel data of year long intensive monitoring rural household survey, the study examines that covariant shocks lead to changes in consumption patterns while specific idiosyncratic shocks appear to be fully insured against. It is found out that to insure idiosyncratic shocks households use different copying strategies. However, during the surveys period households were less likely to sell livestock/livestock products to smoothen income shock caused by rainfall and crops failure due to frost/low temperature, water logging/flooding, insects etc. At the incidence of such shocks, households tend to seek for wage employment opportunities but are compelled to sell livestock/livestock products only in the absence of market for wage employment.

The impact of changes in total household income on consumption with controls for idiosyncratic shocks were also investigated and found that households are smoothing their consumption evenly across time. Further test of consumption smoothing (using average village income controlling for idiosyncratic shocks) indicated that there is a limit to which households insure against shocks through better-off households within the communities, i.e., the hypothesis of complete insurance is rejected.

Disaggregating a sample of farming households into asset poor and nonpoor, the study has also shown that asset poor households are more diversifying income sources than asset nonpoor households. However, most of them are with low returns; and hence they are more vulnerable than asset nonpoor households. Finally, since covariate shocks are stronger in explaining consumption patterns, the paper recommends that, community or group based interventions are essential.

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1. Introduction

Developing economies are widely characterized by low and volatile incomes and incomplete market for most goods and services (Townsend, 1995). The former together with poor development of financial or risk-sharing institutions make consumption smoothing an important issue in low-income countries like Ethiopia. According to World Bank's (2000) report, these countries are vulnerable to shocks that lead to reduction in welfare. The Millennium Development Goals (MDGs) is intended to reduce the proportion of these people whose income is less than one dollar a day by half between 1990 and 2015.

The shocks may be idiosyncratic (household specific i.e., affecting individual household) and/or covariate (affecting groups of households, communities, regions, or nations). While idiosyncratic risks include shocks associated with income failure, illness, shortage of agricultural inputs, etc., covariate risks include uncertainties associated with nature, markets (both input and output), social unrest, and policy and institutional failures (Weinberger and Jütting, 2000).

The types of shocks experienced affect the extent to which consumption can be smoothened. If the risks experienced are idiosyncratic, they can be smoothened through mechanisms that allow households to rely on others to share the repercussions of such shocks. However, if the shocks are common across group members, then they are covariate and cannot be insured or smoothed out by those within the group, because no one household experienced gains that could be shared (see Townsend, 1995; Morduch, 1999 and Skoufias and Quisumbing, 2003). Understanding the natures of these vulnerabilities and the informal and formal coping mechanisms that may mitigate shocks is a first step in establishing effective social protection programs or safety net systems (Skoufias and Quisumbing, 2003 and Harrower and Hoddinott, 2004).

Households in low-income economies use various copying strategies to help them reduce, mitigate or protect themselves from both income and consumption risks (Morduch, 1999) though incomplete markets or poor development of risk-sharing institutions make a distinction of their economies (Townsend, 1995). Households in a community, for instance, may informally agree to insure each other or provide state contingent transfers and remittances to friends and neighbors (Rosenzweig, 1988;

Besley, 1995 and Morduch, 1999), use their savings (Paxson, 1992), take loans from the formal financial sectors to carry them through the difficult times (Udry, 1994), sell assets (Deaton, 1992), send their children to work instead of school to supplement income (Jacoby and Skoufias, 1998), enter into new-income generating activities (Harrower and Hoddinot, 2004) or undertake ex-ante income smoothing strategies and adopt low-return, low-risky crop and asset portfolios (Rosenzweig and Binswanger, 1993).

While, on aggregate, a community may have developed sufficient mechanisms and be effectively smoothing consumption, there may be segments of the community excluded from participating, and they may, therefore, be vulnerable. Thus, exploring differences in household characteristics and characteristics of the particular coping mechanisms employed helps reveal the true extent of consumption smoothing of villages (Harrower and Hoddinot, 2004). Discovering who is the most vulnerable within a community by examining the abilities of groups to smoothen their consumption relative to each other could help governments and donors ensure that adequate coverage within the community occurs.

This study explores the strategies used by individual rural households in Ethiopia to avoid consumption shortfalls caused by shocks. This is not the first lesson on this topic. For instance, using short panel data of three/four rounds[2] and relying on recall of household total consumption and income for the "last four months" before survey, Dercon and Krishnan (2000) and Skoufias and Quisumbing (2003) have conducted similar analysis on Ethiopian rural households. However, to my knowledge, a year long intensive monitoring panel data nature has never been conducted so far. This study tries to bridge the research gaps by investigating character of such types of data collected at fortnight days interval for a little of one year during the course of the entire survey period. In the next section, theoretical framework is briefly described. In section 3, focus is given to source of data and basic descriptive statistics, while section 4 discusses basic findings. Section 5 briefly summarizes and presented the conclusions.

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[2] This included two survey rounds in 1994 (1994a and 1994b) and; a round of data collection in 1995 and 1997.

2. Theoretical framework

The model for consumption smoothing is developed based on the theory of full insurance initiated by Arrow (1964) and others (see Townsend, 1995). The theory of full insurance states that if households are risk averse, markets are complete, or if there are second best institutions that pool risks to achieve Pareto-optimal allocation, marginal utility of consumption across households will be equalized. This implies that the growth in household consumption will respond to the growth in village level (aggregate) consumption but not to idiosyncratic shocks or variation in income. Technically this means that the functioning of risk sharing institutions will mitigate idiosyncratic shocks and equalize the marginal utility of consumption across households within a village (see Deaton, 1992; Morduch, 1995 and Gertler and Gruber, 1997).

Imagine that a central planner of a village with N number of households tries to maximize the sum of life time utilities of members subject to the village level resource constraints, uncertainty, and predetermined social weight. Let via central planner, each household j get Pareto-share ω_j of aggregate income, with $\omega_j > 0$, $\forall j$ and $\sum \omega_j = 1$. And also let C_{jt} be consumption of household j at time t and λ_t the Lagrange multiplier associated with the aggregate resource constraint at time t. If we assume twice continuously differentiable utility functions with $U' > 0$ and $U'' < 0$, then, following Mace (1991), Cochrane (1991), Altonji, Hayashi and Kotlikoff (1992), Townsend (1994) and Dercon and De Weerdt (2002), we can write the first order condition of this problem as

$$U'(C_{jt}) = \frac{\lambda_t}{\omega_j} \tag{1}$$

Or it's differenced logarithmic equivalent

$$\Delta \ln(C_{jt}) = \Delta \ln \lambda_t \tag{2}$$

Equation (2) says that if optimal insurance is attained, then the growth of marginal utility of consumption in a given period should be equal for all households. For any two households i and j in the village, we can substitute away λ_t in (1) and write the first order condition as

$$\frac{U'(C_{jt})}{U'(C_{it})} = \frac{\omega_i}{\omega_j} \tag{3}$$

Which shows that the marginal utility of each household's consumption reflects its Pareto weight in the village. Following Deaton (1997) and Gertler and Gruber (2002), assume that within-period preferences are of the constant relative risk aversion type and can be represent by

$$U(C_{jt}) = (1-\rho)^{-1} \pi_{jt} n_{jt} \left(\frac{C_{jt}}{n_{jt}} \right)^{1-\rho} \tag{4}$$

π_{jt} accounts of intertemporal needs of the households which are not already captured by the household size, n_{jt}. Plugging (4) into (3), taking logarithms and rearranging terms give

$$\ln\left(\frac{C_{jt}}{n_{jt}}\right) = \ln\left(\frac{C_{it}}{n_{it}}\right) - \rho^{-1}\left(\ln\pi_{it} - \ln\pi_{jt}\right) - \rho^{-1}\left(\ln\omega_i - \ln\omega_j\right) \tag{5}$$

This equation holds across all the N-1 community that household j belongs to. Adding up these N-1 equations yields (Bardhan and Undry, 1999)

$$\ln\left(\frac{C_{jt}}{n_{jt}}\right) = \overline{C}_{Nwt} - \rho^{-1}\left(\frac{1}{N-1}\sum_{j=1}^{N-1}\ln\pi_{jt} - \ln\pi_{it}\right) - \rho^{-1}\left(\frac{1}{N-1}\sum_{j=1}^{N-1}\ln\omega_j - \ln\omega_i\right) \tag{6}$$

where $\overline{C}_{Nwt} = \dfrac{1}{N-1}\sum_{j=1}^{N-1}\ln\dfrac{C_{jt}}{n_{jt}}$ or average (logarithms of) village consumption at

time *t*. Note that the final tem in equation (6) is a time invariant fixed effects that can be purged out by taking first difference.

$$\Delta \ln \left(\frac{C_{jt}}{n_{jt}} \right) = \Delta \overline{C}_{Nwt} - \rho^{-1} \Delta \left(\frac{1}{N-1} \sum_{j=1}^{N-1} \ln \pi_{jt} - \ln \pi_{it} \right) \qquad \textbf{(7)}$$

which implies that under the full insurance risk sharing hypothesis households resources that are uncorrelated with shifts in preferences not affect consumption growth once aggregate resources are controlled for. Numerous studies have made use of equation (7) to test the full insurance hypothesis at village level.

The version of equation (7) that is more commonly encountered in the empirical literature (e.g., see Ravallion and Chaudhurin, 1997 and Jacoby and Skoufias, 1998) is of the form

$$\Delta \ln C_{jtv} = \sum \theta_{tv} \left(VD_{tv} \right) + \beta \Delta \ln y_{itv} + \varphi x_{jtv} + \Delta \varepsilon_{jtv} \qquad \textbf{(8)}$$

Where $\Delta \ln C_{jtv}$ and $\Delta \ln y_{jtv}$ denote changes in log per capita consumption and change in log per capita income of household j in period t in community v, respectively; VD_{tv} is a vector of village dummies interacted by survey period (visit) to capture all common shocks at the village level; φX_{jtv} is vector of time varying household characteristics; θ_{tv}, β and φ are parameter to be estimated; and $\Delta \varepsilon_{jtv}$ is the household specific error terms capturing changes in the unobservable components of household preferences.

This specification used to test the extent of consumption smoothing achieved within a community by regressing changes in individual household income against changes in individual consumption, while controlling for the effects of covariate shocks.

Following the same general approaches Dercon and Krishnan (2000), Skoufias and Quisumbing (2003) and Harrower and Hoddinott (2004) use shocks instead of income. Their measure of vulnerability is basically determined by the coefficient of shock variables estimated from a regression equation such as

$$\Delta \ln C_{jtv} = \sum \phi_i S(i)_{jtv} + \sum \theta_{tv} \left(VD_{tv} \right) + \varphi x_{jtv} + \Delta \varepsilon_{jtv} \qquad \textbf{(9)}$$

Where $\phi_i S(i)_{jtv}$ is a set of dummy variables indicating the occurrence of ith idiosyncratic household shocks at time t in community v; ϕ_i is a parameter to be estimated, all the other variables and parameters retain definitions given in equation (8). In the specification of equation (9), the parameter ϕ provides an estimate of the extent to which idiosyncratic income shocks plays a role in explaining the household specific consumption smoothing[3]. The expected value of ϕ is zero when the shock has no explanatory power in explaining household consumption.

Moreover, the effect of changes in household and village average income against household consumption is estimated by

$$\Delta \ln C_{jt} = \alpha + \beta \Delta \ln y_{jtv} + \gamma \Delta \left(\overline{\ln y_{tv}} \right) + \varphi x_{jtv} + \varepsilon_{jtv} \tag{10}$$

Where $\Delta \left(\overline{\ln y_{tv}} \right)$ denotes the change or growth rate in average village income at period (visit) t of village v and all other variables are as previously defined in equation (8). This specification allows the growth rate in household consumption to be determined by the growth rate in household income as well as the growth rate in average income, denoted by $\Delta \left(\overline{\ln y_{tv}} \right)$.

If specific idiosyncratic income shocks appear to have little effect on consumption, the way in which households react to such shocks were explored through estimating similar model to that of equation (9), whereby the effect that income shock has on the probability that a household will engage in particular coping strategy is tested. A series of binary variables was used to signifying whether the household reported, or was shown to undertake, a particular coping strategy during that period. Whether experiencing an income shock increased the likelihood that the households pursued specified strategies is estimated using a fixed effects logit model of the form

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[3] This is equivalent to imposing the restriction that θ_{tv} and φ equal zero

$$prob\left(Y_{jtv}=1\right)=\frac{\exp\left(\mu_{j}+\phi S_{jtv}+\varphi x_{jtv}\right)}{1-\left(\mu_{j}+\phi S_{jtv}+\varphi x_{jtv}\right)} \tag{11}$$

This model allows taking into account for the role of household-specific, time invariant observed and unobserved factors (μ_{j}). Here, the dependent variable is used to denote use of any variety of coping strategies related to activities such as livestock sales, food/crop received through food for work, credit, remittance, food/crop received from friends or relatives within the communities. Using equation (11), separate fixed-effects regressions were run for each of the dependent variables. Households whose value of y_{jtv} did not vary across rounds (visits) were dropped from the estimation. And where the shock has no explanatory power for why the household adopted the coping strategy, the expected value of ϕ is zero.

Finally, whether certain groups of communities within villages are better able to smooth consumption relative to their reference groups in the face of idiosyncratic income shocks are estimated by

$$\Delta\ln C_{jtv}=\sum_{tv}\theta_{tv}\left(VD_{tv}\right)+\beta\Delta\ln y_{itv}+\psi Z+\delta\left(Z*\Delta\ln y_{itv}\right)+\varphi x_{jtv}+\Delta\varepsilon_{jtv} \tag{12}$$

Where Z is a binary variable to identify those households possessing the characteristic of examination. The magnitude and sign of the δ coefficients indicate whether there is higher or lower covariation between income and consumption changes in the group of examination relative to its reference group.

3.   Source and basic descriptive statistics of the data

The database for this study has come from the Year-Long Intensive Ethiopian Rural Household Survey (YLIERHS) conducted in 2000/01 by the Economics Department of the Addis Ababa University (AAU) and financed by USAID/Ethiopia. YLIERHS is the second part of 5th round Ethiopian Rural Household Survey (ERHS). While the

first part of 5th round covers a one-shot household surveys in 18 villages and covered 1,685 households, the second part was designed to record transactions and activities as they occur instead of recall in the first part. In that regard four villages out of 18 were selected for the purpose. From each village 62 households were selected that yield a total sample size of 247 households[4]. The first visit (survey) was conducted in April, just at the beginning of first plough. So as to make the data more reliable, each household was revisited 25 times during the course of the entire survey period, or once every two weeks for a period of one year (see Annex I).

As the villages were selected to be representative of the main agro-ecological zones, the survey included villages producing different cereals, using oxen to plough, in the central highlands (Yetmen, Debrebrehan and Eteya) and a village producing coffee, inset and chat in the South (Azedebo). These agro-ecological zones are more conducive for growing barley (Debrebrehan), teff (Yetmen), wheat (Eteya) and perennial crops (Azedebo). Animal husbandry is integral to their farming systems, particularly in Debrebrehan.

In the survey, information on household demography, landownership, land use, labor use on each plot, source and level of non-agricultural income, asset ownership, food and nonfood consumption, etc., was collected. As indicated in the data set, information on shocks[5] (exogenous), events such as rainfall shock[6] and crop shock[7], loss of productive time due to religions, funeral, feasts etc., ceremonies, and illness is included. Table 1 shows, along with some basic descriptive data for the sample, that such shocks are common. Approximately, more than 40 percent of the sample households, except Azedebo, reported rainfall shock and loss of productive time due to religions, funerals, feast, etc., ceremonies. Crop shock was all reported to be between 11 percent in Debrebrehan to 64 percent in Yetmen. Almost more than a quarter of the sampled households reported at least one economically active member

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[4] One household is dropped due to incomplete information.
[5] All data on shocks are self-reported.
[6] It is a shock for either too much, quite a lot, not enough, far too little etc., rain for crop involved or no rain when it should have to rain.
[7] It is a shock when crops were affected either by frost/low temperature, wind/storm, water logging/flooding, parasites/plant diseases, insects, livestock trampling/eating and birds/other animals/or weeds problems and resulted in either noticeable damage to crops, significant loss to crops, major loss of crops and/or causes total crop failure.

of the household loss productive time due to illness for more than 7 working days. Lack of access to market[8] were reported by 70 percent of the sampled households and it became more striking in Yetmen and Azedebo, where more than 90 and 80 percent of sample households reported to have no such opportunities, respectively.

On average, household heads aged a little over mid-forty with regular family sizes range between 5 and 8, although the largest household exceeds 10 members (Table 1). In all villages, household members are less practicing migrating-out/in for possible job opportunities during the course of surveys period as the change in family size between surveys (visits) indicate only very slight change in family size. Females are heads for 17 percent of sample households, which account for 16 percent in Debrebrehan, Yetmen and Eteya and 23 percent in Azedebo. To see the extent to which households are vulnerable, total households were disaggregated into asset poor and nonpoor[9], as measured by livestock holding[10]. The majority of the sample households (about 60 percent) were asset poor. For instance, more than 90 percent in Azedebo and 70 percent in Yetmen are asset poor households. On the contrary, about 80 percent of households in Debrebrehan are asset nonpoor households.

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[8] Interested in working extra, but no casual wage employment or food-for-work program, credit needed but not acquired from relatives or government and/or fertilizer, chemicals and improved seed needed but not available to buy on time etc. However, only interested in working extra but no wage employment or food-for-work program shocks are used in the regression analysis.
[9] Asset nonpoor households have livestock holdings in the top two quintiles and asset poor households have livestock holding in the bottom three quintiles (see Annex III).
[10] Equivalently measuring land holding can also be used.

Table 1: Means and standard deviations of household characteristics

	Whole sample	Villages			
		Debrebrehan	Yetmen	Eteya	Azedebo
Household characteristics					
Age of household head (in years)	47.53 (14.45)	52.21 (15.24)	47.02 (16.00)	45.69 (13.12)	45.21 (12.41)
Household size, Visit (1- 5)	6.79 (2.79)	6.08 (1.57)	5.28 (2.34)	8.18 (3.33)	7.61 (2.63)
Change in household size between visits	-0.19 (0.97)	-0.16 (0.75)	-0.07 (0.54)	-0.60 (1.26)	0.05 (1.06)
Household head dummy: 1 if female household head; 0 otherwise	0.17 (0.38)	0.16 (0.37)	0.16 (0.37)	0.15 (0.36)	0.23 (0.42)
Education of head	0.38 (0.49)	0.18 (0.39)	0.25 (0.43)	0.53 (0.50)	0.58 (0.50)
Asset nonpoor dummy: 1 if households have livestock holding in the top two quintiles; 0 otherwise	0.40 (0.49)	0.80 (0.41)	0.25 (0.44)	0.48 (0.50)	0.05 (0.21)
Asset poor dummy: 1 if household have livestock holding in bottom three quintiles; 0 otherwise	0.60 (0.49)	0.20 (0.41)	0.75 (0.44)	0.52 (0.50)	0.95 (0.21)
Income shock to household					
Rainfall shock dummy: 1 if unbalanced rainfall on plots; 0 otherwise	0.38 (0.24)	0.49 (0.16)	0.41 (0.24)	0.42 (0.30)	0.20 (0.12)
Crop shock index dummy:1 if shock index is>=25%; 0 otherwise	0.34 (0.34)	0.11 (0.16)	0.64 (0.30)	0.40 (0.39)	0.21 (0.20)
Loss of productive time due to religions, funerals etc., ceremonies dummy: 1 if loss; 0 otherwise	0.41 (0.24)	0.69 (0.08)	0.42 (0.10)	0.47 (0.10)	0.07 (0.05)
At least one active member of household loss productive time due to illness dummy: 1 if loss; 0 otherwise	0.32 (0.28)	0.33 (0.25)	0.24 (0.34)	0.31 (0.28)	0.40 (0.26)
Lack of market opportunities dummy: 1 if Interested in working but no wage employment opportunities etc; 0 otherwise	0.70 (0.46)	0.47 (0.50)	0.92 (0.27)	0.54 (0.50)	0.85 (0.35)
Income from sales, loan, remittances, transfer payments, gift etc					
Net income from sales of livestock/livestock products (in Birr)	757.21 (1017.14)	1038.06 (1001.83)	493.02 (518.49)	788.70 1492.14	618.99 (698.41)
Loan (in Birr)	153.36 (404.87)	192.42 (664.12	72.46 (196.62)	126.64 248.96	220.63 (326.44)
Remittances, transfer or gift received (in Birr)	257.93 (243.07)	309.61 (192.99)	138.76 (103.85)	381.31 (309.65)	200.14 (242.37)

Source: Own calculation from survey data

Note: Values in the parentheses are standard deviations

As a mean of income smoothing, households (poor and nonpoor) diversify noncrop income such as sale of livestock, loan, agricultural and nonagricultural labor, and remittance/transfers etc. Fig.1 presents percentage of households reporting noncrop income per survey (visit). These activities were mostly concentrated to food gifts from families and friends, livestock/livestock product sales. They vary from visit to visit. There are visits where these concentrations extend 45 to 65 percent (see Fig.1 and Annex III). Petty trade, agricultural and nonagricultural wage labor, services etc., accounted for less than 20 percent of noncrop income.

Although households diversity to noncrop income for the purpose of income smoothing, the net incomes from noncrop sources are very low. For instance, the net income from sale of livestock was only averaged 1000 Birr per year in Debrebrehan, where it was the second important line of activity. It was less than 800 Birr in other villages; and even less than 500 Birr in Yetmen. Furthermore, Yetmen was less favored to loan and remittances/transfer as compared to other villages. In Yetmen, the average income from loan and remittance was limited to less than Birr100 and 150, respectively, while it was greater than Birr 150 and 200 in other three villages (Table 1).

