

THE ROLE OF EDUCATION IN THE ECONOMIC DEVELOPMENT

(ETHIOPIA CASE)

BY

Berhane, Melles

THESIS

Submitted to

School of Public Policy and Global Management, KDI

In partial fulfillment of the requirements

For the degree of

MASTER OF GROWTH AND DEVELOPMENT STUDIES

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ABSTRACT

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To assess the condition of education and its role on the economy, I followed causal analysis to see on proximate and ultimate impacts of education on the economy. I used descriptive analysis using statistical and econometric facts to see the disparity in enrollment among regions, sexes and the overall returns to investment in education.

In the analysis a number of problems were observed in the overall development of the education process. Enrollment rate is too low to expect a significant positive impact on the economy. The disparities among regions and sexes are very acute. Despite these lagged developments, some progress in the enrollment ratios, regional disparities and participation of female students were observed in recent years. On other hand, quality and efficiency of the educational process were highly affected in the past two decades.

The effect of education on the economic development was found to be less sound, as it was constrained with a number of problems. In spite of this, the return to

investment in primary education is far better than to secondary education and the social return decreases as the level increases. This has revealed the effect of subsidization.

This overall has confirmed the well-established empirical regularities on human capital, that is, the social return to education is inversely related to the level of education.

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ABBREVIATIONS

BIRR = Ethiopian Currency

EMIS = Education Management Information Systems

G.G. = Gender Gap

G.P.I = Gender Parity index

PHRD = Policy and Human Resource Development Project

CSA = Central Statistics Authority

MOE = Ministry of Education

MEDAC = Ministry of Economic Development and Cooperation

SNNP = South Nation Nationality People

Chapter I

Introduction

The history of economic growth and the expansion of education are highly interconnected. For a country to have a sustained economic growth necessitates a strong development in education. It is recognized that the importance of education for developing human resources, which is critical for economic growth and poverty reduction.

Economists have long recognized the fundamental role played by education in achieving economic growth, but it is not clear why in many low-income countries such as Costa Rica and the Philippines high levels of education has not brought about high rates of economic growth. One important hypothesis with regard to economic growth and education, suggested by R.Nelson, E.Phelps and T.W. Schultz is that the return of education is highly responsive to growth. Economic growth based on technological change increases the returns to education. Thus, in a non-conducive economic environment, the return to education would be low and in high growth environment the return to education would be high. (Schultz, 1988,PP.577-82, Nelson and Phelps, 1966,PP.66-75, quoted by Liu 1998,P.2)

According to the argument of many economists it is the human resources of a nation, not its physical capital or its natural resources that determine the character and pace of its economic and social development. In the process of economic development, capital and natural resources are the passive factors of production, whereas, human beings are the active agents who accumulate, exploit natural resources, build social, economic and political organizations and carry forward the national development. Here the principal institutional mechanisms for developing human skills and knowledge are the formal educational system. That is why many developing countries are now focusing on the rapid quantitative expansion of educational opportunities.

The importance of investing in human capital, especially in education is highly recognized at global level. To this end, many countries invest huge capital for school expansion. This determination emerges from the understanding that investing in people's education can bring a quantitative and qualitative change in the individual and the households in general by promoting productivity, investment and earning. The effect of human resource development on rapid economic growth is evident from the experience of newly emerging East Asian countries.

The expansion of education in Ethiopia has long been viewed as an important means for changing the socio-economic condition of the people. Since long time

education was seen as a panacea for bringing cultural transformation in the society. However, the enrollment has increased at lower rate for the last three decades. Since 1974, the participation rate has shown an improvement to a certain degree. Now this spiral progress in school enrollment had enabled to produce a total of 6,223,961 students at both primary and secondary levels and 52,305 students at higher institutions. The pouring out a number of students to the labor market could be an encouraging performance. Despite this, The rapid expansion of education has resulted in high pupil-teacher ratios, shortage of teachers with specialized training, overcrowding of schools and scarcity of educational materials and poor educational management. This in turn has affected the overall quality of education and its efficiencies.

It is a promising step to see education as a fuel in the growing process of the economy. Schooling has expanded dramatically during the last six years. This is increasing the skills of the labor force, which form an important part of the nation's wealth. In the history of Ethiopian education, especially during the previous regime, as in many African countries, education has been thought of simply in terms of the amount of schooling that an individual has attained, but individuals with the same years of schooling can have widely differing skills and cognitive abilities. The important thing is to relate the expansion of schooling to quality difference in the knowledge and

abilities of individuals. This lack of concern in achieving quality is highly remarkable in the Ethiopian case. Another concern in the country is the unit cost of education, which is high as in many developing countries. Teachers' salary constitutes on the average more than 85 percent of the education recurrent budget for education per annum. The role of private investment in the education sector is very limited. Many fundamental constraints are restricting the direct involvement of private sector. Thus, any improvement in the constraints of non-government schools and in efficient utilization of teachers would automatically lead to the efficient utilization of the education system.