Fig.1. Percentage of household reporting noncrop income
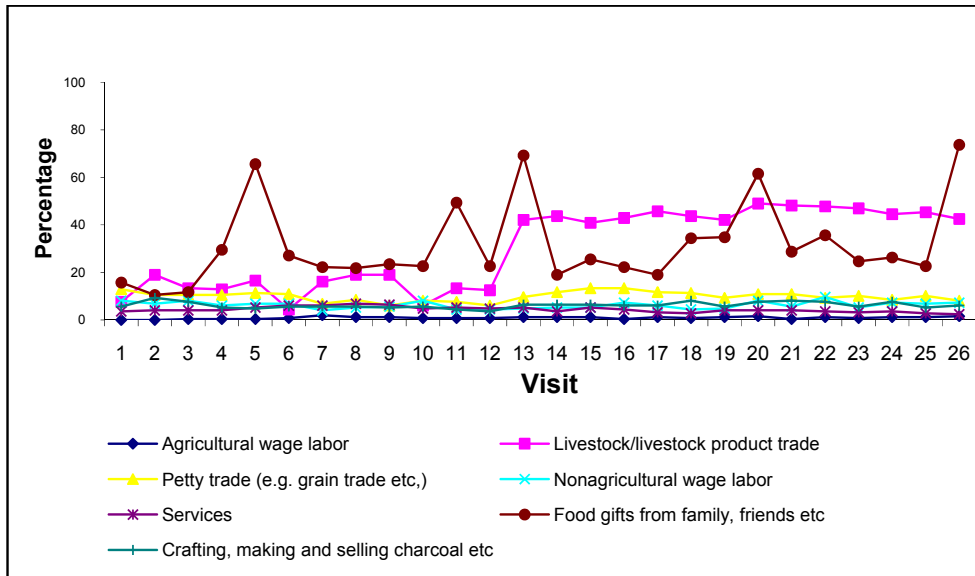
Source: Own calculation from survey data

Furthermore, the per capita food consumption (purchased and value of consumption from own harvest) and nonfood consumption in the villages were very small, with biweekly per capita median consumption floating between 20 to 35 Birr (i.e., 1.50 to 2.50 Birr per capita per day). The largest share was per capita food consumption, over 70 percent followed by the per capita nonfood consumption and others (gifts, remittances and transfers) received, respectively (Annex IV). There is also clear evidence that households try to protect food consumption across surveys (visits). Thus, median food consumption varies by less than 10 percent across visits. In contrast, nonfood consumption is considerably more volatile (see Fig. 2).

Fig. 2. Change in per capita food, nonfood and total consumption per visit
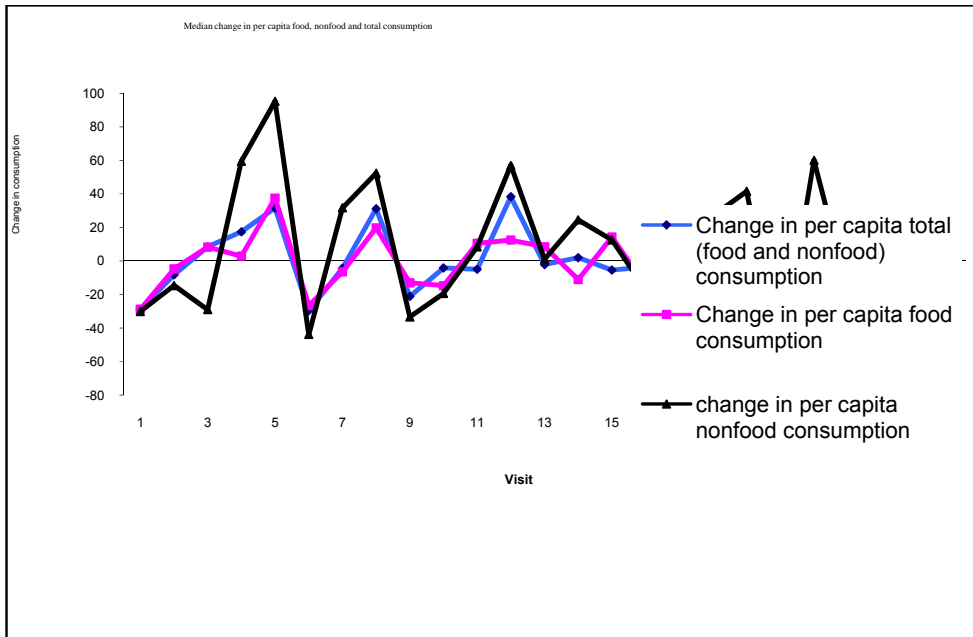
Source: own calculation from survey data

4. Consumption smoothing and vulnerability: discussion of basic findings

This section begins through examining whether the incidence of self reported specific idiosyncratic shocks such as rainfall and crop shocks, lack of market opportunities etc., have a significant impact on the household consumption. This is followed by investigating how households protect consumption against these specific idiosyncratic shocks through examining the coping strategies they employ. Then, explore whether all idiosyncratic shocks as represented by changes in total incomes affect consumption. Finally, it examines which groups are relatively more vulnerable in a consumption smoothing sense as a result of changes in income.

Empirical results of estimating equation (9) are specified in Table 2[11] below. Five representation variables were used for income shock[12]: rainfall and crop shocks, households are interested in extra wage employment including food-for-work, etc., nevertheless there is no such opportunities, at least one members of household loss productive time due illness and own labor use for productive activities (in person days).

When only these idiosyncratic income shocks regressed against change in real total consumption (see column 1 of Table 2), only changes in log of own labor use for productive activities (in person days) appear to have a positive effect on consumption. It indicated that an increase in own labor use increases total household expenditure by 13 percent. However, when progressively controlling for the representation of village common shocks (covariate shocks), the significance of the coefficient (including the coefficient of other idiosyncratic shocks) is not everlasting (see columns 2 and 3).

The coefficients of covariate shocks are statistically significant (as shown by F-statistic) implying that covariate shocks explain variations in consumption over time (see columns 2 and 3). The key finding of this paper is then the specified idiosyncratic

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[11] Outline of Huber (1967) and White (1980) methods are used to correct standard error for heteroscedesticity

[12] There is statistically significant difference between mean of real log total expenditure for all shocks reported (see Annex III).

shocks have little significant impact on consumption in the villages. By contrast, covariate shocks appear to be very important in explaining fluctuations in consumption (see column2). For instance, loss of productive time due to religions, feast, funerals etc., and other ceremonies would affect total consumption at 10% of level of significance[13]. Similar results were obtained when socio-economic characteristics are included (see Table 2 column 3).

When household fixed effect regression applied, while lack of market opportunities for wage employment decrease real per capita total consumption by 10 percent, change in log of own labor input for productive activities (in person days) increase by 3 percent (see Table 2 column 4). In addition, the regression is controlled for age-sex categories (I report only significant one). For instance, family size of households, female headed household, male and female household members aged between 11 and 15 years and male household members aged between 16 and 64 are among controlled variables influencing consumption expenditure significantly (see Table 2 column 3).

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[13] Households' labor endowment is controlled by including own labor used (in person days) in the regression.

Table 2: Least squares determinants of change in real total per capita consumption

	(1) Income shocks	(2) Idiosyncratic and village common shocks	(3) Idiosyncratic, common shocks and socio-economic characteristics	(4) Household fixed effects regression
Income shocks				
Rainfall shock dummy: 1 if rainfall shock (unbalanced rainfall per plot) is reported; 0 otherwise	0.074 (0.49)	0.150 (1.01)	-0.195 (1.49)	0.014 (0.46)
Crop shock dummy: 1 if severity of crop affected shock index per plot is >=25%; 0 otherwise	0.130 (0.53)	-0.085 (0.35)	0.018 (0.08)	0.047 (0.81)
Illness shock dummy: 1 if at least one active member of household loss productive time due to illness; 0 otherwise	-0.128 (1.16)	-0.117 (1.10)	0.024 (0.25)	0.028 (1.13)
Lack of market dummy: 1 if interested in working but no wage employment opportunities; 0 otherwise	-0.045 (0.42)	-0.147 (1.37)	-0.050 (0.48)	-0.110 (3.36)***
Change in log of own labor input in person days	0.131 (2.37)**	0.003 (0.05)	0.047 (0.83)	0.034 (2.90)***
Villages dummies interacted with round (F-test)				
Change in log share of number of days not worked due to religious etc ceremonies		1.68*	1.89*	
Autumn (Fall) season (Sep. - Nov.)		0.99	4.08***	
Winter season (Dec. - Feb.)		2.99***	1.42	
Spring (Vernal) (March- May)		3.33***	2.90**	
Socio-economic characteristics				
Age of household head (in years)			-0.000 (0.12)	-
Education level of household head			0.001 (0.38)	-
Family size of households			0.003 (2.26)**	0.021 (1.27)
Household head sex dummy: 1 if female headed			0.027 (3.77)***	-
Total number of male hh member aged between 11 and 15 years			-0.005 (2.73)***	0.006 (0.48)
Total number of female hh member aged between 11 and 15 years			-0.004 (1.93)*	-0.008 (0.51)
Total number of male hh member aged between 16 and 64 years			-0.001 (1.62)	-0.001 (0.21)
Constant	0.009 (3.21)***	0.192 (3.61)***	0.135 (2.70)***	-0.130 (1.15)
F-statistic	1.88	4.00***	3.41***	2.28**

Note: Dependent variable is change in log real per capita consumption (food, nonfood and value of gifts received) between rounds (visits). The total number of observation is 6175 and the total number of group (sample size) is 247. Absolute value of t-statistics is in parentheses. *= significant at 10%; **= significant at 5% and ***= significant at 1%. Standard errors are corrected for heteroscedasticity using Huber-While methods.

4.1 Income risk and household coping mechanisms

As specific idiosyncratic shocks have little impact on consumption exploring the coping strategies used are essential. There is no single coping strategy used by households in response to idiosyncratic income shocks; rather a portfolio of strategies was employed. Table 3 reports the effect each shock has on the likelihood of a household adopting a response to an idiosyncratic shock for the full sample and for a disaggregated sample of asset-poor and asset nonpoor households using equation (11). The result reported has shown that rainfall and illness shocks increases the probability that the household reports food/crop received through food-for-work and credit as survival strategy. When examining these shocks across wealth classification, while both groups were significantly more likely to use these strategies for rainfall shocks, only asset poor households use such coping strategies for illness shocks.

Likewise, while crop shocks increase the likelihood that households engaged in food/crop received through food-for-work, lack of market for wage employment increases the opportunities that households use credit as endurance strategies. Further examination of these shocks across asset nonpoor and asset poor households shows that while both groups are more likely to have food/crop received through food-for-work for crop shock, only asset poor households are more likely to have credit for lack of wage market shock. On the other hand, households that experience idiosyncratic income shocks related to crop failures are less likely to use credit for whole sample, asset poor and asset nonpoor households.

Table 3 also has shown that households are less likely to sell livestock/livestock products to smooth rainfall and crop shocks for sample as whole, asset poor and nonpoor households during the surveys period. However, they sell livestock/livestock products if the shock is due to lack of wage employment opportunities. This implies that at incidence of such shocks households tend to seek for wage employment opportunities but are compelled to sell livestock/livestock products only in the absence of such opportunities. More likely smoothing of rainfall and crop shocks through food-for-work program further strengthened the evidence. Moreover, since food-for-work program is also part of wage employment, its absence is less likely used to smooth income shock of wage employment for the sample as a whole and for asset poor households.

Table 3: Household fixed effects Logit estimates of household coping responses to idiosyncratic shocks.

	Income shocks				
	Rainfall shock on plots	Crop shock index dummy (1 if >25%)[14]	Interested in working, but no wage employment etc	At least one member of the household lost productive time due to	Number of groups
Sales of Livestock					
Household had livestock sales dummy: 1 if yes; 0 otherwise	-0.961** (10.87)	-0.797** (7.69)	1.041** (9.16)	0.025 (0.26)	221
Asset poor	-0.760** (6.01)	-0.753** (5.41)	0.781** (5.15)	0.021 (0.17)	131
Asset nonpoor	-1.137** (9.31)	-0.852** (5.49)	1.353** (7.88)	0.032 (0.21)	90
Food/crop received through food for work					
Household had food/crop through food for work programs: 1 if yes:	1.026** (5.86)	0.595** (2.70)	-0.403* (1.63)	0.402** (1.95)	80
Asset poor	1.254** (5.52)	0.527** (1.89)	-0.556* (1.80)	0.404** (1.99)	63
Asset nonpoor	0.706** (2.60)	0.711** (1.97)	-0.143 (0.37)	0.204 (0.54)	27
Credit					
Household had credit received for consumption: 1if yes	0.506** (4.92)	-0.634** (4.92)	0.539** (3.90)	0.434** (3.97)	112
Asset poor	0.507** (4.14)	-0.690** (4.57)	0.687** (4.19)	0.549** (4.46)	83
Asset nonpoor	0.503** (2.66)	-0.473** (1.94)	0.131 (0.48)	-0.006 (0.03)	29
Remittance					
Household had remittance since last visit: 1 if yes	-0.083 (1.10)	-0.099 (1.15)	-0.103 (1.03)	-0.082 (0.93)	247
Asset poor	0.348** (3.23)	-0.151 (1.34)	0.064 (0.50)	-0.031 (0.29)	151
Asset nonpoor	-0.198* (1.85)	-0.024 (0.18)	-0.349** (2.18)	-0.172 (1.15)	96
Food/crop gift received within community					
Household had food/crop received as gifts from relatives/friends within community: 1 if yes	-0.384 (1.39)	0.427 (1.55)	-0.688* (1.81)	0.316 (1.18)	66
Asset poor	-0.445 (1.16)	0.948** (2.84)	-1.625** (3.23)	0.483 (1.50)	40
Asset nonpoor	-0.313 (0.78)	-0.787 (1.25)	0.477 (0.99)	-0.049 (0.10)	26

Notes: Household size, age-sex categories are included in the regression but insignificant. Z-values reported in brackets. *= Significant at 10%; **= Significant at 5%. I estimated 60 separate logit equations i.e., three separate logit equations for each shock versus copying mechanisms by whole sample, asset poor and asset nonpoor.

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[14] Statistical significant test for cut points and all self reporting shocks are reported (see Annex III).

Remittance and food aids from relatives or friends within community are other coping strategies. Asset poor households are more likely to receive remittance for rainfall shock and food aids for crop shock. In contrast, asset poor and nonpoor households are less likely to receive food aids and remittance as a result of lack of market opportunities, respectively. In general, asset poor households are looking for different coping strategies to income shocks observed as compared to asset nonpoor households. Thus, asset poor households are more vulnerable to consumption expenditure.

4.2   Household noncrop income diversification

This test is used to explore whether shocks induced households to enter into noncrop activities again disaggregating the sample into poor and nonpoor households. Although virtually all households are farmers and have access to land, they do also participate in other non-crop income diversification activities in responses to shocks (this does not, of course, necessarily mean that the decision of households to diversify income is after the occurrence of crop failure). These include agricultural and non-agricultural wage employment, livestock and petty trade, crafting, etc., (see Table 4).

Table 4 shows that crop failure shock increases the likelihood that poor households reported income from agricultural and non-agricultural wage laborer. Moreover, asset poor households were more likely to undertake petty trade activity as a result of rainfall and illness shocks. Meanwhile, the likelihood of earning through livestock trade increased for wage employment shock, but decreased for rainfall and crop shocks at all levels.

Lack of wage employment opportunities increases the likelihood of the households to undertake crafting, making and selling of charcoal activities. These activities are less likely undertaken for rainfall shock (see Table 4). This implies that when there is rainfall shocks households first seek for wage employment and if it is unavailable they would look for crafting activities. This is probably due to culturally abused prerogatives given to craftsmen and its less profitability.

Generally, asset poor households are more likely to enter in to different activities as responses to income shocks. However, most of them have low returns and are remedies for only a short period. Thus, asset poor households are again more vulnerable than asset nonpoor households.

Table 4: **Household fixed effects logit estimates of household income diversification**

	Income shocks				
	Rainfall shock on plots	Crop shock index dummy (1 if >= 25%)	Interested in working, but no wage employment etc	At least one member of the household lost productive time due to illness	Number of groups
Agricultural wage laborer	-0.100	0.189	-0.269	-0.367	
	(0.23)	(0.46)	(0.48)	(0.70)	18
Asset poor	-1.094	1.527**	0.683	-0.592	
	(1.56)	(1.91)	(0.90)	(0.90)	13
Asset nonpoor	0.937	-0.366	-0.125	0.055	
	(1.45)	(0.69)	(0.20)	(0.07)	5
Non-agricultural wage laborer	0.244	0.591**	0.319	-0.008	
	(1.46)	(3.32)	(1.53)	(0.04)	71
Asset poor	0.226	0.618**	0.300	0.014	
	(1.11)	(2.95)	(1.26)	(0.07)	48
Asset nonpoor	0.282	0.518	0.381	-0.070	
	(0.96)	(1.54)	(0.88)	(0.19)	23
Livestock trade	-0.961**	-0.797**	1.041**	0.022	
	(10.88)	(7.69)	(9.16)	(0.23)	221
Asset poor	-0.762**	-0.753**	0.781**	0.012	
	(6.02)	(5.42)	(5.15)	(0.12)	131
Asset nonpoor	-1.137**	-0.852**	1.353**	0.033	
	(9.31)	(5.49)	(7.88)	(0.21)	90
Petty trade (e.g. grain etc)	0.237	-0.115	-0.316	0.256*	
	(1.54)	(0.69)	(0.15)	(1.69)	84
Asset poor	0.294*	-0.205	-0.383	0.393**	
	(1.69)	(1.08)	(0.17)	(2.32)	65
Asset nonpoor	0.033	0.198	0.013	-0.312	
	(0.10)	(0.57)	(0.02)	(0.86)	19
Crafting, making and selling of charcoal	-0.209	0.207	1.124**	-0.195	
	(1.19)	(1.08)	(5.56)	(1.03)	92
Asset poor	-0.428*	0.299	2.449**	-0.773	
	(1.85)	(1.32)	(7.18)	(0.35)	46
Asset nonpoor	0.101	-0.328	-0.428	-0.531	
	(0.38)	(0.09)	(1.16)	(1.34)	46
Food gift from families, friends etc	-0.012	-0.217	-0.171*	0.023	
	(0.16)	(0.26)	(1.79)	(0.30)	247
Asset poor	-0.161	-0.573	-0.078	0.083	
	(1.60)	(0.53)	(0.63)	(0.78)	151
Asset nonpoor	0.145	0.022	-0.296**	-0.115	
	(1.41)	(0.18)	(1.97)	(0.83)	96

Notes: Household size, sex-age categories are included in the regression but insignificant. Z-values reported in brackets. *= Significant at 10%. **=Significant at 5%. I estimated 72 separate logit equations i.e., three logit equations are estimated for each shock versus income diversification by whole sample, asset poor and asset nonpoor).

4.3   Further tests of consumption smoothing

In the regression analysis of previous sections, we have seen that households whose consumption experienced idiosyncratic shocks are insured against through different coping strategies. This section investigates how income changes are transmitted to consumption changes. It complements the previous section by investigating further the nature of consumption smoothing by examining the household attributes associated with such vulnerability.

Equation (8) treats the stronger version of consumption smoothing and the impact of changes in total household income on changes in consumption with controls for covariant shocks term. Specification (1) reported in Table 5 shows that the coefficient of changes in income given income shocks is statistically not significant for all samples, asset poor and nonpoor households. Thus, households attempt to spread resources to smooth consumption evenly across time through the use of mechanisms that reduce or mitigate income shocks, or those that help them cope with the effects of such shocks. In other words, a household allocates proportionally equal budget every period as insurance, through different coping strategies adopted.

Treating of positive and negative shocks symmetrically further strengthens the finding by assuming that positive and negative shocks have the same impacts[15]. Specification (2) takes this into account, including positive and negative shocks as separate regressions.   While the coefficients on negative shocks are larger in magnitude for full sample and asset poor households, the F-test that positive and negative income shocks have statistically different impacts on changes in consumption do not reject the null hypotheses indicating that positive and negative shocks have equal effects in all cases[16].

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15 As method was suggested by Dercon and cited in Harrower and Hoddinott, 2004.

[16] The regression is controlled for other variables such as female household head, age-sex categories, household head age and age squared etc. In most of the cases, some specific variable like age and age-squared are statistically significant at 5% levels of significance. Also change in log per capita of household consumption was regressed against only change in log per capita household incomes but there are no significant changes on the parameters estimated.

Table 5: The impact of changes in log household per capita income on log household per capita consumption

(Dependent variable: change in log per capita household consumption)

	Parameters estimate			
	(1)	**(2)**		
		Positive	Negative	Sample size
Sample	$\Delta \ln y_{jtv}$	$\Delta \ln y_{jtv}$	$\Delta \ln y_{jtv}$	
Full sample	0.020	0.059*	0.118**	247
	(0.43)	(1.62)	(3.54)	
Asset poor household	0.031	0.014	0.136**	151
	(0.50)	(0.30)	(3.08)	
Asset nonpoor household	0.022	0.104*	0.076	96
	(0.31)	(1.83)	(1.42)	
F-test				
Test 1: full sample	0.67 (p=0.41)			
Test 2: Asset poor	0.17 (p=0.67)			
Test 3: Asset nonpoor	1.36 (p=0.28)			

Notes: * = significant at 10%. ** = Significant at 5%. Absolute value of t-statistics is in the parentheses. Standard errors are corrected for heteroscedasticity using Huber-white methods.

4.4   Partial consumption insurance

Partial consumption insurance tests the effects of growth rate in average income on household expenditure. Using equation (10), the top panel of Table 6 provides regression result estimates of average income against household consumption for all households and disaggregation based on wealth. Neither for the sample as a whole nor based on wealth disaggregation are the coefficients of average incomes significantly different from zero in explaining consumption expenditure. The findings, therefore, signify that although rural households of Ethiopia have traditions of informal mutual insurance scheme with better-off neighboring households within communities, the shock is not completely insured through such mechanisms i.e., there is a limit to which households can insure against consumption through better-off neighboring households.

Table 6 also examines whether positive and negative representation of covariate shocks has different impacts. These are reported in the lower panel of Table 6. As in the case of Table 5, while the coefficients on negative income shocks of all

households and asset poor households are larger in magnitude and seem significant, the F-test that positive and negative income shocks have statistically different impacts on changes in consumption do not reject the null hypothesis. Thus, it reveals that positive and negative covariate shocks have equal effects[17].

Table 6: Impact of change in log income on change in log consumption, controlling for change in mean log village income

	Specification (1)		
	γ estimates ($\Delta\left(\overline{\ln y_{tv}}\right)$)	β estimates ($\Delta\ln y_{jtv}$)	Sample size
All households	-0.146	0.041	
	(1.15)	(0.83)	247
Asset poor households	-0.184	0.052	
	(0.99)	(0.81)	151
Asset nonpoor households	0.004	0.021	
	(0.03)	(0.27)	96

	Specification (2)				
	γ estimates		β estimates		
	Positive $\Delta\left(\overline{\ln y_{tv}}\right)$	**Negative** $\Delta\left(\overline{\ln y_{tv}}\right)$	**Positive** $\Delta\ln y_{jtv}$	**Negative** $\Delta\ln y_{jtv}$	**Sample size**
All households	0.272	1.027**	0.058	0.110**	
	(1.57)	(4.82)	(1.55)	(3.28)	247
Asset poor households	0.323	1.828**	0.017	0.130**	
	(1.38)	(5.48)	(0.36)	(2.95)	151
Asset nonpoor households	0.147	0.335	0.08	0.0522	
	(0.57)	(1.25)	(1.38)	(0.92)	96
F-test					
Test 1: full sample	1.19 (p= 0.27)				
Test 2:Asset poor	0.11 (p= 0.73)				
Test 3:Asset nonpoor	2.47 (p= 0.12)				

Note: ** = significant at the 5 percent level of significance. Absolute value of t-statistics is in the parentheses. Standard deviation errors are corrected for heteroscedaticity using Huber-White methods.

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[17] Additional regressors included but not reported are female household head, age and age square of household head, and a full set of round (visit) dummy variables.

4.5   Household vulnerability by socio-economic characteristic

Table 7 reports the results of estimating equation (12) i.e., whether certain groups of communities within villages are better able to smooth consumption relative to their reference groups in the face of idiosyncratic income shocks. It has shown that neither asset poor households, female-headed households, households with young and old household heads nor households with young children experienced greater variation in consumption, given income changes, than their respective reference groups (only households with four or fewer members have greater variation in consumption with respect to its reference group).   However, when separate regression was run for each village, asset poor households, female-headed households and households with young heads experience greater variation in consumption with respect to reference groups in Yetmen. While asset poor households and households with four or fewer members have experienced variation in consumption with respect to reference groups in Azedebo, only households with four or fewer members (in Eteya) and none of the households (in Debrebrehan) experienced variation in consumption with respect to reference groups.

Table 7: The effect of idiosyncratic income shocks on consumption, by household characteristics
(Dependent variable: change in log consumption)

	Full sample	Debre-Brehan	Yetmen	Eteya	Azedebo
Asset nonpoor households (reference group)	**-0.007**	0.007	**0.003**	0.000	-0.014
	(0.67)	**(0.54)**	**(0.18)**	(0.03)	(0.29)
Asset poor households	**0.138**	0.272	-0.859**	0.085	0.339**
	(1.38)	(1.58)	(2.23)	(0.29)	(1.99)
Male-headed households (reference group)	**-0.005**	0.016	-0.091**	0.033	-0.013
	(0.43)	(1.14)	(3.19)	(1.58)	(0.41)
Female-headed households	-0.114	0.156	0.882**	-0.121	0.177
	(0.87)	(0.93)	(2.33)	(0.32)	(0.64)
Households with no members ages 0-6 (reference group)	-0.012	0.006	0.002	-0.013	0.000
	(1.04)	(0.08)	(0.09)	(0.73)	(0.03)
Households with members ages 0-6	-0.087	0.104	0.454	0.256	-0.155
	(0.94)	(1.17)	(1.23)	(1.09)	(0.75)
Households whose head is over age 40 (reference group)	-0.006	0.002	-0.001	0.002	-0.022
	(0.52)	(0.22)	(0.08)	(0.15)	(0.84)
Households whose head is age 40 or less	-0.017	0.045	0.747**	-0.058	-0.133
	(0.17)	(0.35)	(2.47)	(0.24)	(0.72)
Households whose head is under age 60 (reference group)	0.004	-0.006	0.040	0.024	-0.039
	(0.37)	(0.66)	(1.43)	(1.13)	(1.07)
Households whose head is 60 or older	0.098	-0.019	-0.365	-0.349	-0.035
	(0.83)	(0.15)	(0.76)	(1.25)	(0.17)
Households with more than four members (reference group)	-0.001	0.000	0.000	-0.020	0.099
	(0.11)	(0.02)	(0.03)	(1.08)	(1.35)
Households with four or fewer members	-0.275**	-0.033	-0.157	0.323*	-1.205**
	(2.31)	(0.25)	(0.36)	(1.66)	(2.92)

Notes: * = Significant at the 10 percent level, **= significant at the 5 percent level. Absolute value of t-statistics is in parentheses. Standard errors are corrected for heteroscedasticity using Huber-White methods. A value for F test is 2.25 (prob value =0.0057). Variables included in the regression but not reported are log share of productive time lost due to religions, feasts etc; loss of productive time due to health problems and change in family size.

5. Conclusion and recommendation

Using panel data of a year long intensive monitoring survey of rural households in Ethiopia, the paper explores vulnerability issues through the lens of consumption smoothing. It asks which groups or individuals are unable to fully insure or smooth their consumption in the face of shocks to their income. Drawing on data from four

villages of Ethiopia, the study has shown that in all cases, while covariant shocks lead to changes in consumption, specific idiosyncratic shocks appear to be fully insured against. To fully insure idiosyncratic shocks, households were found to use different coping strategies. However, during the survey periods, households were less likely to sell livestock/livestock products to smooth shocks caused by rainfall and crop shocks.

The impact of changes in total household income on consumption with controls for idiosyncratic shocks were also investigated and found that households are smoothing their consumption evenly across time through different coping mechanisms. Further test of consumption smoothing using average village income with control for idiosyncratic shocks indicated that there is a limit to which households insure against shocks through better-off households within the communities, i.e., the hypothesis of complete insurance is rejected.

As covariate shocks are stronger in explaining consumption smoothing, community or group based intervention is crucial. In doing so governmental organizations or NGOs' have to engage in stipulation of modern farming systems and intend to produce more than once through irrigation, water harvesting, etc., schemes. The organizations also have to engage in commencement of environmentally sound, economically viable and socially acceptable activities such as protection of acute and distress land through terracing and afforestation. Strengthening of such schemes can help the country, particularly the poor farming society, both through providing job opportunities (in the form of food-for-work or conditional cash transfers systems) and improving fertility of cultivable land. Improving fertility of cultivable land brings sustainable development by improving agricultural productivity and profitability. This would further improve the extent of consumption smoothing.

Provision of community/group based opportunities alone may not guarantee consumption smoothing as agricultural activities are vulnerable to different shocks that might affect the community. Thus, community/group based insurance scheme is important. A provision of insurance will guarantee households in cases of bad shocks and will also motivate the poor to participate in risky but profitable income generating ventures.

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Annex I: Duration of visits[*]

Visit 1   24 April 1992 - 08 May 1992 E.C
Visit 2   09 May 1992 - 23 May 1992 E.C
Visit 3   24 May 1992 - 08 June 1992 E.C
Visit 4   09 June 1992 - 23 June 1992 E.C
Visit 5   24 June 1992 - 15 July 1992 E.C
Visit 6   16 July 1992 - 15 August 1992 E.C
Visit 7   11 August 1992 - 01 September 1993 E.C
Visit 8   26 August 1992 - 12 September 1993 E.C
Visit 9   16 September 1993 - 27 September 1993 E.C
Visit 10   21 September 1993 - 12 October 1993 E.C
Visit 11   16 October 1993 - 27 October 1993 E.C
Visit 12   21 October 1993 - 12 November 1993 E.C
Visit 13   13 November 1993 - 01 December 1993 E.C
Visit 14   28 November 1993 - 05 December1993 E.C, for few it extends to 09, Jan. 1993.
Visit 15   13 December 1993 - 30 December 1993 E.C, for few it extends up to 24, Jan 1993
Visit 16   28 December 1993 - 15 January 1993 E.C, for few it extends up to 21 Feb, 1993
Visit 17   13 January 1993 - 30 January 1993 E.C
Visit 18   28 January 1993 - 15 February 1993 E.C
Visit 19   13 February 1993 - 17 March 1993 E.C
Visit 20   28 February 1993 - 08 April 1993 E.C
Visit 21   13 March 1993 - 24 April 1993 E.C
Visit 22   28 March 1993 - 04 May 1993 E.C
Visit 23   11 April 1993 - 23 April 1993 E.C
Visit 24   23 April 1993 - 03 May1993 E.C
Visit 25   05 May 1993 - 17 May 1993 E.C
Visit 26   17 May 1993 - 30 May 1993 E.C, for few it extends to 09 July 1993 E.C.

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[*] Some up to 3% of the households were not interviewed within time ranges justified. Moreover, when it extends to some 6% to 7%, it was indicated by an extension just in front of the specified period.

Annex II: Mean difference test for real log of total expenditure per capita

Income shock variables	Groups	N	Mean (Sd)	t-value	p-value
Rainfall shock dummy: 1 if rainfall shock (unbalanced rainfall) reported per plot; 0 otherwise	0	5626	3.21(0.93)		
	1	796	3.12(0.84)	2.514	0.006
Crop shock index dummy: 1 if crop damage shock index is >=25%; 0 otherwise	0	6269	3.20(0.92)		
	1	153	3.01(0.92)	2.476	0.006
Illness shock dummy: 1 if at least one active member of household loss productive time due to illness, 0 otherwise	0	5474	3.21(0.91)		
	1	948	3.10(0.94)	3.409	0.0003
Market unavailability dummy: 1 if interested in working but no wage employment opportunities etc; 0 otherwise	0	1951	3.29(0.94)		
	1	4471	3.16(0.90)	5.32	0.000
Asset poor households dummy: 1 if households have livestock holding in the bottom three quintiles; 0 otherwise	0	2496	3.54(0.64)		
	1	3926	2.97 (0.99)	25.07	0.000

Annex III: Household income diversification: Percentage of households reporting noncrop incomes

	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10
Agricultural wage labor	0.00	0.00	0.40	0.40	0.40	0.81	2.02	1.21	1.21	0.81
Livestock/livestock products trade	7.69	19.03	13.36	12.96	16.60	4.45	16.19	19.03	19.03	6.07
Petty trade (e.g. grain trade etc,)	12.96	10.53	10.53	10.53	11.34	10.93	6.88	8.50	6.07	8.10
Non-agricultural wage labor	8.10	6.88	8.10	6.07	6.88	6.88	4.05	5.26	5.67	8.10
Services	3.64	4.05	4.05	4.05	5.26	6.07	6.07	6.88	6.48	4.86
Food gifts from family, friends etc	15.79	10.53	11.74	29.55	65.59	27.13	22.27	21.86	23.48	22.67
Crafting, making and selling charcoal etc	5.67	9.31	7.69	5.26	4.86	5.67	5.67	5.67	5.26	5.67

	Visit 11	Visit 12	Visit 13	Visit 14	Visit 15	Visit 16	Visit 17	Visit 18	Visit 19	Visit 20
Agricultural wage labor	0.81	0.81	1.21	1.21	1.21	0.40	1.21	0.81	1.21	1.62
Livestock/livestock products trade	13.36	12.55	42.11	43.72	40.89	42.91	45.75	43.72	42.11	48.99
Petty trade (e.g. grain trade etc,)	7.69	6.07	9.72	11.74	13.36	13.36	11.74	11.34	9.31	10.93
Non-agricultural wage labor	4.45	4.45	4.86	5.26	5.26	7.29	6.07	4.45	4.86	8.10
Services	5.26	4.86	5.26	3.64	5.26	4.45	3.24	2.83	4.05	4.05
Food gifts from family, friends etc	49.39	22.67	69.23	19.03	25.51	22.27	19.03	34.41	34.82	61.54
Crafting, making and selling charcoal etc	4.45	3.64	6.48	6.48	6.48	6.07	6.07	8.10	5.67	7.69

	Visit 21	Visit 22	Visit 23	Visit 24	Visit 25	Visit 26
Agricultural wage labor	0.40	1.21	0.81	1.21	1.21	1.62
Livestock/livestock products trade	48.18	47.77	46.96	44.53	45.34	42.51
Petty trade (e.g. grain trade etc,)	10.93	9.31	10.12	8.50	10.12	8.10
Non-agricultural wage labor	5.67	9.72	5.26	7.29	6.88	7.29
Services	4.05	3.64	3.24	3.64	2.83	2.43
Food gifts from family, friends etc	28.74	35.63	24.70	26.32	22.67	73.68
Crafting, making and selling charcoal etc	8.10	7.69	5.67	7.69	5.26	6.07

Source: own calculation from survey data.

Annex IV: Mean and median per capita consumption, by survey visits

	Visit 1		Visit 2		Visit 3		Visit 4		Visit 5	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Per capita consumption, food and nonfood	49.48	32.31	75.25	23.01	31.03	21.12	58.38	22.90	33.83	26.89
Per capita food consumption	35.01	27.13	45.00	19.34	22.11	18.43	26.91	19.96	27.28	20.55
	(69.87	)	(59.55	)	(71.27	)	(45.71	)	(80.62	)
Per capita nonfood consumption	14.03	2.53	31.88	1.77	9.06	1.51	30.11	1.07	3.82	1.71
	(26.33	)	(38.81	)	(27.23	)	(49.85	)	(10.92	)
Per capita gift, transfer etc received	16.00	4.78	15.41	9.36	6.92	4.74	9.39	4.62	4.25	3.66
	(3.80	)	(1.63	)	(1.51	)	(4.44	)	(8.46	)
	Visit 6		Visit 7		Visit 8		Visit 9		Visit 10	

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	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Per capita consumption, food and nonfood	47.12	35.41	35.39	24.92	30.12	23.85	41.30	31.29	43.08	24.68
Per capita food consumption	37.06	28.26	29.74	20.75	22.32	19.41	29.39	23.25	35.52	20.23
	(78.65	)	(83.70	)	(74.12	)	(71.15	)	(82.47	)
Per capita nonfood consumption	6.63	3.34	5.14	1.88	6.81	2.47	10.48	3.76	5.93	2.51
	(13.89	)	(14.28	)	(22.23	)	(25.06	)	(13.55	)
Per capita gift, transfer etc received	15.97	5.49	3.84	1.05	5.90	3.27	7.26	3.30	8.80	7.88
	(7.45	)	(2.02	)	(3.66	)	(3.79	)	(3.99	)

	Visit 11		Visit 12		Visit 13		Visit 14		Visit 15	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Per capita consumption, food and nonfood	29.09	23.66	35.05	22.51	38.72	31.12	43.34	30.46	39.86	31.06
Per capita food consumption	23.19	17.26	29.90	19.09	28.91	21.47	31.52	23.29	25.64	20.72
	(79.07	)	(85.29	)	(73.74	)	(71.82	)	(64.07	)
Per capita nonfood consumption	3.57	2.02	3.21	2.20	6.82	3.45	11.90	3.48	12.77	4.34
	(11.91	)	(8.96	)	(17.02	)	(26.33	)	(31.10	)
Per capita gift, transfer etc received	5.54	3.86	9.35	5.01	5.11	3.77	11.44	7.16	16.11	13.67
	(9.02	)	(5.75	)	(9.24	)	(1.85	)	(4.82	)

Source: own calculation from survey data.

Annex IV, cont'd

	Visit 16		Visit 17		Visit 18		Visit 19		Visit 20	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Per capita consumption, food and nonfood	49.21	29.38	39.07	28.37	41.30	26.82	34.55	26.51	45.62	31.54
Per capita food consumption	37.33	23.68	27.30	20.23	30.28	18.58	23.12	19.02	28.55	21.22
	(75.55	)	(69.59	)	(73.01	)	(66.66	)	(62.31	)
Per capita nonfood consumption	11.33	4.88	10.84	4.05	8.81	3.22	9.35	4.09	13.58	5.79
	(22.17	)	(26.82	)	(20.71	)	(26.27	)	(29.39	)
Per capita gift, transfer etc received	9.39	6.61	9.47	4.76	8.48	4.17	7.29	4.12	6.44	3.82
	(2.28	)	(3.59	)	(6.28	)	(7.07	)	(8.30	)

	Visit 21		Visit 22		Visit 23		Visit 24		Visit 25		Visit 26	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Per capita consumption, food and nonfood	36.49	25.34	39.04	28.65	34.95	25.94	31.13	23.24	30.89	22.30	32.72	26.84
Per capita food consumption	26.51	19.54	27.64	21.83	25.70	20.13	22.66	17.88	20.28	17.36	20.79	17.76
	(72.35)		(70.51)		(73.23)		(72.48)		(65.39)		(63.26)	
Per capita nonfood consumption	8.02	2.31	9.45	3.70	7.12	3.04	6.62	2.68	8.24	2.86	5.83	2.41
	(21.62)		(23.79)		(20.03)		(20.93)		(26.21)		(17.38)	
Per capita gift, transfer etc received	9.61	3.68	7.32	3.22	11.53	5.22	8.35	5.56	13.48	6.20	9.00	5.76
	(6.04)		(5.70)		(6.74)		(6.59)		(8.40)		(19.36)	

Source: own calculation from survey data.
Note: All figures are biweekly per capita consumption in Birr. Percentages of total consumptions are denoted by parentheses.

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ETHIOPIAN FINANCIAL SECTOR PERFORMANCE REVIEW

M. Syed Ibrahim[1]

Abstract

Financial institutions are the intermediary that channels the savings of individuals, businesses, and governments into loans or savings. As far as the financial sector is concerned, Ethiopia's financial sector is fairly underdeveloped. Since then several banks and financial institutions have been established with different proclamations and regulations. The three state owned enterprises, namely the Commercial Bank of Ethiopia (CBE), the Development Bank of Ethiopia (DBE), and the Construction and Business Bank (CBB) dominate the financial sector. With the liberalization of the banking sector in1994, six private banks have been established. In addition, there are several insurance companies and contractual savings funds. DBE is a specialized financial institution, which provides finance for agricultural and industrial development projects. This paper analysis the performance of Ethiopian Financial Sector with the following objectives:

1) To study the growth and working of banking sector;

2) To study how well the Ethiopian Insurance Corporation (EIC) functioning for the economic development of the country;

3) To analyses the role played by the micro financing institutions for the poor.

The evaluation findings suggest several implications for future practice and research on financial sector in Ethiopia.

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1. Background and importance of the study

The economic development of any country depends upon the efficient functioning of the three sectors namely, Agriculture, Industry and Services.

Agricultural sector

Agriculture is the main sector of the Ethiopian economy, accounting for more than 50 per cent of GDP (Gross Domestic Product). It provides employment for more than 85 per cent of the population, generates about 90 per cent of the export earnings and supplies about 70 per cent of the country's raw material requirement for industries. The main sub-sectors of the agricultural sector are crop production, livestock, fishery and forestry. The share of agricultural GDP continued to decline in Ethiopia from 52.5 per cent in 1980 and 49.06 per cent in 1990 to about 39 per cent in 2003.

Industrial sector

The overall industrial sector comprises large and medium scale manufacturing, small scale industry and handicrafts, electricity and water; and the construction sub-sectors have steadily grown for the past 12 years, and this rate of growth has not been large enough to substantially reduce poverty.

Services sector

The service industries provide many of the prerequisites for the functioning and growth of the overall economy. The services sector is now a dominant part of the economies of most developed countries. One of the most striking features of the last two decades has been the enormous growth in the service sector within the world's advanced industrial economies. In part this growth has been due to the relentless acceleration in the pace of technological change which has resulted in significant improvements in productivity.

The growth in service can be seen by the increase in employment in the service sector and the growth of services' contribution to GDP. The reasons for the growth in services can be attributed to the impact of technology. The major technological

breakthroughs achieved in recent years have been one reason for the growth in services. More production of goods or products often leads indirectly to an increased demand for services.

A country can grow economically only if the rate of growth of output exceeds the rate of growth of population by a significant margin. As such, the important factors determining the rate of economic growth are: Rate of capital Formation (it implies not only the capacity to save, but also an act of investment), Capital Output Ratio (this ratio states the relationship between capital investment and the emergent output consequent upon the investment), and Rate of growth of population.

Capital formation is the essence of economic growth. No country in the world can develop economically without an adequate rate of capital formation. Unfortunately, the rate of capital formation in underdeveloped countries is quite low. Capital formation in a community is determined both by the demand and the supply of capital. An underdeveloped country needs adequate sources of finance for its economic development. An underdeveloped country generally has two sectors, the private sector and the public sector. Both sectors need to be fed adequately with finances for the purpose of expansion and development. The state has undoubtedly a very important role to play in promoting the economic development of an underdeveloped country. The task of economic development involves massive financial investments in various sectors of the economy. Financial investment can be undertaken by the financial institutions operating in the country.

During the command economic era, financial institutions in Ethiopia were under direct control of the monetary authorities. Ownership of the sector was limited to government. The establishment of financial institutions by private sectors had been outlawed. As a result, there were only three Government banks (Commercial Bank of Ethiopia, Construction and Savings Bank, and Agricultural and Industrial Development Bank) and one Government Insurance Company (Ethiopian Insurance Corporation). There was direct interference of government organs in the day-to -day activities of financial institutions. Credit was at large directed to selected sectors. Following the change of government in Ethiopia in 1991, the new government introduced a number of reform programs including opening the financial sector for national investors.

Consequently, private Banks, Insurance Companies and Micro-Financing Institutions started to sprout soon after the enactment of the Licensing and Supervision of Banks and Insurance Companies Proclamations in1994 and Licensing and Supervision of Micro-Financing Institutions Proclamation in 1996.

Based on these proclamations, private national investors were involved in the ownership of banks, insurance companies and micro-financing institutions. As a result, today there are nine commercial banks, nine insurance companies and twenty three microfinance institutions operating in the country. Private sectors are also the primary borrowers from government as well as privately owned financial institutions. In the Ethiopian context, the financial sector includes Central Bank of Ethiopia (NBE), Commercial Banks (owned by public and private), Development Bank of Ethiopia (DBE), Credit and Savings Co-operation (Government-owned), Pension Fund, Insurance Companies (both public and private), and Micro-Finance Institutions (owned by regional governments, NGO's, associations and individuals.

1.2   Objectives of the study

The study has the following objectives:
1.   To study the growth and working of the banking sector;
2.   To study how well the Ethiopian Insurance Corporation (EIC) is functioning for the economic development of the country;
3.   To analyse the role played by the micro-financing institutions for the poor.