During the last few years, certain progress in the field of access was observed, even though, it is highly biased against females with large regional disparities. Generally speaking, there are many highly interrelated problems in terms of accessibility, equity and quality in education of Ethiopia. This in turn has affected the overall effect of education in the economic process of the country.

The paper examines the overall aspects of the Ethiopian education in line with access, equity and quality and the role of the educational process on the economy of the country. Thus, the major objectives will focus on three fundamentals. ¶To assess the educational situations in terms of certain parameters, that is, accessibility, equity,

quality and efficiency; Ⅱ to observe the role of educational developments on the economy; and Ⅲ to suggest some policy measures to overcome the complex problems facing education.

This study uses secondary information from various sources to assess the situation of education and its congruity with the economy. The specific analysis of the paper largely relies on information collected from Ministry of Education, Ministry of Economic Development and Cooperation and Central Statistics Authority of Ethiopia and other publications such as those of the World Bank and documents on Korean Economy.

The organization of the paper is as follows. Chapter II will discuss provides a discussion of the theoretical background on the education and economic development. Chapter III will discuss some aspects of the background of the education in Ethiopian, especially under the New Educational Policy. In chapter IV, educational parameters such as access, equity and quality with respect to educational development of Ethiopia will b considered. Here the magnitude of access, the problems with equity in relation to the regions and the sexes and the constraints for quality and efficiency will be addressed. In chapter V, the behavioral congruity of school expansion and economic development in the country and the return of education investment on the economy is

observed. Chapter VI draws together the main conclusions of the analysis and discusses some policy implications of the observed problems.

Chapter II

Literature Review on the Role of Education

2.1 Overview on the dynamics of human

Capital development

Our world consists of a set of countries, whose economic vary significantly. At one extreme very rich and at other, extreme poor, while many countries fall in between. What makes such countries to behave in such pattern of development? Is the secret associated with the accumulation of capital only? Differences on the rates of investment in human capital also causes for further income distribution to occur. A policy that leads to a permanent increase in the time individuals spend obtaining skills generates a permanent increase in the growth of output per work.

The human capital theory, which originated in the works of Schultz Mincer and Becker, regards education as investment because individuals compare the direct and

opportunity costs of education with its future benefits, The investment continues up to the level where marginal benefits make the further investment worthwhile. R.T Michael emphasizes the nonpecuniary benefits of education, which are ignored in the human incentive to invest in human capital is one theoretical explanation for positive steady-state growth (Brist, 1999, P.1). Recent measurements of the returns to human capital investments in various lower-income nations have generally cast doubt on Lucas' assumption that they are non-diminishing (Ibid.,P.2)

Economic growth has been an intellectual challenge since the beginning of its analysis. Already in 1776, Adam Smith considered the skills of the labor force to be the main factor for economic development. He strongly believed that the production of human capital gives a considerable return in the form of greater lifetime income. At the same time he observed the link between growth and division of labor, but the relation was not clearly explained.

The role of human capital in modern treatment of growth theory and labor economics is decisive. According to Jacob Mincer (1995) view" human capital is

implicated in the process of growth not merely as a cause but also as an effect of economic growth and the growth." This reciprocal relation between economic growth and the growth of human capital is an important element to sustained economic growth (P.29). The growth of human capital has been very fundamental, say from low levels of schooling and a great deal of illiteracy to a large majority of high school graduates has become a unique manifestation for its development in many developed countries. The un-interrupted development of human capital is an integral part of much other profound social development in this time.

The most important input in the process of advancing science and technology is human capital (the creative power of human beings). This is mostly explained by the degree of devotion to the science and technological enterprise. Prominent nations have increased their intensity in research and development activities. In this regard, Japan's role as the most powerful technological challenger to nations that achieved industrialization is dramatically evident.

What is clear up to now is that the benefits of modern technology are to be diffused to members of the world's population who do not yet enjoy

them in many measure. There must be a massive expansion of science and engineering talents. As it is observed from some data, underdeveloped nations are severally handicapped relative to wealthier nations in achieving technology-based economic development. It is clear that the more prosperous a nation's citizens, the larger the number of science and engineering students. The table (table2.1) below gives a good perspective why the rapid and successful transition to high technology industrialization by South Korea and Taiwan becomes apparent while in Russia and Ukraine the potential for enormous waste.

Table1: Nations with Higher numbers of Science and Engineering Students per 100,000 populations

Country	S&E Students per 100,000 population
South Korea	1,701
Ukraine	1,639
Russia	1,619
Finland	1,421
Canada	1,104
Taiwan	1,013
Ireland	957
United States	933
Germany(united)	904
Chile	879
Israel	866
Spain	860
Unweighted average for 65 nations	555

Source: United Nations Economic and Social Council, World Education Report, 1995(Oxford 1995),

tables 1, 8 and 9 quoted by Scherer, 1999,P.109

Today's urgent issue is how the latent human capital could be cultivated. Many countries need at home to move onto the technological development paths that Japan, Korea Taiwan and other Asian nations have pursued in recent decades. It is also needed at home to evolve a strong institutional framework and adopt economic policies that permit sustainable development. If we are to mention the opportunities and in fact obligations for the leading industrializing countries is that to ensure the talents do not go to waste (Ibid.,P.110)