1.3   Structure of the study

The introductory part explains the profile of Ethiopia and the overview of financial institutions in Ethiopia. The second part discusses about the working of the banking sector in Ethiopia. Part three portrays the development of insurance industry in the country. Part four reviews the growth of micro-finance institutions operating in Ethiopia. Part five concludes. It gives a summary of findings observed and conclusions drawn about the role played by the financial sector in the development of Ethiopian economy.

1.4   Limitations

The limitations of the study are:
1. This paper is mainly dependent upon secondary rather than primary data;
2. Data have been used for the purpose of analysis and interpretation from the year 1999 to 2004;
3. This study has been limited to three financial institutions hereby banks (overall performance of private and public sector banks), insurance companies (performance of Ethiopian Insurance Corporation-EIC) and microfinance institutions (MFI's).

2.   Profile of Ethiopia

Ethiopia is, according to many experts, a country with rich agrarian potential. Land surveys show that 78.9 million hectares (64.7%) out of a total area of 122 million hectares are suitable for agriculture. It is also agreed that the country has generally fertile soils, sufficient rainfall and water resources and a wide variety of climates and elevations ranging from 100 meters below sea level to over 4,000 meters above sea level. It is located in northeast Africa. It was also formerly known as Abyssinia. It is bordered by Eritrea, Djibouti, Somalia, Kenya and the Sudan. Addis Ababa is the capital of the country. Ethiopia's largest lake is named Lake Tana. In Ethiopia the main export is coffee with a share of 60% of all exports. The other leading exports are oilseeds, hides and skins, and grain. Amharic is the official language of Ethiopia.

Ethiopia's economy is based on agriculture and most of its population live and work on land. Agriculture contributes 50% of GDP and supports about 90% of the population. Furthermore; it plays a crucial role in providing raw material inputs for the country. According to studies, Ethiopian potentially irrigable land is estimated to be ten million hectares. Coffee is still the major export crop and accounts for 40% of the earnings from this sector. Ethiopia's manufacturing sector accounts for 11% of GDP. The major items produced include food and beverage, textiles, cement, leather products and chemicals. Ethiopia has traditionally been a low-inflatiory country. The details of GDP trends is shown in Table 1

Table 1: Sectoral contribution to GDP and GDP growth (in millions of Birr)

Sectors	Years				
	1998-99	1999-00	2000-01	2001-02	2002-03
Agriculture	6,873.50	7,024.70	7,831.10	7,586.00	6,663.00
Industry	1,700.90	1,731.30	1,818.10	1,923.10	2,018.00
Services	6,719.70	7,356.30	7,705.20	8,057.80	8,222.90
Agriculture(%of GDP)	44.94	43.60	45.12	43.18	39.42
Industry (% of GDP)	11.12	10.75	10.48	10.95	11.94
Service (% of GDP)	43.94	45.65	44.40	45.87	48.64
Total (in %)	100.00	100.00	100.00	100.00	100.00

Source: Annual Reports of Ministry of Finance and Economic Development, 2002-03.

It is clearly understood that the reason for the declining GDP shares in agriculture is due to severe drought that hit almost all parts of the country. The urgent need for Ethiopia to feed itself is underscored by many factors. One compelling reason is that Ethiopia is hit by recurrent droughts and a succession of famines which occur frequently. Yet paradoxically enough, although Ethiopia suffers from chronic food deficit it makes least use of the abundant water which it has. Ethiopia has become the world's largest food aid recipient country since1995.

Financial institutions

Financial institutions are the intermediary that channel the savings of individuals, businesses, and governments into loans or savings. As far as the financial sector is concerned, Ethiopia's financial sector is fairly underdeveloped, although it has a long history with the establishment of the Abyssinia Bank in1887. Since then several banks and financial institutions have been established by different proclamations and regulations. The three state-owned enterprises, namely the Commercial Bank of Ethiopia (CBE), the Development Bank of Ethiopia (DBE), and the Construction and Business Bank (CBB) dominate the financial sector. With the liberalization of the banking sector in1994, six private banks have been established. In addition, there are several insurance companies and contractual savings funds. DBE is a specialized financial institution which provides finance for agricultural and industrial development projects. Saving and Credit Co-Operatives (SACCOS) are almost entirely urban-based with membership largely drawn from salaried employees and generally people who share a common purpose and locality. Currently there are about 670 Urban

Saving and Credit Co-Operatives with approximately 150,000 members. Reportedly, these savings and Credit Co-Operatives have consistently performed quite well largely due to their political and financial independence. In Ethiopia, the origins of Micro-Finance Institutions (MFIs) is largely rooted in their non-governmental organizations (NGOs) past with a clearly defined mission of rural poverty eradication. Proclamation No. 40/1996 established the licensing and supervision of MFIs as 'share companies' in accordance with the Commercial Code of Ethiopia. In addition to banks and insurance companies, Micro- Finance Institutions (MFI's) have continued to play an important role in providing credit and saving facilities to the various micro-sectors of the economy. Over half a million people, particularly those living in rural areas have become the prime beneficiaries of the services of these institutions. The number of Micro-Finance Institutions (MFI's) that operate in the country has reached 22 at the end of fiscal year 2002-2003.

3.   Banking sector

Overview of banking (financial) sector

Banks play a very vital role in modern economy. Firstly, by accepting deposits the banks promote the habit of thrift and saving among the people. These savings of the people later result in capital formation in the economy. Thus, by encouraging savings among the people, the banks promote capital formation, which is the basis of economic progress in the country. Secondly, the banks also encourage industrial innovations and business expansion through funds provided by them to the entrepreneurs. Thirdly, the banks exercise considerable influence on the level of economic activity through their ability to create or manufacture money in the economy. Fourthly, through their lending policy, the banks can influence the course and direction of economic activity within the economy. Fifthly, the various utility functions performed by the banks are of great economic significance for the economy. Such functions as cheap remittance of funds, accepting and discounting bills of exchange; agency functions, such as, collection of dividends and interest on behalf of customers are very important for the working of the modern economy. In fact, the economic development of a country is not possible without a sound system of commercial banking. It is often said that the industrial revolution in Europe in the

19th century would not have been possible without a sound system of commercial banking. No underdeveloped country can progress without first setting up a sound system of commercial banking in the economy.

Financial institutions include any public and/or private business organizations or regulatory agents of the Government that deal with depositing or lending money, and that are involved in banking and insurance activities. These include commercial banks, insurance companies, saving and credit associations (unions), pension funds, micro- finance institutions and the National Bank of Ethiopia (Central Bank) operating in the country.

Modern banking started during the region of emperor Menelik in 1905 with the establishment of the "Bank of Abyssinia". This bank was founded with an agreement with the Anglo-Egyptian National Bank to last for fifty years. The Ethiopian government later brought the Bank of Abyssinia and renamed it "Bank of Ethiopia" in 1931. This bank was closed down following the invasion of the Italian Fascist regime in 1936. Later in 1943, the government established the "State bank of Ethiopia". It was performing dual job of a commercial and central bank until it was dissolved and restructured to form today's National Bank of Ethiopia (NBE) and the Commercial Bank of Ethiopia (CBE) in 1976.

In every country there is one bank which acts as the leader of the money market, supervising, controlling and regulating the activities of commercial banks and other financial institutions. It acts as a bank of issue and is in close touch with the government, as banker, agent and adviser to the latter; such a bank is known as the Central Bank of the country. The National Bank of Ethiopia being the central bank of the country plays a key role in the Ethiopian economy by formulating and implementing the country's monetary policy.

The National Bank of Ethiopia was established in 1963 by proclamation No. 206 of 1963 and began operation in January 1964. The National Bank of Ethiopia is entrusted with the following responsibilities and objectives:

- To regulate the supply, availability and cost of money and credit;
- To manage and administer the country's international reserves;
- To license and supervise banks and hold commercial banks reserves and lend money to them;

- To supervise loans of commercial banks and regulate interest rates;
- To issue paper money and coins;
- To act as an agent of the Government;
- To fix and control the foreign exchange rates;
- To foster monetary stability and a sound financial system;
- To ensure that credit and exchange conditions are conducive to the balanced growth of the economy of Ethiopia.

The branch network of the banking system in Ethiopia is depicted in Table 2.

Table 2: Branch network of the banking system (in number)

Banks	Years			
	2000	**2001**	**2002**	**2003**
Commercial Bank of Ethiopia	170	171	171	172
Construction & Business Bank	20	20	20	20
Development Bank of Ethiopia	32	32	32	32
Total Public Banks	**222**	**223**	**223**	**224**
Awash International bank	19	22	24	26
Dashen Bank	19	22	23	28
Abyssinia Bank	09	13	13	14
Wegagen Bank	18	20	20	23
United Bank	07	09	09	13
Nib International Bank	05	06	08	11
Total Private Banks	**77**	**92**	**97**	**115**
Total Banks	**299**	**315**	**320**	**339**

Source: Annual Reports of National Bank of Ethiopia-2002-03.

Functional spread

Functional spread has two aspects. It encompasses mobilization of deposits and deployment of credit. Commercial banks are required to mobilize untapped savings of the economy in the form of deposits and channel such deposits for the purpose of productive investment in the economy. The performance of commercial banks in the field of resource mobilization and deployment of credit is shown in Table 3.

It is evident from the table above that the public sector banks had mobilized a sum 4,891.1 millions of birr in1999-2000. The amount of total resources mobilized then decreased to 4,270.5 millions birr in 2002-2003.

Table 3: Resource mobilization (amount in millions of Birr)

Year	Public Banks	Private Banks	Total
1999-00	4,891.1	1,500	6,393
2000-01	5,251.8	1,850.1	7,101.9
2001-02	3,330.8	2,277.6	5,608.4
2002-03	4,270.5	3,166.2	7,436.7
No. of Times Increased	---	2.1	1.16

Source: Annual Reports of National Bank of Ethiopia-2002-03.

In the private sector, on the other hand, commercial banks had mobilized 1,500 millions birr in1999-2000. The amount of total resources later increased to 2,277.6 millions birr in 2001-2002 and thereafter to 3,166.2 millions birr in 2002-2003. The increase over the period was 2.1 times.

Deployment of credit

Deposits are the basic raw materials for the banks. Deposits help the banks to channels credit for productive investment in the economy. The higher the deposit mobilization; the larger the scope for deployment of funds in the economy. The performance of the banks in the sphere of deployment of credit is shown in Table 4.

Table 4: Deployment of credit (amount in millions of Birr)

Year	Public Banks	Private Banks	Total
1999-00	2,917.7	1,112.2	4,029.9
2000-01	2,551.1	1,378.5	3,929.6
2001-02	1,768.3	1,397.3	3,165.6
2002-03	1,761.6	2,336.3	4,097.9
No. of Times Increased	---	2.1	1.0

Source: Annual Reports of National Bank of Ethiopia-2002-03.

It is evident from the table above that the public sector banks had deployed a sum of 2,917.7 million birr in1999-2000. The amount of total deployment of credit then decreased to 1,761.6 million birr in 2002-2003.

In the private sector, on the other hand, commercial banks had deployed 1,112.2 million birr in1999-2000. The amount of total deployment of credit later increased to 1,397.3 million birr in 2001-2002 and thereafter to 2,336.3 million birr in 2002-2003. The increase over the period was 2.1 times.

Credit - deposit ratio

This ratio refers to utilization of credit and explains as to what extent commercial banks have utilized credit out of the deposits mobilized. The ratio is obtained by the following calculation/formula.

<u>**Cross Loans and Advances**</u> **X 100**
      Total Deposits

The credit- deposit ratio achieved by the commercial Banks in Ethiopia is shown in Table 5.

Table 5: Credit-deposit ratio by commercial banks (in %)

Years	CD Ratio by Public Banks	CD Ratio by Private Banks
1999-00	59.6	74.1
2000-01	48.6	74.5
2001-02	53.1	61.3
2002-03	41.2	73.8

Source: Annual Reports of National Bank of Ethiopia, 2002-03.

The foregoing table indicates that in the year 1999-2000, the credit-deposit ratio reached by public sector banks in Ethiopia was 59.6 per cent. In the year 2000-2001, the CD ratio decreased to 48.6 per cent which further decreased to 41.2 per cent in 2002-2003. This indicates that out of the total deposits mobilized by the public sector banks the advances made out of the deposits were very low.

In private sector banks, on the other hand, one notices higher credit-deposit ratio compared to public sector. The available data reveal that the CD ratio was 74.1 per cent in 1999-2000. This declined to 61.3 per cent in 2001-2002 and again it went up to 73.8 per cent in 2002-2003.

The Development Bank of Ethiopia (DBE)

The Development Bank of Ethiopia (DBE) is one of the financial institutions engaged in providing short, medium and long-term development credits. DBE's distinguishing feature is its "Project"-based lending tradition. Projects financed by the bank are carefully selected and prepared, thoroughly appraised, closely supervised and systematically evaluated. Since its establishment in 1909, the bank has been playing a significant role in promoting overall economic development of the country. The business mission of DBE is to accelerate economic development through the provision of medium, long-term as well as short-term development credits to those projects which have high contribution to the economy in the area of agriculture, industry and other sectors with the following objectives:

- To provide investment credits and short-term loans to viable projects that will contribute to the country's economic development;
- To mobilize funds from sources within or outside the country;
- To manage funds entrusted to it;
- To participate in equity investment;
- To provide domestic and foreign banking services to its borrowers;
- To accept time deposits;
- To guarantee loans and other financial obligations;
- To draw, accept, discount, buy and sell bills payable within or outside of Ethiopia;
- Issue and sell bonds;
- To act as a trustee;
- To provide technical and managerial services;
- To open and operate bank accounts, with banks and banking correspondents in Ethiopia or abroad;
- To engage in such other activities as development banks customarily carry out.

The bank provides loans for financing the establishment and expansion of agricultural, agro-industrial, industrial, transport, communication, mining and energy, education, health, hotel, tourism and other sectors of the national economy. Types of loan extended by the bank are as follows;

1. **Short-term loan:** This is a loan advanced for the purpose of working capital, and is payable within one year.
2. **Medium-term loan:** This loan is given for the purposes of building construction, machinery, equipment, furniture and vehicles. It is paid back within one to five years.
3. **Long-term loan:** The purposes of this type of loan are for construction of factory building and acquisition of machinery, for irrigation agriculture and plantation crops, for transport vehicles and communication equipment, and for any other infrastructure related with the project to be financed. The loan is payable within five to fifteen years.

DBE is a specialized financial institution which provides finance for agricultural and industrial development projects. Since its establishment in 1909, the bank has been playing a significant role in promoting overall economic development of the country. The performance of DBE in the field of branch distribution is shown in Table 6.

Table 6: Distribution of branch offices

Regions	As of June 30, 2002
Addis Ababa	1
Dire-Dawa	1
Harari	1
Southern People	7
Oromia	15
Tigray	2
Amhara	5
TOTAL	**32**

Source: Annual Reports of Development Bank of Ethiopia, 2002-03.

Loan portfolio of the Development Bank of Ethiopia

The business mission of the DBE is to accelerate the economic development of the country through the provision of medium, long-term as well as short-term development credits to the agricultural, industrial and other sectors of the economy. The agricultural, industrial and other business enterprises, loans portfolio for different sectors is shown in tables 7, 8, 9 and 10.

Table 7: Summary of agricultural loans portfolio as at June (in millions of Birr)

Years	State Enterprises	Private enterprises	Co-operatives	Total	Per cent Share
1999	0.03	572.45	324.67	897.15	36.0
2000	0.03	353.20	645.78	999.01	36.0
2001	0.03	662.66	376.13	1029.82	35.0
2002	-	667.95	384.51	1052.46	35.4
2003	-	650.89	395.32	1046.21	34.90

Source: Annual Reports of Development Bank of Ethiopia, 2002-03.

Table 8: Summary of industrial loans portfolio as at June (in millions of Birr)

Years	State Enterprises	Private enterprises	Co-operatives	Total	Per cent Share
1999	309.77	800.42	16.41	1,126.60	45.0
2000	268.11	945.54	14.85	1,228.50	44.0
2001	250.66	1,051.34	12.41	1,314.41	45.0
2002	264.59	1,082.90	11.40	1,358.89	45.6
2003	273.89	1098.60	8.53	1381.02	46.10

Source: Annual Reports of Development Bank of Ethiopia, 2002-03.

Table 9: Summary of other business enterprises loans portfolio as at June (in millions of Birr)

Years	State Enterprises	Private enterprises	Co-operatives	Total	Per cent Share
1999	62.04	413.65	-	475.69	19.0
2000	67.87	488.12	-	555.99	20.0
2001	70.71	496.19	-	566.90	20.0
2002	58.08	507.36	-	565.44	19.0
2003	60.71	508.43	-	569.14	19.0

Source: Annual Reports of Development Bank of Ethiopia, 2002-03.

Table 10: Summary of total loans portfolio as at June (in millions of Birr)

Years	State Enterprises	Private enterprises	Co-operatives	Total	Per cent Share
1999	371.84	1,786.52	341.08	2,499.44	100.00
2000	336.01	1,786.86	660.63	2,783.50	100.0
2001	321.40	2,210.19	379.54	2,911.13	100.0
2002	322.67	2,258.21	395.91	2,976.79	100.0
2003	334.60	2257.92	403.85	2996.37	100.00

Source: Annual Reports of Development Bank of Ethiopia, 2002-03.

The aggregate loan portfolio of the bank as at June 30, 2003 reached birr 2.98 billion. Of the total loan portfolio, industrial loan portfolio was the highest accounting for about 46 per cent. Agricultural and other business portfolios covered 35 per cent and 19 per cent respectively.

The total outstanding loan distribution on the basis of social sectors indicated that the share of private enterprises rank first followed by state enterprises and co-operatives.

Economic contributions of the private players in the banking and insurance industry

The contributions of the private institutions especially Awash International Bank and Awash Insurance Company to the banking and insurance industry over the last decade is very encouraging. The combined contribution of all the six private banks and the eight private insurance companies to the economy is even more encouraging. It indicates the crucial role of the private sector as a whole in the growth and development of Ethiopia's economy. For example, the contributions of the team of private banks alone over the last decade that they have created a powerful team of investors and raised 656 million birr in share capital. This is indicative of the power of co-operation to raise significant amounts of funds to establish relatively large institutions, even in a poor country such as Ethiopia. They created employment for 4,286 citizens and mobilized 7.4 billion birr deposits. They have also 5.5 billion birr in loans in to the economy in support of the newly emerging private sectors.

Awash International Bank (AIB), as one of the leading private banks in Ethiopia, has reported an all time high profit in the decade after its establishment. The bank reported a net profit after tax of 34.7 million birr for the year ended 31st December, 2004. Time deposits, savings deposits and demand deposits registered growth rates of 34 per cent, 31 per cent, and 21 per cent respectively. Savings deposits constitute about 75 per cent of the bank's total deposits. AIB's report indicated that the cumulative operational income for the year 2004 stood at 135.3 million birr, which was 20 per cent higher than the level attained in 2003.

The private banks have opened 135 branches all over the country. The performance of the team of six over the last decade testifies to the wisdom of ushering in private banks and indeed the entire private sector, into Ethiopia's economy.

3.   Insurance industry in Ethiopia

Role of insurance in the development of the nation's economy

It provides capital:
The insurance provides capital to the society. The accumulated funds are invested in productive channel. The dearth of capital of the society is minimized to a greater extent with the help of investment of insurance. The industry, the business and the individual are benefited by the investment and loans of the insurers.

It helps economic progress:
The insurance by protecting the society from huge losses of damage, destruction and death, provides an initiative to work hard for the betterment of the masses. The next factor of economic progress, the capital, is also immensely provided by the masses. The property, the valuable assets, the man, the machine and the society cannot lose much at the disaster.

Uncertainty of business losses is reduced:
In the world of business, commerce and industry a huge number of properties are employed. With a slight slackness or negligence, the property may be turned into ashes. The accident may be fatal not only to the individual or property but to the third party also. New construction and new establishment are possible only with the help of insurance. In its absence, uncertainty will be at the maximum level and nobody would like to invest a huge amount in the business or industry. A person may not be sure of his life and health and cannot continue the business up to longer period of support his dependents. By purchasing policy, he can be sure of his earning because the insurer will pay a fixed amount at the time of death. Again, the owner of a business might foresee contingencies that would bring great loss. To meet such situations they might decide to set aside annually a reserve, but it could not be accumulated due to death. However, by making an annual payment, to secure immediately, insure policy can be taken.

Economic growth of the country:

For the economic growth of the country, insurance provides strong hand and mind, protection against loss of property and adequate capital to produce more wealth. The agriculture will experience protection against losses of cattle, machines, tools and crops. This sort of protection stimulates more production in agriculture, industry, the factory premises, machines and boilers. Welfare of employees creates a conducive atmosphere to work. Adequate capital from insurers accelerates the production cycle. Similarly in business too, the property and human materials are protected against certain losses; capital and credit are expanded with the help of insurance. Thus, the insurance meets all the requirements of the economic growth of a country.

Reduction in inflation:

Insurance reduces the inflationary pressure in two ways. First, by extracting money in supply to the amount of premium collected and secondly, by providing sufficient funds for production narrow down the inflationary gap. The two main causes of inflation, namely, increased money supply and decreased production are properly controlled by insurance business.

Insurance is a method of spreading risks among the community. All those interested in reducing their risks pay a contribution called a premium into a pool of funds. Then anyone who actually suffers a loss is compensated from the pool and does not suffer more seriously than anyone else.

History and development of insurance industry in Ethiopia

Insurance in Ethiopia goes back to the time when there have been traditional associations whereby people contribute either money or labour to assist each other whenever a member faces financial difficulties or needs assistance. Examples of such activities are building a house or harvesting crops.

However, among these associations 'EDIR' and 'EQUB' have some similarities with modern insurance. Both 'EQUB' and 'EDIR' have their trustees who are elected among the members to administer the processes. The first modern insurance business was transacted by the bank of Abyssinia, which began operation in 1905,

during the reign of Menelik II, as an agent to a foreign company. Covers provided were fire and marine risks.

During the period 1936-1941, Italian Insurance Companies had been operating and other Non-Italian Companies were closed. The first insurance company known as the Imperial Insurance Company was formed in 1951.In 1960 two bodies of laws were enacted: Maritime Code of Ethiopia and Commercial Code of Ethiopia. By the end of 1974, thirteen companies were operating and all were nationalized as from 1 January 1974, by the proclamation No.261/1975. The nationalized companies were:
1)   Imperial Insurance Company;
2)   Ethiopian American Life Insurance Company;
3)   National Insurance Company;
4)   Afro-Continental Insurance Company;
5)   Blue Nile Insurance Company;
6)   African Solidarity Insurance Company;
7)   Lion Insurance Company;
8)   Ethiopian Life Insurance Company;
9)   General Insurance Company;
10)   Pan African Insurance Company;
11)   International Insurance Company;
12)   Union Insurance Company;
13)   Rasai Ethiopian Insurance Company.

The EIC was established by proclamation No.68/1975, by taking over the assets and liabilities of the nationalized companies with paid-up capital of Birr 11 Million. These companies became the branches of the corporation. At present, there are eight private companies and one state-owned corporation-Ethiopian Insurance Corporation (EIC).

Apart from one state-owned corporation i.e., Ethiopian Insurance Corporation, the following is the list of eight private insurance companies.

1.   National Insurance Company Of Ethiopia
2.   Awash Insurance Company S.C.
3.   United Insurance Company S.C.
4.   African Insurance Company S.C.

5.   Nile Insurance Company S.C.
6.   Nyala Insurance Company S.C.
7.   Global Insurance Company S.C.
8.   *Lion Insurance Company S.C.*

EIC was established by proclamation No.68/1975 on 1st January, 1976 with the objective of providing secure, efficient and cost-effective insurance services through 7 Regional Main Branches and 15 Local Branches.

Having different elements in different policies, the policyholders are free to choose the best policies according to their requirements .EIC provides the complete range of both general and life insurance. The following is the list of policies of EIC.

General Insurance Policies	**Life Insurance Policies**
1. Aviation (Cargo & Hull)	1. Group Life
2. Burglary	2. Individual Life
3. Bonds	3. Medical
4. Consequential Loss. (Business Interruption)	4. Idir
5. Contractor's All Risks protection)	5. Iquib
6. Depositor's Personal Accident	
7. Engineering (BI, EAR, EEI, MPV, MBD, etc.)	
8. Fidelity Guarantee	
9. Fire and Allied Perils	
10. Livestock	
11. Marine (Cargo and Hull)	
12. Motor	
13. Money	
14. Plate Glass	
15. Product Liability	
16. Professional Indemnity	
17. Public Liability	
18. Workmen's Compensation.	

International affiliations:

The Corporation has long-standing and strong relations with many international insurance organizations and associations. For instance, it is a member of three regional organizations, i.e.

Fair pool (Federation of Afro Asian Insurers and Re-insurer);
AIO (African Insurance Organization); and
OESAI (Organization of Eastern and Southern African Insurers).

The Ethiopian Insurance Corporation plays a vital role in the development of Ethiopian economy. The following are the important insurance products, which are necessary to develop the nation's economy.

Motor: Every owner having a motor vehicle should insure the legal obligation against the risk of accident and other related perils.

Marine: Marine Insurance provides protection against the loss of marine perils. The marine perils are collision with rock, or ship, attacks by enemies, fire and capture by pirates etc.

Fire: Fire Insurance covers risks of fire. The individual is protected from such losses and his property, business, or industry will remain approximately in the same position in which it was before the loss.

Workmen Compensation: This policy provides benefits to workers who are injured or disabled because of job related accident or disease.

Engineering: It is to guard against such sudden and unexpected financial losses. The types- of engineering business include machinery breakdown, boiler explosion, business interruption and deterioration of stocks etc.

Money and Fidelity: This insurance policy covers the loss arising due to dishonesty, disappearance and disloyalty of the employees.

The branch network of the insurance system in Ethiopia is shown in Table 11.

The working results of EIC can be evaluated by various indicators such as Insurance Fund, Premium Income, Investment Income and Profit and so on. Table 12 highlights the growth and working of the corporation.

Table 11: Branch network of the insurance system in Ethiopia (in number)

Insurance Companies	Years			
	2000	**2001**	**2002**	**2003**
Ethiopian Insurance Corporation (State-Owned Corporation)	26	26	25	27
Awash Insurance Company S. C.	11	12	12	13
Africa Insurance Company S. C.	08	08	08	09
National Insurance Company of Ethiopia	06	07	07	08
United Insurance company S.C.	11	11	14	14
Global Insurance Company S.C.	04	04	04	04
Nile Insurance Company S.C.	11	15	15	16
Nyala Insurance Company S.C	10	11	11	11
Nib Insurance Company S.C.	-	-	04	04
Total Insurance Companies	**87**	**94**	**100**	**106**

Source: Annual Reports of National Bank of Ethiopia, 2002-03.

Table 12: Financial highlights (currency in '000 Eth. Birr)

Particulars	2000	2001	2002	2003	2004
Paid Up Capital	61,007	61,007	61,007	61,007	61,007
Legal Reserve & Unappropriated Profit	72,905	82,656	86,553	97,704	108,556
Insurance Funds	225,901	229,275	243,603	248,305	265,947
Total Assets	615,806	638,758	729,452	743,973	749,389
Investment Income	26,197	27,327	27,984	22,651	28,173
Gross Written Premium	213,275	228,388	316,579	289,962	296,583
Premium Earned	216,503	212,875	239,799	325,914	297,744
Profit Before Tax	62,239	50,935	52,886	52,958	59,027
Profit After Tax	39,011	34,824	38,976	40,461	38,758

Source: Annual Reports of Ethiopian Insurance Corporation, 2003-04.

Legal reserve and appropriated profit of the corporation shows an increasing trend. It has been increased from birr 72,905 (in '000) in 2000 to birr 108,556 (in '000) in 2004. The increase over the period is 1.48 times.

As far as the insurance funds of the corporation are concerned, they have been increased from birr 225, 901 (in '000) in 2000 to birr 265,947 (in '000) in 2004. The financial position of the EIC with regard to the insurance funds shows satisfactory level.

There has been constant increase in the total assets of the corporation which has been increased from birr 615,806 (in'000) in 2000 to birr 749,389 (in'000) in 2004. Over the period the increase was 1.21 times.

Insurance claims relative to payment of premiums may create the opportunity to earn investment income. In this context, the EIC has been earning sizable in come on their investments. Except in the year 2003, the corporation's investment income has been constantly increased over the years.

Premium is the only principal source of finance for any insurance company. The corporation has collected the premium amount from the policyholders from birr 216,503 (in'000) in 2000 to birr 297,744 (in'000) in 2004.

There have been ups and downs in profits earned by the corporation over the years mainly due to the private insurers competing on returns and efficiency.

By undertaking the marine insurance business, the corporation directly helps the export trade of Ethiopia. For instance, Cargo Insurance generally is acquired to safeguard against loss of damage in transit. Such insurance covers shipments by mail and air freight as well as by sea. Depending on the terms of the sale, either the seller or the buyer may be responsible for obtaining the insurance. Number of policies, premium received and claims paid in respect of the marine class of business are clearly shown in Table 13.

Table 13: Business performance of marine policy

Particulars	1998-99	1999-00	2000-01	2001-02	2002-03
No. of Policies Issued	8,264	7,052	8,026	6,961	10,238
Gross Written Premium (in'000 of Birr)	28,837	28,022	30,237	37,756	45,908
Claims Paid (in'000 of birr)	12,968	8,766	13,801	14,861	8,144

Source: Annual Reports of Ethiopian Insurance Corporation, 2002-03.

Number of policies and gross written premium have been increased from 8,264 and birr 28,837 in 1998-99 to 10,238 and birr 45, 908 in 2002-03 respectively. It is clearly understood that the corporation is directly assisting the export trade potential for Ethiopia by undertaking the business of marine.

Insurance companies urged to be relevant:

Insurance companies' failure to come up with a wide variety of creative insurance policies was one of the major problems contributing to the low penetration of insurance coverage in Ethiopia. Insurance companies' inability to identify what is most needed I the market currently is a problem. There are other problems such as society's concept about insurance being very low and the poor economy of the country as contributing factors to the low insurance penetration. One important weakness in the industry is that products have not been developed for people with low levels of income and using traditional products which have been in use for the last thirty or forty years and it is not come up with relevant products and policies for current customers.

Despite such problems, the overall performance of the insurance industry in the country showed considerable progress in the last ten years. The growth of the premium from about 250 million birr to 600 million birr in a decade, despite the low number of customers/policyholders is itself a sign of development.

4.   Micro-financing institutions

Micro-finance has evolved as an economic development approach to benefit low-income women and men. Micro-finance clients are typically self-employed, low-income entrepreneurs in both urban and rural areas. Clients are often traders, street vendors, small farmers, service providers and artisans and small producers, such as blacksmiths and seamstresses. Usually their activities provide a stable source of income (often from more than one activity). Although they are poor, they are generally not considered to be the "poorest of the poor".

Micro-financing institutions in Ethiopia are formed as share companies in line with the provisions of the Commercial Code of Ethiopia. These institutions are owned by regional governments, NGO's, associations and individuals of Ethiopian origins. However, the coverage of financial services of micro-financing institutions in Ethiopia to day is not as wide as their numbers. This is because of the facet that the operation of micro-financing business is very challenging mainly because of prevalent limited financial and human resources in the country, lack of adequate infrastructure in the rural areas of the country, lack of business awareness by the borrowers particularly in

the rural areas and frequently happening drought. The existing micro-financing institutions played important role in improving living standards of their clients. Because the small holders in the rural as well as the urban areas do not have access to Commercial Banks due to lack of collateral to secure the loan to be granted the small holders in Ethiopia are in fact living under the poverty line, which constituted not less than 45 per cent of the total population of the country. Hence, micro-financing institutions can play the greatest role in the realization of the need for financial services for the poor society to promote their living standards.

Micro-financing institutions operating in Ethiopia are an infant industry. The history of Ethiopian micro-financing institutions is limited to only about seven years. The objectives of the establishment of the institutions are to support certain sections of the population who are beyond the view of the commercial banks. The primary motive of these institutions is to achieve social objectives as well as to generate adequate profit so as to stay in business and reach the poor segment of the society to as large an extent as possible.

Functional spread of Micro-Finance Institutions (MFI's):

Functional spread has two aspects. It encompasses mobilization of deposits and deployment of credit. MFI's are required to mobilize untapped savings of the economy in the form of deposits and channel such deposits for the purpose of delivering financial services to the urban and rural poor. Deposits are the basic raw materials for the MFI's. It helps the MFI's to channel credit for the betterment of the working poor. The higher the deposit mobilization, the larger the scope for deployment of funds. The performance of MFI's in the field of deposit mobilization and deployment of credit is seen in Table 14.

Table 14: Functional spread of MFI's (amount in '000 of Birr)

Years	Savings (Deposits)	Loans	Deposits to Loan Ratio (%)
2000	176,113	287,868	61
2001	252,723	352,721	72
2002	281,612	398,997	71
2003	327,509	593,927	55
2004	431,000	994,000	43

Source: Records Maintained by the Supervision Department, the National Bank of Ethiopia, 2003-04.

It can be observed from the above table that the ratio of deposits to loans outstanding has shown a significant growth. This indicates that Micro-Finance Institutions are capable of mobilizing savings for financing the delivery of financial services to meet their businesses. However, it is not an encouraging sign that the said ratio has been decreased from 71 per cent in 2002 to 43 per cent in 2004.

Components of capital

Total capital structure is composed of finance provided by the shareholders, donated capital, other capital account and earnings of the sector. The composition of capital of MFI's is seen in Table 15.

Table 15: Capital structure (amount in '000 of Birr)

Composition of Capital	2000	2001	2002	2003	2004
Paid Up Capital	17,690	38,323	50,803	58,219	128,000
Donated Capital	143,750	141,016	161,157	174,213	191,000
Other Capital Account	3,228	4,5280	5,2745	75,064	137,000
Retained Earnings	-1,939	-6,732	-9,265	-1,979	9,000
Profit/Loss	11,748	10,018	12,779	30,568	55,000
Total Capital	**174,477**	**227,905**	**268,219**	**336,085**	**521,000**

Source: Records Maintained by the Supervision Department, the National Bank of Ethiopia, 2003-04.

As can be observed from the above table the total capital of the sector has steadily increased from birr 174,477 in 2000 to birr 521,000 in 2004. The increase over the period was 3.8 times. Profit has declined slightly in the year 2001owing to excess expenses over earnings.

A condensed comparative balance sheet of MFI's with vertical analysis is seen in Table 16.

The major relative changes in MFI's assets were in the current assets and fixed assets. Current assets increased from 97.2 per cent of total assets at the end of 2000 to 98.3 percent at the end of 2004 with a corresponding decrease in the fixed assets of the MFI's. Stockholders' equity increased from 32.4 per cent of total liabilities and stockholders' equity at the end of 2000 to 37.0 percent at the end of 2004, with corresponding increases in the capital and profit/loss of the MFI's.

Table 16: Comparative balance sheets of MFI's from Dec 2000 to Dec 2004 (amount in ' 000 of Birr)

Items	2000		2001		2002		2003		2004	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Assets										
Current Assets	524,521	97.2	626,203	97.0	698,580	97.5	863,139	97.9	1,383,000	98.3
Long-Term Investments	0	0	0	0	0	0	2,005	0	2,000	0.2
Fixed Assets	14,892	2.8	19,683	3.0	17,761	2.5	16,608	1.9	21,000	1.5
Total Assets	**539,413**	**100.0%**	**645,886**	**100.0%**	**716,341**	**100.0%**	**881,752**	**100.0%**	**1,406,000**	**100.0%**
Liabilities										
Current Liabilities	352,049	65.2	399,881	61.9	430,115	60.1	413,431	46.9	734,000	52.2
Long-Term Liabilities	12,888	2.4	18,101	2.8	18,006	2.5	132,236	15.0	151,000	10.8
Total Liabilities	**364,937**	**67.6**	**417,982**	**64.7**	**448,121**	**62.6**	**545,667**	**61.9**	**885,000**	**63.0**
Stockholders Equity										
Paid-Up Capital	17,690	3.3	38,323	5.9	50,803	7.1	58,219	6.6	128,000	9.1
Donated Equity & Other Capital Account	145,039	26.9	179,564	27.8	204,637	28.5	247,298	28.0	338,000	24.0
Profit/Loss	11,747	2.2	10,017	1.6	12,780	1.8	30,568	3.5	55,000	3.9
Total Stockholders Equity	**174,477**	**32.4**	**227,905**	**35.3**	**268,219**	**37.4**	**336,085**	**38.1**	**521,000**	**37.0**
Total Liabilities & Stockholders Equity	539,413	100.0%	645,886	100.0%	716,341	100.0%	881,752	100.0%	1,406,000	100.0%

Source: Records Maintained by the Supervision Department, the National Bank of Ethiopia, 2003-04.

5.   Findings and suggestions

Findings

Banking sector:

1. Compared to the performance of commercial banks in the field of resource mobilization at the country level, the progress by the private sector seems to be more attractive than public sector banks.
2. There has been a steady increase in deploying credit by private sector banks rather than by public sector banks.

3. With regard to the credit-deposit ratio of the public sector bank, it is only in 1999-2000 that this sector could be able to meet the nationally prescribed minimum percent of 59.6. Leaving aside this year, the utilization of credit by public sector banks was not encouraging.

4. With regard to the Credit-Deposit Ratio, the private sector banks' performance is found to be satisfactory.

5. **Need for a sound banking system**:

    a) A sound system of commercial banking is an essential prerequisite for the economic development of a backward country. For the improvement of the banking system, in an underdeveloped country, the following points need special stress;

    b) The system of branch banking is most suitable for a developing country. As such, the government of the country in question should adopt it. The number of branches should be multiplied so as to cover the rural, backward areas of the country.

    c) The system of unit banking may also be developed to some extent to meet the local financial needs of the people. In other words, unit banks may be set up in bigger towns to meet the local requirements of trade and industry. This will have two advantages. Firstly, it will reduce the strain on bigger banks, and secondly, it will check concentration of financial power in the hands of a few big banks.

    d) The banking system in underdeveloped countries should provide cheap remittance facilities to enable the movement of funds from one place to another so as to meet the requirements of trade and industry.

    e) The loan policy of the commercial banks in underdeveloped countries needs to be rationalized. The loans should be given strictly for productive purposes, not for the purchase of luxury consumption goods. At the same time, the banks should not give credit to the businessmen for speculative purposes.

    f) The commercial banks may also be persuaded to grant medium and long-term credit to agriculture and small-scale industries.

    g) An efficient system of banks clearing is also essential to popularize the use of cheques in public

    h) Steps should be taken to provide trained and efficient staff to the banks for improvement of efficiency. The recruitment policy may also be rationalized and appointments be made strictly on merit.

With these changes, the commercial banking can play a useful role in promoting the economic development of an underdeveloped country.

Several studies in developing countries showed that finance was the major constraint in the course of establishing business enterprises. Many businesspersons commented that in Ethiopia, the prevalence of poverty was exaggerating the problem of securing financial support from banks and lending institutions. Small business entrepreneurs should not be limited to scarce financial resources because they are engines of the economic development of the country. Banks are to be more flexible and to change their attitudes towards the modern banking operation.

The banking sector is currently characterized by excess reserve, high credit losses and high intermediation cost. There must be prudent lending system in order to direct this excess idle money into different investment projects. Excess reserve money is increasing from time to time. In the year 2002-2003, bank deposits hiked up by about 42%. The excess reserves held by banks not only posed a challenge on the profitability of the banking system, but have also had implications on the development of financial markets and the efficiency of monetary policy instruments.

Development Bank of Ethiopia (DBE):
DBE plays a vital role in the country's development process by channeling of medium and long-term financial loans to agricultural, industrial and other development projects. Especially the private sectors have got the lion's share of the bank's credit services in the agricultural, industrial and other business sectors. This is due to the growing participation of the private sector in the economy.

Insurance sector:
The insurance industry in any country has undoubtedly a very important role to play in promoting economic development.
1. In spite of the overall slowdown in economic performance in the country, the insurance industry performed very well, as a result of increased premiums, especially with respect to Aviation Marine classes of business following September, 11, 2001
2. Keep on increasing the Gross Written Premium with regard to the business of marine, the EIC directly assists the export trade in Ethiopia.

3. The Ethiopian Insurance Corporation (EIC) continues to be more and more competitive with new entrants joining the industry. The number of companies operating in the industry currently stands at nine.

4. The Ethiopian Insurance Corporation (EIC) has got an award of a B- (strong) rate for the second time, in May, 2003 by the African Insurance Organization Credit Assessment Scheme.

The Ethiopian Insurance Corporation spearheads the insurance industry, government owned, along with eight other private insurance companies that came into being after the issuance of Monetary and Banking Proclamation. The share of the government company, previously 100% in capital and branches, went down to 47% and 27% respectively, within the short period of nine years. This was mainly due to private insurance companies competing on returns and efficiency.

Micro-Finance Institutions:

Ethiopian MFIs have served 904,951 clients nationwide until June 2004. A study commissioned by the UNDP in 2000 put the number of micro-finance service seekers as six million. MFIs are serving only about 15% of the demand for micro-financial services. The Ethiopian micro-finance industry is dominantly rural with over 90% of the activities of clients residing out of the major towns. As of June 2004, the loan portfolio in the hands of active clients was over 865,875,345 birr. This makes the average loan size per client about 950 birr, according to the survey.

The industry has created employment opportunities for over 3,600 personnel as of June 2003. Most importantly, however, the industry has exhibited best practices, which can be of relevance to new MFIs. But, it is also facing certain challenges that must be seriously considered by new MFIs. One can confidently say that the ownership structure of Ethiopian MFIs is very loose. In other words, the so-called owner has no real control over the shares. The survey commented that it is generally believed that MFIs have been able to attract fairly capable professionals to their Board of Directors. The problem, however, is the inadequate commitment, unclear role of board members and general managers, lack of motivation and lack of accountability.

The general observations in the current governance structure of MFIs are lack of vested interest in the operations and success of the MFI; lack of relevant skill and

competence; regular meetings not being conducted; some members frequently absenting themselves from board meetings; and board members have no mechanism to evaluate themselves and the top management team of the MFIs. Currently there are only 23 legally registered MFIs in the country. That is a very low figure compared to the ideal number of MFIs that should be operating in the country. To make a rough estimate Ethiopia should at least have about 300 properly functioning MFIs right now.

Regarding their limited outreach, currently the number of women clients is about 35%. However, it is encouraging to note that all MFIs still give high priority to recruiting women clients. The study indicated that illegal government and NGO operations are spoiling the market; high turnover of MFIs staff, consequently degrading the skill base in the industry; lack of adequate loan or equity capital to increase loanable fund; limited support for human and institutional capacity building; limited financial products that could not address the various needs of clients, among others.

Thus, micro-finance industry in Ethiopia promotes the dual objectives of sustainability of services and outreach to the very poor. Skilled personnel who are well trained and motivated can strongly influence the successes of the functioning of MFI's.

6.   Conclusion

At present, the financial sector is not adequately equipped to provide medium- and long-term loans, credit to small and micro enterprises, or venture capital. To address these shortages, the Development Bank of Ethiopia should be strengthened both in terms of management and finance, while rural banks should be encouraged to expand. As an integral part of the expansion and development of the financial sector, the capacity of the NBE to supervise and regulate financial intermediaries should be improved. In particular, the legal and regulatory framework to govern all financial institutions should be updated; the NBE's Banking Supervision Department should be strengthened, as will prudential guidelines; and a standardized reporting system will be put in place for all commercial banks to permit the consolidation of their accounts in the monetary survey. With regard to strengthening the capacity for banking supervision, in particular, the staffing and training facilities of the NBE should be improved, and the framework for banking supervision and prudential regulation should be extended to cover all financial institutions.

The World Bank (WB) is playing an increasingly important role in Ethiopia, working with the government to develop better economic policies, creating rules for the country's various sectors and reducing Ethiopia's international debt, along with major creditor nations. The bank is also investing sizable sums into different sectors such as capacity building, the enhancement of the private sector, water and sanitation, and tourism.

The fact that Ethiopia is still one of the most under-banked countries in the world, given the size of the population, poses another challenge.

Table 17 illustrates the ratio of population and banks & insurance companies in Ethiopia.

Table 17: Ratio of population and banks& insurance companies

Years	Population: Bank Branch	Population: Insurance Firms
2000	237,828:1	697,802:1
2001	230,706.7:1	687,263.2:1
2002	227,119:1	663,366.3:1
2003	203,834:1	658,095:1

Source: Annual Reports of the National Bank of Ethiopia, 2002-03.

As a result of branch expansion, total population served per office of a bank and insurance company, which stood at 237,828 and 697,802 in Ethiopia in the year 2000 declined to 230,834 and 658,095 in the year 2003 respectively.

Private Banks are found to have performed well compared to their counterparts in the public sector, though public sector banks are found to have a wide network of branches, and more number of workforce. Thus, it is suggested that the public sector banks should improve their efficiency and become more competitive in the current liberalized economic situation.

With regard to the insurance industry in Ethiopia the main challenge is that the society's awareness of insurance is very low and the other challenge is a weak economy. Therefore, the life insurance coverage in the country is negligible because there is no awareness about its use.

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VULNERABILITY AND SHOCKS IN 15 ETHIOPIAN VILLAGES, 1999-2004[1]

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Abstract

Improving our understanding of risk and vulnerability is an issue of increasing importance for Ethiopia as it is for much of Africa. A small, but growing, body of evidence, points to the role that risk, shocks and vulnerability in perpetuating poverty. Specifically, uninsured shocks – adverse events that are costly to individuals and households in terms of lost income, reduced consumption, or the sale or destruction of assets – are a cause of poverty. Further, the threat of such events may cause households and individuals to take actions that, while providing some additional protection against shocks, come at the cost of income gains.

This paper examines who is vulnerable to different types of shocks in rural Ethiopia. Using the two most recent rounds of the Ethiopian Rural Household Survey, it will characterize the nature, frequency, and severity of climatic, economic, health and other shocks faced by rural Ethiopian households. It will assess the impact of these on levels and changes in measures of household well-being such as food consumption, total consumption, asset holdings and poverty status between 1999 and 2004. To do so, it will draw on conditional convergence models of growth, but applied here at a micro level. The modeling framework will take changes in these outcomes as a function of the lagged outcome and other covariates, a model of conditional convergence. In such models, endogeneity of these lagged outcomes is a real concern. Our data from earlier rounds of the ERHS as well as shocks information on the period prior to 1999 will provide us with instruments and we will test for the validity of these used standard techniques. Further, the paper will explore the differential effects of these initial conditions and shocks by sub-groups based on location, demographic, and wealth characteristics. Doing so will indicate whether the speed of convergence is affected by transitory shocks and will illustrate what types of households are most vulnerable to different types of shocks.

1.   Introduction

Improving our understanding of risk and vulnerability is an issue of increasing importance for Ethiopia as it is for much of Africa. A small, but growing, body of evidence, points to the role that risk, shocks, and vulnerability in perpetuating poverty. Specifically, uninsured shocks—adverse events that are costly to individuals and households in terms of lost income, reduced consumption, or the sale or destruction of assets—are a cause of poverty. Dercon (2004) demonstrates that rainfall shocks have persistent impacts on growth; further, he shows that covariates capturing the severity of the 1984-85 famine are causally related to slower growth in household consumption in the 1990s. Hoddinott and Kinsey (2001) and Alderman, Hoddinott, and Kinsey (2004) show that rainfall shocks are causally related to reduced human capital formation and that the magnitudes of these effects are meaningful. For example, Alderman, Hoddinott, and Kinsey (2004) estimate that children affected by the civil war and drought shocks of the late 1970s and early 1980s in rural Zimbabwe suffered a loss of about 14 percent of lifetime income.

Further, the threat of such events may cause households and individuals to take actions that, while providing some additional protection against shocks, come at the cost of income gains. In India, Morduch (1990) shows that asset-poor households devote a larger share of land to safer traditional varieties of rice and castor and than to riskier, high-value activities. Dercon (1996) finds that Tanzanian households with limited liquid assets grow proportionately more sweet potatoes, a low-return low-risk crop. A household with average livestock holdings devotes 20 percent less of its land to sweet potatoes than a household with no liquid assets. The crop portfolio of the richest quintile yields 25 percent more per adult than that of the poorest quintile. Dercon (2002) summarizes other studies which also point toward the conclusion that household choices that limit exposure to risk come at the cost of significantly lower incomes. But while shocks are perceived to be pervasive in much of Africa, there is surprisingly little quantitative data on their incidence, severity, and consequences.[5]

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[5] World Bank (2005) provides evidence on the impact of various shocks, most notably rainfall and illness on consumption, using cross-sectional data from 1995 and 2000. Dercon (2004), Dercon and Krishnan (2000a, 2000b), Skoufias and Quisumbing (2003) and IDS/SC-UK (2002) also discuss the impact of shocks on household welfare and Yamano, Alderman, and Christiaensen (2005) examine the impact of rainfall shocks on child health.

This paper examines who is vulnerable to different types of shocks in rural Ethiopia. Using the two most recent rounds of the Ethiopian Rural Household Survey, it will characterize the nature, frequency, and severity of climatic, economic, health, and other shocks faced by rural Ethiopian households. It examines how shocks affect households, assess what shocks have been most important to different groups in Ethiopia and will explore who was worst affected. In addition, it will assess the impact of these on levels and changes in measures of household well-being between 1999 and 2004.

2. Data

Ethiopia is a federal country divided into 11 regions. Each region is subdivided into zones and zones into *woredas*, which are roughly equivalent to a U.S. or U.K. County. *Woredas*, in turn, are divided into Peasant Associations (PA) or *Kebeles*, an administrative unit consisting of a number of villages. Peasant Associations were set up in the aftermath of the 1974 revolution. Our data are taken from the Ethiopia Rural Household Survey (ERHS), a unique longitudinal household data. Data collection started in 1989, when a survey team visited six Peasant Associations in Central and Southern Ethiopia. The survey was expanded in 1994 to encompass 15 Peasant Associations across four regions, yielding a sample of 1477 households. An additional round was conducted in late 1994, with further rounds in 1995, 1997, 1999, and 2004.

As part of the survey re-design and extension that took place in 1994, the sample was re-randomized by including an exact proportion of newly formed or arrived households in the sample, as well by replacing households lost to follow-up by those which were considered by village elders and officials as broadly similar to in demographic and wealth terms. The nine additional PAs were selected to better account for the diversity in the farming systems found in Ethiopia. The sampling in the PAs newly included in 1994 was based on a list of all households was constructed with the help of the local Peasant Association officials. The PA was responsible for the implementation of the land reform following the 1974 and held wide ranging powers as a local authority. All land is owned by the government. To obtain land, households have to register with the PA and lists of the households who have been allocated land are kept. For these reasons, these household lists were a good source

of information for the construction of a sampling frame. To ensure that landless households were not excluded, the sample was stratified within each village to ensure a representative number of landless households to be included. Similarly, an exact proportion of female headed households were included via stratification.

Table 1 gives the details of the sampling frame and the actual proportions in the total sample (Dercon and Krishnan (2003) provides further characteristics about these localities). Using Westphal (1976) and Getahun (1978) classifications, Table 1 also shows that population shares within the sample are broadly consistent with the population shares in the three main sedentary farming systems—the plough based cereals farming systems of the Northern and Central Highlands, mixed plough/hoe cereals farming systems, and farming systems based around *enset* (a root crop also called false banana) that is grown in southern parts of the country. Note too that in 1994, the Central Statistical Office collected a data set as part of the Welfare Monitoring System. Many of the average outcome variables, in terms of health and nutrition were very similar to the results in the ERHS, suggesting that living conditions in our sample did not differ greatly from those found more generally throughout rural Ethiopia, see Collier, Dercon, and Mackinnon (1997).

For these reasons, it can be argued that the sampling frame to select the villages was strictly stratified in the main agro-ecological zones and sub-zones, with one to three villages selected per strata. Further, sample sizes in each village were chosen so as to approximate a self-weighting sample, when considered in terms of farming system: each person (approximately) represents the same number of persons found in the main farming systems as of 1994. However, results should not be taken as being nationally representative. The sample does not include pastoral households or urban areas.[6] Also, the practical aspects associated with running a longitudinal household survey when the sampled localities are as much as 1,000 kilometers apart in a country where top speeds on the best roads rarely exceed 50 kilometers per hour constrained sampling to only 15 communities in a country of thousands of villages. So while these data can be considered broadly representative of households in non-pastoralist farming systems as of 1994, extrapolation from these results should be done with care.

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[6] Pastoral areas were excluded, in part, because of the practical difficulties in finding and resurveying such highly mobile households over long periods of time.

3.   Shocks in rural Ethiopia: a description

In this section, we present data on the distribution of shocks in our rural Ethiopian sample. Our objective is descriptive—we want to understand what shocks occurred, how widespread these were, who was affected by them and what were their consequences. Since this descriptive approach generates a large number of figures and tables, we focus on discerning broad patterns in these data.

We define shocks as adverse events that lead to a loss of household income, a reduction in consumption and/or a loss of productive assets. Data used in this section are based a household-level "shocks" module developed in Hoddinott and Quisumbing (2003) that was field tested and refined to meet the specific circumstance of rural Ethiopian households, which in turn was an improvement on a shock module implemented in the 1995 round of the ERHS (Dercon (2002)). The module asks households to consider a list of adverse events and indicate whether the household was adversely affected by them. For example, in the Ethiopian version, respondents are asked, "Has this household been affected by a serious shock – an event that led to a serious reduction in your asset holdings, caused your household income to fall substantially or resulted in a significant reduction in consumption?"

Shocks are divided into a number of broad categories: climatic; economic; Political/social/legal; crime; and health. Climatic shocks include obvious examples such as drought and flooding, but also erosion, frosts and pestilence affecting crops or livestock. Economic shocks include problems in terms of access to inputs (both physical access and large increases in price), decreases in output prices, and difficulties in selling agricultural and nonagricultural products. Political/social/legal shocks include the confiscation of assets or arbitrary taxation by government authorities, social or political discrimination or exclusion and contract disputes. Crime shocks include the theft and/or destruction of crops, livestock, housing, tools or household durables as well as crimes against persons. Health shocks include both death and illness. In addition, we also consider miscellaneous shocks such as conflicts and disputes with other family members, neighbors or other village residents regarding access to land or other assets. For each shock, we obtain three items of information: when this shock occurred, whether it was confined to this household or whether it was more widespread, and what were the consequences in terms of income, assets and consumption.

Our description of shocks experienced by households in our Ethiopian sample begins with Figures 1 to 5. These enumerate the shocks that occurred between 1999 and 2004 (i.e. whether a household experienced a particular type of shock at least once). Drought is the most common climatic shock with more than half the surveyed household reporting this as a shock. However, other climatic shocks are common too. For example, more than one household in three reported having been adversely affected by pests or diseases that affected crops in their field, stored crops or livestock. Input (output) shocks were also relatively common, with these also reported by more than (slightly less than) a third of surveyed households. By contrast, political/social/legal shocks were reported to be relatively uncommon in this sample over this period with no single shock being reported by more than 7 percent of respondents. While crime shocks appear relatively uncommon, the information presented in Figure 4 is slightly misleading in the sense that while few households report any one incidence of crime, a larger proportion of households—just over 20 percent—report being the victim of some sort of criminal activity. Death and illness are reported by a significant proportion of households; miscellaneous shocks such as disputes appear in this sample to be rare.

Table 2 indicates the extent to which the more commonly reported shocks are idiosyncratic (restricted to this household or this household and some others) or covariate (affecting all households in the village and possibly those nearby). Not surprisingly, drought, input, and output shocks are reported to be covariate with 79, 68, and 83 percent of affected households reporting that the spread of this shock included at least all households in the village. Theft or other crimes, death or illness are described in more than 90 percent of cases as idiosyncratic with pests and diseases affecting crops or livestock appearing to be a mix of idiosyncratic and covariate shocks.

Table 3 reports the consequences of the most commonly reported shocks. These are divided into five categories: loss of household income; income loss and reduced consumption; loss of productive assets; a combination of asset, income, and consumption loss; and other (not specified) effects. In somewhat loose terms, Table 3 explores the extent to which certain types of shocks have different effects on households. The rows are ordered so that covariate shocks (drought, input, and output shocks) appear first, followed by pests (a mix of idiosyncratic and covariate shocks) and idiosyncratic shocks (crime, death, and illness).

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While the survey module does not directly ask about the severity of impact, one could infer severity by comparing the percentages of reported impact on income and consumption with those shocks that lead to a loss of productive assets. In this regard, the striking feature of Table 3 is the absence of any obvious pattern of effect. Output shocks are somewhat less likely to lead to asset losses than other types of shocks; this may be due to the incidence of these shocks—see below. A death of a husband, wife, or another person is also less likely to lead to asset losses. By contrast, drought, input shocks, pests, and illnesses all are associated with loss of productive assets by at least 40 percent of households reporting being affected by these shocks.

We investigated further who is affected by these shocks, based on "pre-shock" characteristics. That is to say, we disaggregate the sample by characteristics observed in the 1999 survey round and cross-tabulate these against shocks that occurred between 1999 and 2004 as reported by households in 2004.. While such information by itself cannot be taken as an indicator of vulnerability (because it does not take into account the severity of shocks nor its impact), it provides some clues as to what types of households are most likely to be affected by different types of shocks.
In general, the incidence of these shocks does not differ markedly by characteristics such as sex of head (27 percent of sampled households were female-headed in 1999) with the exception of illness shocks which are much more commonly reported by male-headed households. There are no marked differences when we disaggregate on the basis of other demographic characteristics such as age of head, household size or dependency ratios. Households headed by individuals who have any schooling (only 17 percent of household heads have any schooling) were more likely to report being adversely affected by economic shocks affecting input and output markets as well as illness. While this may seem counter-intuitive, it may be that such households are more likely to experience such shocks because they are more likely to be engaged in market transactions. By contrast, there are some significant differences when we disaggregate by land quintiles.[7] Better-off households are more likely to be affected by pest, input, and output shocks.

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[7] These land quintiles are based on a household's landholdings relative to other households in the same village. This procedure is preferable to calculating quintiles across the entire distribution in the data, since different areas have different potential and land quality.

4. Shocks in rural Ethiopia: An econometric assessment

While the discussion in Section 3 provides a detailed overview of the types of shocks experienced by households in our sample, it does not give us a quantitative sense of the consequences of these shocks nor does it tell us anything about the persistence of their consequences. Also, there are limits to cross-sectional analysis—it is difficult to tell for example if conditional on location, wealth and other observable characteristics, female headed households are more adversely affected by droughts than male-headed households. So in this section, we complement our descriptive analysis with an econometric assessment of the impact of these shocks on one measure of welfare, log per capita consumption. Our baseline results are reported in Table 4. The dependent variable is the log of per capita consumption. This is constructed in the following fashion. Food and nonfood consumption were covered in separate modules in the questionnaire. The section on food asked about 33 specified food items; for each, households were asked about the amounts they had consumed out of purchases, consumption out of own stock and consumption from gifts and wages in-kind in the last week. These consumption levels are valued using prices obtained from local market surveys fielded at the same time as the household survey. Nonfood items are limited to non-investment goods so that we include consumables such as matches, batteries, soap, kerosene and the like, clothing and transport but exclude investments in durable goods such as housing. Different recall periods were used for different items; for comparability all are changed into monthly (30 day) consumption and expressed in per capita terms.[8]

Log per capita consumption (*lnpcexp*) of household i in village v in 2004 is a function of two broad sets of household characteristics: household characteristics observed in 1999 ($H_{iv, 1999}$) and shocks to households experienced between 1999 and 2004 ($S_{iv, 2004}$). In addition, we include a vector that captures such potentially confounding factors such as the month in which the interview took place to capture seasonality. Vectors of parameters to be estimated are γ, β, and κ. Denoting $\varepsilon_{iv, 2004}$ as the white noise disturbance term, we write this relationship as:

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[8] Dercon and Krishnan (2003) show that earlier survey rounds, using various permutations of adult equivalency does not fundamentally affect the analysis of the determinants of living standards.

$$Inpcexp_{iv,\ 2004} = \gamma \cdot H_{iv,\ 1999} + \beta \cdot S_{iv,\ 2004} + \kappa \cdot X_{iv,\ 2004} + \varepsilon_{iv,\ 2004}\ .$$

Observable household characteristics are characteristics of the head (age, sex and schooling), demographic household characteristics (log size and dependency ratio), and household wealth (landholdings and livestock ownership, the latter expressed in livestock units). Also included are measures of households' networks and connections within the village that may also affect consumption levels: whether the household belongs to an ethnic or religious minority; whether it is related to anyone holding an official position in the locality; and whether a parent of the household head was an important person in the social life of the village. Dummy variables are included for each village so that this is, in effect, a village fixed effects regression. The implication is that shocks are identified by within-village variation, which may make identification of covariate shocks difficult. Nevertheless, more covariate shocks are found in virtually all villages. Even if the case of drought, there is no village where all households indicate having been affected in the last five years. Both factors appear to allow identification of the impact of these relatively covariate in our data.

Given that some shocks are relatively more common than others, we aggregate the data we have on shocks into the following categories, whether the household had experienced, between 1999 and 2004, the following events that had led to a loss of household income, a reduction in consumption and/or a loss of productive assets: a drought; too much rain, pests or diseases that affected field crops or crops in storage; pests or diseases that affected livestock; difficulty in obtaining inputs or increases in input prices; inability to sell or decreases in output prices; lack of demand for nonagricultural products; theft or destruction of tools, inputs, cash, crops, livestock, housing or consumer goods, death of head, spouse or another person; and illness of head, spouse or another person.

Basic results are reported in Table 5. Observable household characteristics associated with wealth in 1999 (land, livestock and education of the head) are positively correlated with consumption levels in 2004. Bigger households and households with higher dependency ratios have lower consumption levels but other demographic characteristics (sex and age of the household head) do not have a statistically significant effect on consumption. "Connections" appear to help. Households who have relations in positions of power, or whose parents were

important in the village, have higher levels of consumption controlling for other household characteristics as do households who are part of an ethnic minority within the village.

The striking feature of the results of the shocks variables is how *unimportant* many of them seem to be. Experiencing a drought at least once in the previous five years lowers per capita consumption by approximately 20 percent and experiencing an illness which reduces per capita consumption by approximately 9 percent are the only shock variables that have a statistically significant effect on consumption, and the latter is only significant at the 11 percent level. Other past shocks have, controlling for a wide range of household characteristics, have no statistically significant impact on current (2004) levels of consumption.

Table 4, however, examines only the average effects of these shocks across all households in the sample. In Table 5 we disaggregate households by pre-shock (1999) characteristics and explore the extent to which the impact of shocks differs across different household types. Table 5 disaggregates on the basis of sex of head, education of head and landholdings. It indicates that drought and illness shocks are more important for certain household types than for others. Female headed households, households where the head has no schooling and households in the bottom three quintiles of landholdings within their villages all report a much bigger impact of drought shocks experienced at least once in the last five years on current levels of consumption. Illness shocks appear more important for richer households (as measured by relative landholdings) and households where the head has no schooling.

Lastly, Table 6 examines the extent to which shocks have long lasting effects. We take the set of shocks reported in the previous tables and disaggregate them into those that occurred in the previous two years and those that occurred between 2 and five years prior to the 2004 survey. Three past shocks would appear to have persistent effects: droughts, falls in demand for nonagricultural products and illnesses all experienced between 1999 and 2001 are all associated with lower consumption in 2004. Not only do we observe a statistically significant effect of these shocks, recall that we are controlling for a large number of potentially confounding factors *and* the magnitude of these effects is meaningful with each reducing current consumption by between 13 and 19 percent.

Somewhat surprisingly, the large falls in grain prices observed in Ethiopia in 2001 do not appear to affect consumption. However, this price shock is likely to have had a larger effect on households in grain-surplus areas.[9] To investigate further, we re-estimated this model, restricting the sample to three villages (Yetmen, Sirbana Godeti, and Trirufe Ketchma) that historically have been grain surplus villages. We do find evidence of a persistent effect of the output price shock. In these three villages, households reporting that they had been adversely affected by falls in output prices between 1999 and 2001 have per capita consumption levels in 2004 approximately 28 percent lower than comparable households not reporting this shock.

We briefly note a robustness check. The specification used controls for household characteristics in 1999, including human capital (education), social capital and physical capital (land, livestock). We re-estimated these regressions using the level of consumption in 2004 as the dependent variable, using the same control variables as before but also including lagged (1999) consumption as a regressor. Lagged consumption was instrumented using further lags of consumption and asset values (using preceding rounds of the data). The results were effectively the same in terms of the impact of the shock variables. In addition to asking households about individual shocks that had adversely affected them, households were also asked to enumerate the three most important adverse shocks that they had experienced over the previous five years. These are summarized in Table 7; they provide a further way of checking the validity of the econometric results. Virtually all households (95 percent) reported a most important shock, 85 percent reported a second most important shock and 62 percent reported a third most important shock. The most commonly reported "worst shocks" are drought (47 percent), death (43 percent), and illness (28 percent). When we disaggregate by degree of importance of these worst shocks, we see that these same three shocks were always listed as being the most important adverse shocks experienced by these households.

Two, drought and illness, also appear as shocks that adversely affect current consumption. While death shocks do not appear to have an effect on consumption, Table 3 indicates that—unlike other shocks—households often reported that the death of a husband, wife or another person had an "other effect" (other than an effect

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[9] In a related exercise, we explored whether the fall in international coffee prices had a similar adverse affect on households in coffee growing areas but could find no evidence of such an effect in our sample.

on income, consumption, or productive assets) on households. Input and output shocks, pests affecting crops and crime are all reported by between 11 and 14 percent of households. Other shocks are less frequently reported. Strikingly, policy shocks (land redistribution, state confiscation of assets, resettlement, villagization or forced migration, bans on migration, forced contributions, or arbitrary taxation) which featured so prominently in earlier rounds of the ERHS have substantially diminished in importance. Only 7 percent of households reported being adversely affected by such policy shocks compared to 42 percent who reported being affected by these prior to 1994 (Dercon 2002, Table 1).

5.   Conclusions

Ethiopia is a shock-prone country. Virtually all households report being adversely affected by shocks between 1999 and 2004. Drought shocks and illness shocks are the most important shocks in the sense that households report these as being especially important *and* controlling for other household and village characteristics, they are associated with lower levels of per capita consumption. The magnitudes of these effects are nontrivial. Experiencing a drought at least once in the previous five years lowers per capita consumption by about 20 percent and experiencing an illness reduces per capita consumption by approximately 9 percent. In particular, the impact of drought shocks has to be put in perspective: the main drought in this period, in 2002, tends to be considered by the government and relief agencies as a well-managed drought episode, with few reported famine deaths across the countries.

Our finding of an effect of about 20 percent lower consumption, several years later, suggests that its impact was still severe despite the reasonably effective response.

Other shocks are more important for certain types of households and for certain localities than for others. Female-headed households, households where the head has no schooling and households in the bottom three quintiles of landholdings within their villages all report a much bigger impact of drought shocks experienced at least once in the last five years on current levels of consumption. Illness shocks appear more important for richer households (as measured by relative landholdings) and households where the head has no schooling.

The importance of different types of shocks appears to be changing. Dercon (2002) reports that in the 1990s, drought and policy shocks were the predominant adverse events reported by these households. While drought remains important, policy shocks such as land redistribution and arbitrary taxation are now much less important than they were while death and illness shocks are now much more important.

Some shocks appear to have long lasting effects. Households reporting have been adversely affected by drought, illness, or (in the case of grain surplus villages) output price shocks between 1999 and 2001 had significantly lower levels of consumption—between 13.7 and 28 percent—when observed several years later in 2004. Dercon (2004) reports similar results, showing that drought shocks experienced in the 1980s were causally associated with slower growth in the 1990s. That shocks have long-lasting effects has important policy implications: uninsured risk does not just cause short-term welfare fluctuations but has long-term effects in terms lower consumption and poverty. Protecting households against shocks may well have a high return in fighting long-term 'chronic' poverty. Nevertheless, these estimates are still relatively 'short-term' effects, and the true long-term impact cannot be identified from this work. For example, the implications of uninsured risk on activity and asset decisions, whereby households avoid profitable but risky activities for fear of low welfare levels if droughts or other serious events occurs would affect consumption and poverty levels, but would not be identified in this analysis. In short, the true impact of risk and shocks may still be underestimated.

Hoddinott and Quisumbing (2003) note that understanding shocks and their consequences is a necessary (though not sufficient) step to the design of programs and interventions designed to blunt their pernicious effects. Specifically, they note that assessing vulnerability to shocks requires answering four interlinked questions: (1) Who is vulnerable? (2) What are the sources of vulnerability? (3) How do households cope with risk and vulnerability? and (4) What is the gap between risks and risk management mechanisms? This paper provides direct evidence on questions (1) and (2) as well as showing that the inability of households to insure against or mitigate these shocks has led to subsequent reductions in household welfare. Companion work by Gilligan and Hoddinott (2004, 2005) and Hoddinott, Dercon, and Krishnan (2005) provides evidence on (3) and (4).

A final comment is due on the methodology used. The results are dependent on linking information on self-reported shocks to welfare outcomes. The results appear suggestive and robust, but this does not imply that there is no problem with this type of information. If unobserved heterogeneity is correlated with the direct shock terms, then what we may be picking up is not the impact of the shock, but some other characteristic, correlated ith observing particular shocks. Arguably, we may then be measuring that unobserved characteristic and not the impact of the shock. While possible, this does not seem to be a convincing explanation for our findings related to shocks such as drought. Still, we may be missing some very important events and trends in this period, not readily picked up in our 'shocsks' module. Our evidence on the relative importance of particular shocks may then be misleading. For example, a gradual deterioration of circumstances, for example due to land degradation or a gradual decline in returns and prices for some activities, may be relevant for outcomes, but not picked up readily in our questionnaires. These concerns suggest that more evidence is needed on how to collect effective information on shocks and other events and trends, to analyse the impact of uninsured risk and priorities interventions.

Table 1: The distribution of households in the Ethiopian Rural Household Survey, by agro-ecological zone

	Population share in 1994 (percent)	Sample share in 1994	Number of villages
Grain plough complex: Northern Highlands	21.2	20.2	3
Grain plough complex: Central Highlands	27.7	29.0	4
Grain plough: Arsi/Bale	9.3	14.3	2
Sorghum plough/hoe: Hararghe	9.9	6.6	1
Enset (with or without coffee/cereals)	31.9	29.9	5
Total	100.0	100.0	15

Source: Dercon and Hoddinott (2004).
Note: Percentages of population share relate to the rural sedentary population; they exclude pastoralists who account for about 10 percent of total rural population.

Table 3: Extent of shocks, by selected shocks, Ethiopia

How widespread was this shock?					
	Households reporting this shock	Only affected this household	Affected some households in this village	Affected all households in this village	Affected this village and nearby villages	Affected areas beyond this *kebele*
	Idiosyncratic ←---------------------→ covariate					
Drought	52%	6%	15%	32%	26%	21%
Pests or diseases affecting crops or livestock	38	20	29	25	18	8
Input shocks (price increase or difficulties in access)	35	13	18	27	23	18
Output shocks (price decrease or difficulty making sales)	29	6	12	36	33	14
Victim of theft or other crime	22	77	14	4	3	1
Death of husband, wife or another person	35	80	10	5	4	1
Illness of husband, wife or another person	39	83	9	5	3	0

Notes: Data are taken from the Ethiopian Rural Household Survey, Round 6; 1,368 households provided reported information.

Table 4: Severity of shock, by selected shocks, Ethiopia

	Loss of household income	Income loss and reduced consumption	Loss of productive assets	Asset loss; asset loss and income loss or reduction in consumption	Other effects
Drought	25%	32%	21%	20%	1%
Input shocks (price increase or difficulties in access)	26	31	17	23	3
Output shocks (price decrease or difficulty making sales)	33	32	10	22	4
Pests or diseases affecting crops or livestock	24	35	20	19	2
Victim of theft or other crime	31	26	24	19	1
Death of husband, wife or another person	25	15	15	19	26
Illness of husband, wife or another person	29	21	20	24	7

Notes: Data are taken from the Ethiopian Rural Household Survey, Round 6; 1,368 households provided reported information.

Table 5: Impact of shocks and other covariates on (log) consumption per capita, 2004

Covariate	Estimated coefficient	t statistic (absolute value)
Shocks in prior five years		
Drought	-0.196	2.69**
Pests or diseases that affected field crops or crops in storage	-0.029	0.40
Pests or diseases that affected livestock	0.013	0.19
Difficulty in obtaining inputs or increases in input prices	0.036	0.75
Inability to sell outputs or decreases in output prices	-0.077	1.15
Lack of demand for nonagricultural products	-0.131	1.13
Theft or destruction of tools, inputs, cash, crops, livestock, housing, or consumer goods (crime)	0.036	0.55
Death of head, spouse, or another person	0.025	0.63
Illness of head, spouse, or another person	-0.096	1.64
Other controls		
Female-headed, 1999	-0.012	0.21
Log age head, 1999	0.097	1.37
Head has schooling, 1999	0.096	2.28**
Log household size, 1999	-0.287	7.65**
Dependency ratio, 1999	-0.039	2.60**
Household in second land quintile, 1999	0.056	0.91
Household in third land quintile, 1999	0.149	1.65*
Household in fourth land quintile, 1999	0.153	2.33**
Household in top land quintile, 1999	-0.031	0.37
Livestock units, 1999	0.029	3.24**
Member, ethnic minority	0.169	2.52**
Member, religious minority	0.078	1.04
Relative holds official position in PA	0.125	3.00**
Mother or father was important in social life of village	0.161	3.20**
R^2	0.33	
Sample size	1,290	

Notes: Standard errors are robust to locality cluster effects;

 * Significant at the 10 percent level;

** significant at the 5 percent level; PA dummies, month of interview dummies, and perceptions of rainfall in previous harvest year are also included but not reported.

Table 6: Impact of shocks by household characteristic on (log) consumption per capita, 2004

	Female-headed households	Male-headed households	Head has no schooling	Head has some schooling	Household is in bottom three land quintiles	Household is in top two land quintiles
Drought	-0.442	-0.094	-0.208	-0.164	-0.205	-0.145
	(3.63)**	(1.02)	(2.57)**	(1.81)*	(2.41)**	(1.03)
Pests or diseases that affected crops	0.017	-0.026	0.016	-0.255	-0.018	-0.039
	(0.14)	(0.29)	(0.22)	(2.95)**	(0.23)	(0.51)
Pests or diseases that affected livestock	-0.076	0.049	0.021	-0.014	-0.053	0.051
	(0.39)	(0.64)	(0.26)	(0.20)	(0.65)	(0.49)
Difficulty in obtaining inputs or increases in input prices	0.012	0.046	0.054	-0.045	0.035	0.079
	(0.09)	(0.92)	(0.91)	(0.55)	(0.66)	(0.74)
Inability to sell outputs or decreases in output prices	0.031	-0.060	-0.092	-0.030	-0.063	-0.156
	(0.13)	(1.14)	(1.13)	(0.31)	(0.49)	(1.57)
Lack of demand for nonagricultural products	-0.191	-0.173	-0.175	0.238	-0.100	-0.279
	(0.66)	(2.24)**	(1.30)	(0.79)	(0.81)	(1.70)*
Crime shocks	0.181	0.001	0.017	0.072	-0.010	0.122
	(1.21)	(0.10)	(0.21)	(1.17)	(0.15)	(1.01)
Death of head, spouse or another person	-0.184	0.061	0.038	-0.057	0.036	0.048
	(1.52)	(1.42)	(0.75)	(0.94)	(0.71)	(0.74)
Illness of head, spouse or another person	-0.138	-0.069	-0.139	0.079	-0.066	-0.154
	(0.78)	(1.05)	(2.33)**	(0.78)	(0.94)	(2.24)**

Notes: Specification as per Table 7; standard errors are robust to locality cluster effects; * Significant at the 10 percent level; ** significant at the 5 percent level; PA dummies, month of interview dummies, and perceptions of rainfall in previous harvest year are also included but not reported.

Table 7: Impact of shocks by timing of shock on (log) consumption per capita, 2004

Covariate	Estimated coefficient	t statistic (absolute value)
Drought, 2002-04	-0.163	2.46**
Drought, 1999-2001	-0.137	2.72**
Pests or diseases that affected crops, 2002-04	-0.006	0.07
Pests or diseases that affected crops, 1999-2001	-0.052	1.05
Pests or diseases that affected livestock, 2002-04	-0.002	0.18
Pests or diseases that affected livestock, 1999-2001	0.022	0.24
Difficulty in obtaining inputs or increases in input prices, 2002-04	0.055	0.63
Difficulty in obtaining inputs or increases in input prices, 1999-2001	0.001	0.02
Inability to sell outputs or decreases in output prices, 2002-04	-0.187	2.23**
Inability to sell outputs or decreases in output prices, 1999-2001	-0.026	0.36
Lack of demand for nonagricultural products, 2002-04	-0.037	0.19
Lack of demand for nonagricultural products, 1999-2001	-0.195	2.28**
Crime shocks, 2002-04	-0.018	0.36
Crime shocks, 1999-2001	0.083	0.99
Death of head, spouse, or another person, 2002-04	0.043	0.69
Death of head, spouse, or another person, 1999-2001	-0.001	0.02
Illness of head, spouse, or another person, 2002-04	-0.019	0.32
Illness of head, spouse, or another person, 1999-2001	-0.151	2.33**
R^2	0.34	
Sample size	1,290	

Notes: Specification as per Table 7; Standard errors are robust to locality cluster effects; * Significant at the 10 percent level; ** significant at the 5 percent level; PA dummies, month of interview dummies, and perceptions of rainfall in previous harvest year are also included but not reported.

Table 11: Household self-reports of the worst shocks experienced between 1999 and 2004

Most commonly reported worst shocks	Percent
Drought	46.8
Death of head, spouse or another person	42.7
Illness of head, spouse or another person	28.1
Inability to sell outputs or decreases in output prices	14.5
Pests or diseases that affected crops	13.8
Crime	12.7
Difficulty in obtaining inputs or increases in input prices	11.3
Policy/political shocks (land redistribution, state confiscation of assets, resettlement, villagization, or forced migration, bans on migration, forced contributions, or arbitrary taxation)	7.4
Pests or diseases that affected livestock	7.0

Most commonly reported worst shocks, by degree of importance	Percent
Most important shock	
Drought	32.6
Death of head, spouse, or another person	26.1
Illness of head, spouse, or another person	8.0
Second most important shock	
Death of head, spouse, or another person	14.8
Drought	13.6
Illness of head, spouse, or another person	12.3
Third most important shock	
Illness of head, spouse, or another person	12.2
Death of head, spouse, or another person	8.1
Drought	8.0

Notes: Data are taken from the Ethiopian Rural Household Survey, Round 6; 1,371 households provided reported information; in response to the question, "what were the three most important shocks to affect this household," 95 percent of households reported a most important shock, 85 percent reported a second most important shock, and 62 percent reported a third most important shock.

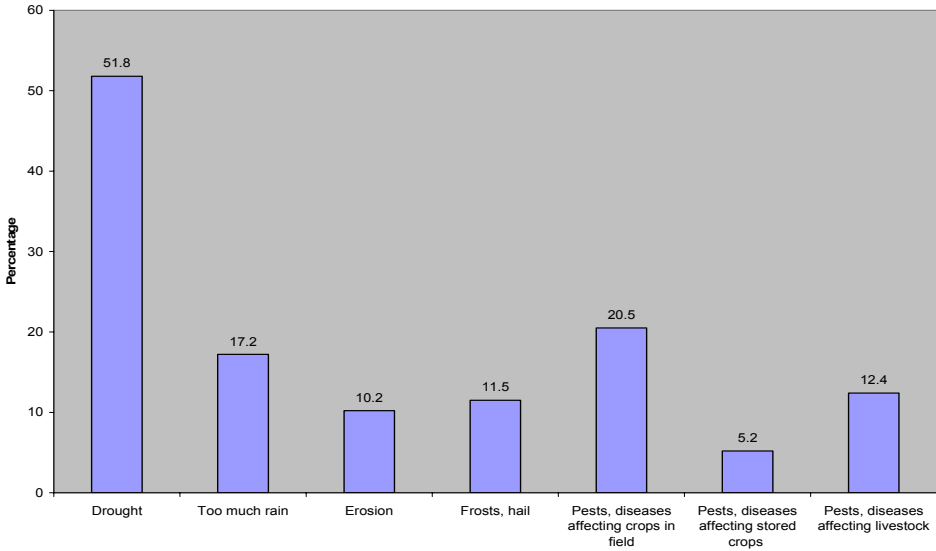**Figure 1: Households reporting climatic shocks between 1999 and 2004, Ethiopia**

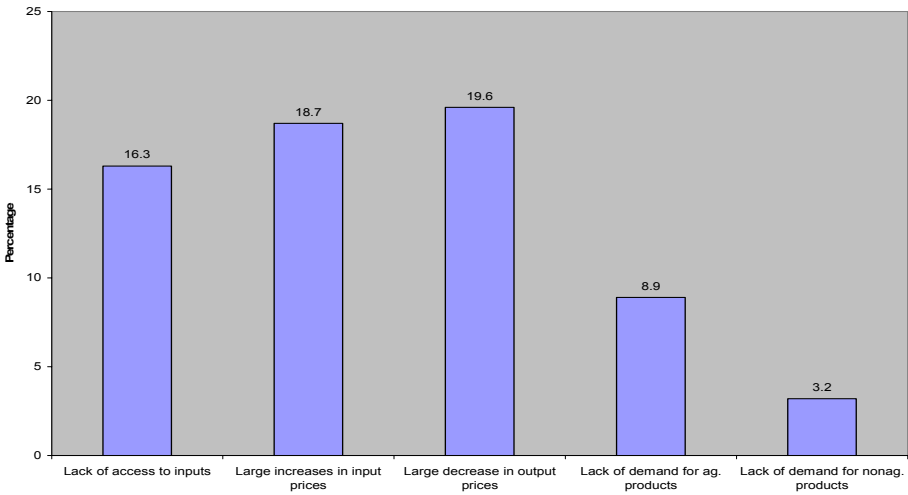**Figure 2:   Households reporting economic shocks between 1999 and 2004, Ethiopia**

Figure 3:   Households reporting political/social/legal shocks between 1999 and 2004, Ethiopia
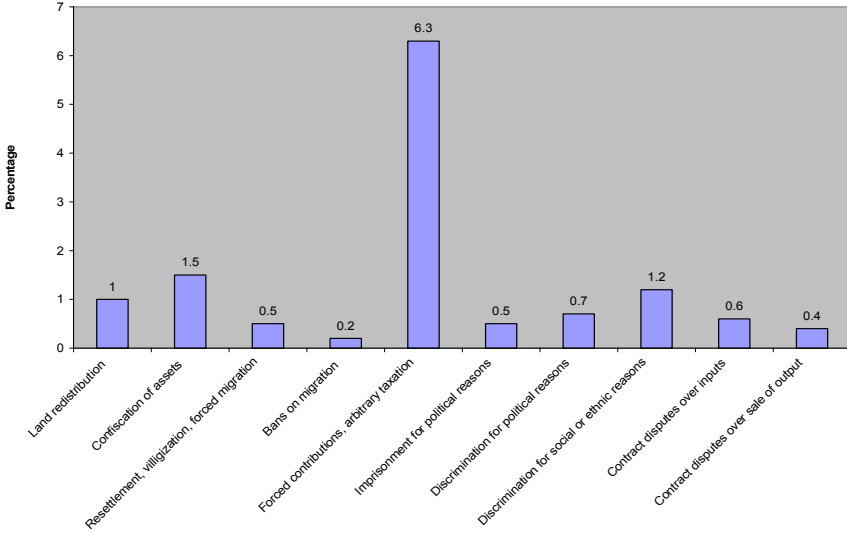

Figure 4: Households reporting crime shocks between 1999 and 2004, Ethiopia
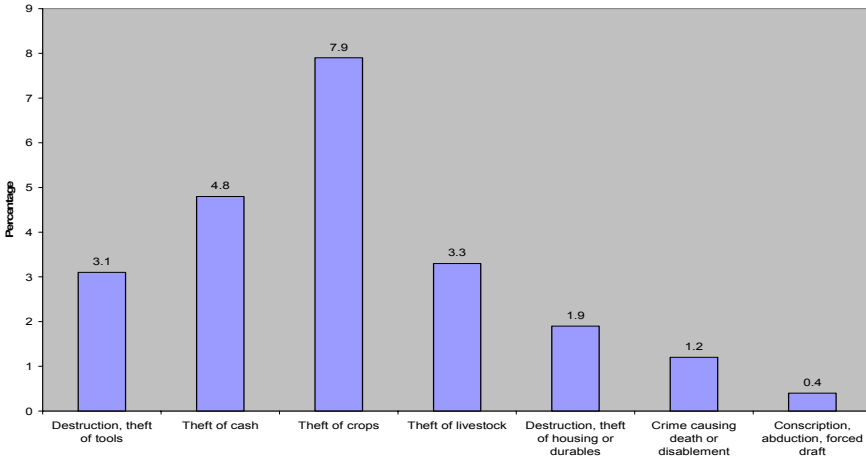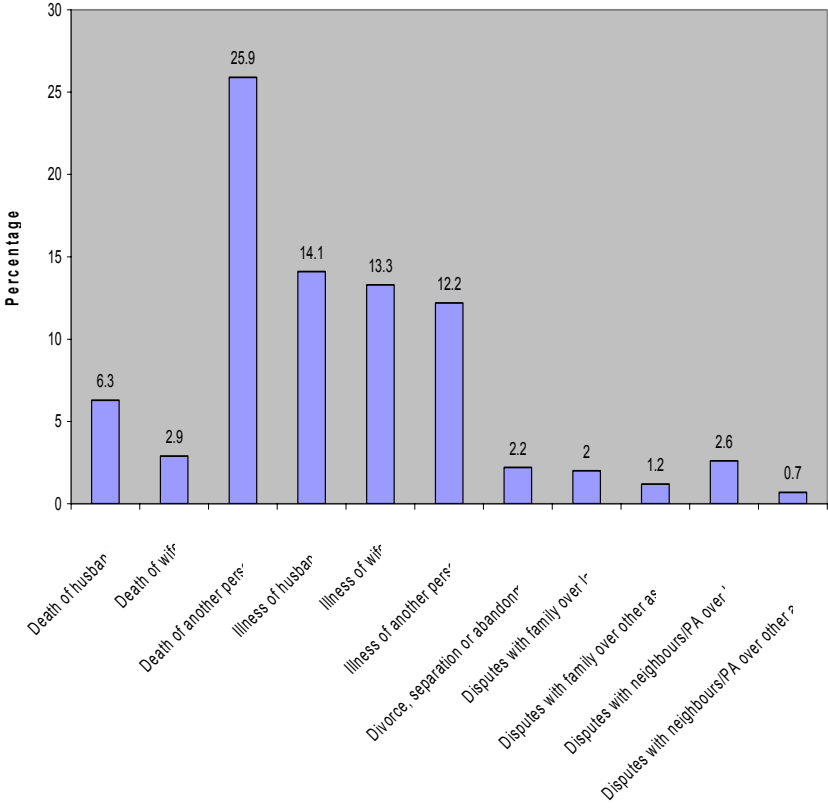
Figure 5: Households reporting death/illness/conflict shocks between 1999 and 2004, Ethiopia

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AID AND THE DUTCH-DISEASE IN ETHIOPIA

Teferi Mequaninte[99]

Abstract

The paper analyses the "Dutch Disease" effect of foreign aid on the Ethiopian economy. After a brief review of aid theory, it goes on reviewing the available evidences about the Dutch disease effects aid has in the other countries. Then illustrative model is presented. The study employed three stage-least square methods in estimating the real exchange and aid variable, on the one hand, and export performance and aid, on the other. The finding is that external aid inflows to Ethiopia result in appreciation of the real exchange rate and hence loss of export competitiveness, that is, "Dutch Disease" problem has been identified. The study concludes that for external aid inflows to be an effective investment, economic policy needs to focus on infrastructure development and the government needs to subsidize firms in the tradable sector.

1.   Introduction

Following the introduction of the Structural adjustment program (SAP) in 1992 to the Ethiopian economy, there was a massive inflow of foreign aid in the form of grants, concessional loans and technical assistance. Net aid[1] inflows to Ethiopia during the Derg period were around 7 percent of GDP and have been doubled to 14 percent of GDP during the EPRDF regime. These elevated flows have raised a number of concerns, ranging from fears about the effect of aid inflows on the real exchange rate and export performance. The source of anxiety for all this is the Dutch disease problem of foreign aid. While seemingly beneficial foreign aid inflows may generate undesirable effects in the economy. These undesirable effects include a decline in export performance and manufacturing production caused by appreciation of the real exchange rate and resources moving out of manufacturing into other sectors

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[1] Aid according to the OECD definition is both grant and a loan with grant element of 25 percent or above.

(Timothy, 1997). There are also concerns about aid sustainability. Specifically, while LDCs have been forced to take on greater burden of global adjustment, most donor countries have been unwilling to expand financial support for adjustment in the LDCs (Bigsten, 2003). These could be due to different motives by the donor countries. Instead of addressing the most developmental constraints of a recipient country, donors may wish to enhance the military prow ness of a recipient country, to promote their commercial interest, to support a friendly government in power, and/or to acquire goodwill in the expectation that it would be politically valuable later (Krueger, 1991). As has been well documented in the works of Adams et al (1994), foreign aid inflows cannot continue indefinitely given donor fatigue and the growing competition for aid funds among LDCs.

Still, there are concerns about the absorptive capacity of the recipient economy, and particularly of the government itself. The impact of aid is rather complex, since there are direct effects of aid disbursement as well as indirect effect on the spending patterns of the public sector of the recipient country and on government policy. The government may use aid to escape the burdens of its foolish economic policy. (Mosley et al, 1999). The more general concern of Dutch disease is whether external aid inflows have been temporary or permanent and whether they were spent on imports or domestically produced goods and services.

The principal economic rationale for aid is to increase growth rates in recipient countries, usually measured by its impact on real exchange rate. Yet, after decades of capital transfer to Ethiopia, the effectiveness of achieving this objective remains questionable as confirmed by numerous studies of the empirical relationship between aid and growth. In an effort to boost Ethiopia's economic growth the real exchange rate and its interplay with external aid inflows have been crucial for purposes of strategic economic decision making and efficient policy management.

This paper attempts to develop an empirical model for the real exchange rate impact of foreign aid in Ethiopia. The paper then links this with an export performance model in order to identify policy implications and recommendation. Generally it is hypothesized, first, that whether external aid inflows to Ethiopia result in real exchange rate appreciation or depreciation is an empirical question, and second, that exports respond positively to a good policy management of foreign aid.

This paper has five sections. Following this introductory section, part two presents a review of the existing literature regarding pro-aid and contra-aid arguments. Section three is devoted to the discussion of model specification, data sources and methodology. The model specification is based on the Dutch disease model as reviewed in section two. Also in this section are empirical result and interpretation of the coefficients. The last part summarizes the paper and provides conclusions and policy implications.

2. Literature survey

There is a substantial amount of literature on the macro-economics of aid. The pro-aid argument focuses on the complementarity of aid to growth. Prolific writers like Griffin, Todarro and Chenery and Strout are in this group. The major themes covered in the pro-aid argument include the two-gap model; aid and growth; aid, investment and imports; and the saving debate.

The two-gap model was developed by Bruno and Chenery (1962) and then elaborated further in Chenery and Strout (1966). This model had three potentially binding constraints on growth: a saving constraint (which might limit investment), a foreign exchange constraint (which might limit investment because of the high import content of investment), and an absorption constraint (which set an upper limit for the rate of growth).

Griffin (1970) and Todarro (1989), for instance, stressed that whenever there is a foreign exchange gap as well as a saving gap, growth would be impaired unless that gap is filled by foreign aid. Development economists such as Rosenstient Rodan (1961), as cited in Hansen et al 2000, also assumed that each dollar of foreign resources in the form of aid would result in an increase of one dollar in total savings and investment. It is based on this belief that donors like European Economic Commission EEC and World Bank provide official development Assistance (ODA) to the Less Developed countries (see EEC, 1990; World Bank, 1994). Similarly, Chenery and Strout (1966) argued that aid's impact on growth is as a supplement to scarce domestic resource. Clark (1991) has also over emphasized the importance of foreign aid by saying that "foreign aid can be used on the immediate relief of poverty,

infrastructure, and institutional building or on promoting agriculture and capital investment".

The two-gap model has been subject to a number of general criticisms and some directed more specifically at its application to analyzing aid's impact on the economy. Findlay (1971) was the first to criticize application of the two-gap model and Edwards and Van Wijnbergen (1989) heightened the attack on the ground that it ignores relative prices, and thus turns the focus towards the real exchange rate as a crucial variable influencing the effectiveness of foreign aid (Dutch disease theory).

Unlike the "two-gap" literature, the modern view of developmental aid theory focuses on both resource accumulation and improving the efficiency of resource use (Krueger O. 1985). In the new macro-economics of aid, authors like Loxley (1998) point to the quality of assistance and direction of aid. Griffin (1970) underlined that if aid to developing countries displaces their saving rate or raises its capital output ratios (x/k) to a sufficient extent, then it is just possible that aid may immiserise the recipient countries. Morrissey (1992) has argued that the link between aid and growth is indirect and that aid affects the real exchange rate, which in- turn may constrain any beneficial impact on the growth rate. Similarly Edwards and Van Wijnbergen (1989), Vos (1989), and Younger (1992), have focused on aid as causing Dutch disease.

Historically, the term "Dutch disease" was first used to reflect the decline in the Netherlands' export competitiveness following the discovery of the Groningen gas field in the early 1970s (Benjamin et al., 1989). Dutch disease refers to the coexistence within the traded goods sector of progressing and declining or booming and lagging sub-sectors (Corden and Neary, 1982). A boom is one of the traded goods sectors (due to for instance foreign aid) that raises the marginal product of the mobile factors employed in that sector. Higher factor returns in the booming sector will draw mobile factors away from the other sectors and into the booming sector (resource movement effect). The non-booming sector will thus contract. The higher real incomes resulting from the boom leads to extra spending on the non-tradable, which raises their price (spending effect). The spending effect will, in turn, cause the real exchange rate to appreciate and hence a loss of export competitiveness in the international market. Most studies of Dutch disease literature since then have been used to analyze the problems associated with managing revenue from the booming sector of the economy.

From a structural adjustment and macro-economics perspective, Edwards and Van Wijnbergen (1989) have stressed the similarity between increased income from natural resource and aid inflows by indicating that firstly, both come in the form of additional foreign exchange, secondly, the impact of both is temporary and thirdly, when spent on non-traded goods put upward pressure on the real exchange rate.

Van Wijnbergen (1986) using the Dutch-disease model to analyze the effect of foreign aid in Africa, arrived at the conclusion that, by partially spending on non-traded goods, increase in real volume of aid places upward pressure on the real exchange rate. Yet Ogun (1995) found that capital inflow to Ghana caused the real exchange rate to depreciate. Similarly, in their study of foreign aid and the Dutch disease in Tanzania, Adams et al. (1994) found that the aid inflows to Tanzania were buying economic reforms and policy changes that were pro-tradable and dampened the potential for the aid induced real appreciation. The stabilization program initiated by New Zealand in 1984 led to high interest rates, an inflow of foreign capital, and the appreciation of their exchange rate. Although trade liberalization initially resulted in depreciation of the real exchange rate in Chile, the real exchange rate began appreciating between 1979 and 1982 as a result of capital inflows and wage indexation (Schiff and Valdes, 1998).

3.   Model specification and estimation

3.1   Model specification

The impact of external aid inflows on the real exchange rate (RER) is estimated using the model of real exchange rate developed by Edwards (1989). In the modern theory the real exchange rate, (RER) is defined as the domestic relative price of tradable goods (P_T) to non-tradable goods (P_{NT}), that is, $RER = (eP_{T/}P_{NT})$ compatible with the attainment of internal and external equilibrium.

Internal equilibrium presupposes that the market for non-tradable clears in the current period and is expected to be so in the future and it is attained when the supply and demand for non-trabable goods are equal (Montiel 1996, cited by Baffes et al, 1999).

$$Y_N(RER) = (1-\alpha)RERC + G_N, \qquad \partial Y_N / \partial RER < 0 \tag{1}$$

Where,

Y_N is the production of non-traded goods,

G_N is government consumption of non traded goods,

α is the share of traded goods in total consumption, and

C is total private consumption measured in traded goods

e is the nominal exchange rate

External equilibrium (trade balance) implies that the current account balances both in the current and future periods are compatible with long-run sustainable capital flows (Elbadawi, 1994). Thus, using Montiel (1996, as cited by Baffes et al, 1999) equations below, the hypothesized relationships can be specified.

$$f = Y_T(RER) - G_T - \alpha C + A - rf \tag{2}$$

Where,

f is net foreign assets, and f is change in net foreign assets over time,

$Y_T(RER)$ is the domestic supply of traded goods,

G_T is government spending on traded goods

A is net aid inflows and rf is external debt services.

The intersection of internal and external balance (equation 1 and 2) produces the equilibrium real exchange rate. At such an intersection, both the internal and external balance are achieved. Setting the right hand side of equation 2 to zero, and combining this with equation 1 gives;

$$RER^* = RER^*(G_N, G_T, A, r_w) \tag{3}$$

Where, r_w is the world interest rate.

The above derivation is for illustrative purpose and it serves us to show how the fundamentals (government consumption, Terms of trade, Capital formation, and technological progress) influence the movement of the real exchange rate. For practical application it is possible to extend the model in many ways. For example,

Baffes et al (1999) discuss extension of the model involving rationing of foreign credit, change in the domestic relative price of traded goods, and short-run rigidities in the domestic wages and prices. In the case of Ethiopia important extensions like Terms of Trade, trade policy and foreign reserve can be made. Incorporating all the fundamentals and short-run macro-economic policy variables, the model for the real exchange rate that is used for estimation can be formulated as:

$$LogRER_t = \beta_0 + \beta_1 \log(TOT)_t + \beta_2 \log(AID)_t + \beta_3 \log(GCN)_t + \beta_4 \log(CPS)_t +$$

$$\beta_5 \log(GRGDP)_t + \beta_6 \log(INVGDP) + \lambda \log(CBR)_t + \alpha(\log NER_t - \log NER_{t-1}) + U_t \quad \textbf{(4)}$$

NER stands for nominal devaluation and U_t for the error term.

Where

$RER*_t$	=	The equilibrium real exchange rate
TOT	=	External terms of trade
AID	=	External aid inflows (defined as real net ODA to Ethiopia)
GCN	=	Government consumption of non-tradable (measured by share of government consumption in GDP)
CPS	=	Commercial policy stance (measures the level of openness)
$GRGDP$	=	The growth rate of real Gross Domestic product (as a proxy for technological progress)
$INVGDP$	=	Investment to GDP ratio.

The expected theoretical impacts of the respective fundamentals are as follows:

TOT (?) - Its impact on the RER depends on the relative strengths of the direct income effect operating through the demand for non-tradables and the indirect substitution effects that operates through the supply of non-tradables. If the income effect associated with a deterioration is stronger than the Substitution effect, a depreciation of the RER will occur. In Elbadawi and Soto's (1997) study of seven developing countries, in three cases, an improvement in the term of trade appreciated

the real exchange rate, while in four cases, an improvement in the terms of trade depreciated the real exchange rate.

AID (-) - By increasing real incomes and consequently the demand for both traded and non-traded goods, it tends to cause the RER to appreciate. In his study of twelve developing countries, Edwards (1989) found that an increase in capital inflows appreciated the real exchange rate, as expected.

GCN (?) - Increases in government expenditure on non-tradable appreciates the RER, while those on tradable causes the RER to depreciate. Edwards (1989) found that an increase in government consumption appreciated the real exchange rate in four of the equations he estimated for a group of twelve developing countries, while in the other two equations, an increase in government consumption depreciated the real exchange rate.

CPS (+) - Decreases in the parallel (or black) market premium tend towards RER depreciation. In their study of Cote d'Ivoire and Burkina Faso, Baffes et al (1999) found results consistent with the theory; reforms that are aimed at liberalizing trade are consistent with a depreciated real exchange rate.

$GRGDP$ (?) - Technological progress appreciates the RER if gains emanating from productivity enhancement in the tradable Sector override those in the non-tradable sector. Edwards (1989) found that an increase in technological progress depreciated the real exchange rate in all his regressions. Aron et al (1997), on the other hand, found that an increase in technological progress appreciated South Africa's real exchange rate.

CBR (?) - Central Bank reserve intervention indicates the capacity of the Bank to defend the currency (Aron et al, 1997). An increase in reserve has the effect of appreciating the real exchange rate, while a decrease in reserves depreciates the real exchange rate. In their study of the determinants of the real exchange rate for South Africa, Aron et al (1997) found results consistent with the theory; an increase in reserves appreciated the real exchange rate.

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NER_t (+)   - Nominal devaluation tends to depreciate the RER.

$INVGDP$ (?)   - Its impact on the real exchange rate depends on whether an increase in investment changes the composition of spending on traded and non-traded goods. If an increase in the share of investment in GDP changes the composition of spending towards traded goods, it will lead to a depreciation in the real exchange rate (Baffes et al ; Edwards, 1989). On the other hand, a change towards non-traded goods appreciates the real exchange rate. For example, Baffes et al (1999) found that an increase in the share of investment in GDP depreciated the real exchange rate in Cote d'Ivoire. Edwards (1989) also found that increases in the share of investment in GDP resulted in depreciation in the real exchange rate in his study of twelve developing countries.

Following the definition of the real exchange rate, a negative sign (i.e., -) represents an appreciation of the real exchange rate.

In estimating the relationship between export performance and real exchange rate, an expanded export performance model adopted from Vos (1993) is used. In this model, growth of real exports (EXP) is assumed to be a function of (change in) relative prices (i.e., RER), income or rate of output growth of the trading partners (YTP), real exchange misalignment (REMIS), and external aid inflows (AID). Thus export model to be estimated is:

$$LogEXP = f[LogRER, LogYTP, REMIS, LogAID] \qquad \text{(5)}$$

The expected theoretical impacts are:

RER (+)   - Increases in the real exchange rate are expected to result in exports expansion.

YTP (+)   - Output growth of trading partners is envisaged to have a positive effect on Ethiopia's exports.

$REMIS$ (-) - Real exchange rate misalignment, measured by the deviation of the actual real exchange rate from its long-run equilibrium level, has a disincentive effect on exports and is thus likely to reduce export growth.

AID (?) - A good or bad aid dispersement policy (proxied by real net ODA to Ethiopia) tends to elicit positive or negative response from the export sector.

The export model (Equation 5) shows a linkage with the real exchange rate model through the real exchange rate and aid variables. In addition to the RER effect in the export model, the aid variable permits the analysis of foreign aid on exports. Thus we have the indirect effect of aid on exports through the RER and the direct linear effect of aid.

3.2   Estimation of the model

In estimating the empirical relationship between the real exchange rate and external aid inflows, on the one hand, and the aid variable and export performance model, on the other, the study employed three-stage least square methods. The sources of the data were National Bank of Ethiopia (NBE), IFS-CDROM and OECD website. The data used are annual, covering the period 1970 to 2003. Given the fact that a substantial amount of government consumption contains foreign aid and that there is no disaggregated data for the government consumption of non-tradable, GCN is excluded from the empirical estimation. Similarly, since technological progress can be captured by investment to GDP ratio (see Jing Xu, 2003) and our economy is mainly agrarian, GRGDP has been also excluded from the empirical model.

The results of the three-stage least square estimation for the real exchange rate is provided in equation six below. Figures in parenthesis under the equation represent t-values.

$$LogRER = 6.265 - 0.157 * \log(TOT) - 0.437 * \log(AID) + 0.918 \log(CPS) -$$

$(t\text{-value})$ (6.19)   (0.89)   (-3.49)   (5.22)

$$0.366 \log(INVGDP) + 0.181 \log(CBR) + 0.734 \log(NER) \qquad \textbf{(6)}$$

    (-1.62)   (3.37)   (1.45)

Adjusted R^2 = 0.66
DW statistic = 1.48

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As one can see from the results, taken together, the fundamentals explain 66% of the variations in the real exchange rate. The positive parameters on commercial policy stance and central Bank reserve imply a tendency towards real exchange rate depreciation. However, aid variables exhibit negative coefficient and, therefore, tend to appreciate the real exchange rate. Variables found to be insignificant are: terms of trade, investment to GDP ratio and nominal exchange rate. Generally all significant variables, that is, commercial policy stance, central bank reserve and aid captured in the estimation bear the expected theoretical signs.

The major interest of this study is the impact of external aid inflows on the real exchange rate in Ethiopia. Consistent with the conventional "Dutch disease" effect of aid on the real exchange rate as postulated in theoretical real exchange rate model, Ethiopia's experience exhibits a negative impact on the real exchange rate. In other words, aid inflows lead to real exchange rate appreciations and hence the existence of Dutch disease problem of aid in Ethiopia. The appreciation impact of aid on the real exchange rate can be explained by the fact that aid inflows instead of being directly invested in the tradable sectors of agriculture and industry, is likely to be invested in the non-tradable service sectors like public administration and defense, transport and construction and recurrent expenditures in general. Hence, the spending effect of aid inflows to the Ethiopian economy is likely to cause price increases in this sector that will invariably spill over to the other sectors as well. It is not surprising that the government is grappling with inflation. With the service sector being low on the extent of tradability, such inflationary tendencies have had a potential appreciation effect on the real exchange rate.

The results of the three-stage list square estimation on export performance model, as indicated in the equation seven below, revels the following. All figures in parenthesis under the equation represent t-values and probabilities respectively.

$$LogEXP = 1.739 + 0.531\log(RER) + 0.684\log(YTP) - 1.021\log(REMIS) + 0.225\log(AID) \textbf{ (7)}$$

(t-value)   (1.12)   (1.98)   (3.99)   (-4.74)   (1.16)

Adjusted R^2 = 0.89
DW statistic = 1.50

Altogether, 89% of the export performance model is explained by the explanatory variables. As expected, increases in output or income of Ethiopia's trading partners positively affected the performance of exports. Changes in the real exchange rate variable also bear the expected positive sign. Generally, depreciations in the real exchange rate positively affect export performance. The negative coefficient on the real exchange rate misalignment term highlights the adverse effect it has on export performance. For the policy environment proxy (i.e., aid), an insignificant relationship is seen to exist. This suggests that production subsidies to firms in the tradable sector, or simply export subsidies are required. The government could consider export promotion in the form of both price and non-price incentives. Alternatively, the government could try interest subsidies, that is, the introduction of a subsidy to banks to make it possible for them to charge lower interest rates for exporting firms. For this to be effective, however, donors should delegate more responsibility to the Ethiopian government, while at the same time creating an incentive structure for good performance. This would include among other things a shift towards ex post conditionality and aid allocation according to performance.

4 Conclusion and policy implications

The Ethiopian economy has been the recipient of substantial aid inflows for its development activities, and these inflows have been increased in recent years. Given donor fatigue and the growing competition for aid funds among less developed countries, any current curtailment of these inflows could have adverse effects on the Ethiopian economy. One implication for macro-economic management is that rather than using aid for current consumption it is vital to use it in infrastructure developments like education, health services, road networks in the peripheral areas etc. In a situation with poor administrative capacity and a large debt burden it would also make sense to shift aid resources to debt service and Balance of payments (or budget) support. This will make it possible for the Ethiopian government to use more of its own resources for development, at the same time as reduced debt should stimulate private investment. This will further pave the way for curtailment of aid dependence in the future. Global trends show that there is a tendency towards reduced aid flows from the donor community. For developing economies like Ethiopia, this trend has serious implications for the country's development activities. In order to prevent the economy against future losses, in the form of debt servicing for instance, it is

appropriate to adopt strategies for reducing aid intensity and hence dependence by continuously improving the institutional mechanisms of aid delivery. This requires effective civil service reform, transparency, democratization and good governance.

The paper tried to develop an empirical model for the Dutch disease effect of foreign aid on the Ethiopian economy. The analysis emerges from the discussion of the 'spending effect' within a classic Dutch disease framework. By employing the three-stage estimation techniques, the study concludes that aid inflows lead to real exchange rate appreciation in the case of Ethiopia and hence the loss of export competitiveness in the international market. This calls for a sound policy environment so as to elicit good macro-economic performance. Policy management thus needs to focus on ensuring the prevalence of sound macro-economic fundamentals, among others. Ensuring of a sound macro-economic management is a pre condition for aid eligibility in the face of donors. This implies that with a good policy environment, external aid could be an effective investment in the Ethiopian economy and could spur the realization of the country's poverty reduction strategy.

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ANNEX: Estimated Result

System: FINALSYSTEM
Estimation Method: Iterative Three-Stage Least Squares
Date: 05/13/05   Time: 17:19
Sample: 1970 2001
Included observations: 32
Total system (unbalanced) observations 63
Instruments: CBR INVGDP TOT ODA YTP CPS REMIS NEER C
Convergence achieved after: 6 weight matricies, 7 total coeff. itertions

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.262044	1.010992	6.193959	0.0000
C(2)	0.918235	0.175861	5.221382	0.0000
C(4)	-0.437671	0.125174	-3.496511	0.0010
C(6)	0.734067	0.504283	1.455666	0.1516
C(7)	0.181899	0.053918	3.373645	0.0014
C(3)	-0.157174	0.175684	-0.894644	0.3752
C(13)	-0.366198	0.225652	-1.622841	0.1108
C(8)	1.739559	1.552079	1.120793	0.2676
C(9)	0.225960	0.193693	1.166590	0.2488
C(10)	0.531618	0.268414	1.980587	0.0530
C(11)	0.684035	0.171202	3.995479	0.0002
C(12)	-1.020597	0.215283	-4.740727	0.0000

Determinant residual covariance	0.002023		

Equation: LOG(REER) = C(1) +C(2)*LOG(CPS) + C(4)*LOG(ODA) +
    C(6)*(LOG(NEER)-LOG(NEER(-1))) + C(7)*LOG(CBR)+C(3)
    *LOG(TOT)+C(13)*LOG(INVGDP)
Observations: 31

R-squared	0.734607	Mean dependent var	4.419524
Adjusted R-squared	0.668258	S.D. dependent var	0.368057
S.E. of regression	0.211990	Sum squared resid	1.078553
Durbin-Watson stat	1.487043		

Equation: LOG(REP) = C(8) + C(9)*LOG(ODA) + C(10)*LOG(REER) +
    C(11)*LOG(YTP) +C(12)*LOG(REMIS)
Observations: 32

R-squared	0.910814	Mean dependent var	7.361908
Adjusted R-squared	0.897602	S.D. dependent var	0.821014
S.E. of regression	0.262722	Sum squared resid	1.863619
Durbin-Watson stat	1.502982		