There are other supply-side constraints that hinder the power of augmentation of professional scientists and engineers. The underused of women in science and engineering, weakness in primary school education and duplication of scientific efforts are important aspects to be considered. One factor limiting young student's interest and ability to perform well in science and engineering is the weakness of science and mathematics education at pre-university school levels, and especially in elementary schools (Ibid.,P.116)

Diminishing returns could set in if duplication of research and development dominates. In developing countries, much of the augmented science and engineering work force should be occupied implementing technology already brought to an advanced level in the most progressive nations. Full diffusion of existing technology is not yet occurred and this needs working to implement it virtually at every significant production site. As it is explained, in more creative way, the chance of duplication is higher, but this is not necessarily bad. When uncertainty is substantial and the best approach to solving a scientific or technical problem cannot be identified, here Mao's admiration "let

one hundred flowers bloom,” is a wise strategy. (Ibid., P.117)

2.2 The impact of education on:

2.2.1 Economic Development

The importance of education is highly realized since long periods. Here it is good to remember Plato's Golden words "The direction in which education starts a man will determine his future life." Education is a fundamental instrument for economic development, especially primary and secondary education is critical for growth and reduction of poverty. Investment in education has a direct impact on the accumulation of human capital, which is key to sustained economic growth and increasing incomes. The economic meaning of education is basic, it enables the poor to increase his productivity by reducing fertility and improving health. As an instrument, accelerates the strength to fully participation in the economic affairs of the society. Besides this, institutional basis of civil society, national capacity building, good governance is some of the gains from educational activities. (World Bank, 1995,P.19)

Education is an asset that generates not only earnings but also a stream of non-market utilities involving learning and culture. Thus, education can be viewed as consumption and investment good (Ibid.). But education by itself will not generate growth, it only contributes to economic growth. Both human and physical capital generates sustained economic growth. Competitive markets for goods and factors of

production; macroeconomic stability; well-functioning labor markets and openness to international trade and flows of technology can be considered as necessary conditions for this growth to take place (Ibid., P.20). According to Schultz (1996), Denison (1967), and World Bank (1991d), economic growth is partly explained by stocks of labor and physical capital. Its main part generates from quality of labor force including increased education and better health, technological progress and economies of scale (World Bank, 1996). It is also documented in the new theories of economic growth as stated by Romer (1986), Azare and Darien (1996), Barrio (1991) that faster technological change increases the long run economic growth rate and this in turn increases faster as workers educated more. Therefore, the accumulation of human capital and specifically knowledge facilitates the development of new technologies and is a source of self-sustaining growth (Ibid., P.20)

As the experience of different countries shows the rates of return to educational levels is different and decreases as the educational level increases. If we see the table below (table 2), the rates of return for primary education is greatest followed by secondary and then higher education. Other observation from the rate of return in the different income group countries is that, Sub-Saharan African countries are with high rates of return, while developed countries are with the lowest rate in both private

and social returns. Another observation is that the private rate of return is greater than the social rate of return in all levels. This is because of public subsidization of education. (Todaro, 1997,P.384)

Table 2: The Rates of Returns to Investment in Education by Level of Education, Country, Type and Region (%)

Country	Social			Private		
	Primary	Secondary	Higher	Primary	Secondary	higher
Developing Sub-Saharan Africa	24	18	11	41	27	28
Asia	20	13	12	39	19	20
Latin America	18	13	12	26	17	20
Developed	14	10	9	22	12	12

Source: George Psacharopoulos, "Returns to investment in Education, "World Development 2(September 1993): table1. Taken from Todaro, 1997, P.385.

Economic growth has many dimensions. It doesn't occur in a vacuum. Many factors are responsible for its development. Education could be one of them. But according to Miller (1967), "not just any kind of education will promote economic growth, Education is a source of growth only if it is anti-traditional to the

extent that it liberates and stimulates as well as informs the individual and teaches him how and why to make demands upon himself."(Cohn and Geske, 1990,P.143)

A number of areas are listed by Pscharopoulos (1984) to reflect the impact of education on economic growth: Education has a direct effect on farmers productivity, enhance the adoption and efficient use of new inputs for example, schooling acts as a catalyst in behavioral change conducive to growth. Participation rate of women is influencing by schooling and likely to have lower fertility rates. The complementary nature of education to physical capital, its effects on migration decisions and the direct correlation between education and health and the close relationship between literacy and life expectancy are some of the manifestations of the impact (Ibid., PP.144-145).

The contribution of education to economic growth as it was estimated by Psacharopoulos (1984), show that a significant amount for a few countries such as Canada (25%), Ghana (22-23%), Nigeria (16%) and South Korea (15-9%) (P.152). From the above, we can understand that no matter how one measures the role of education in economic growth, it has been consistently substantial. (Cohn and Geske, 1990,PP.150-158) As we know from theory of human capital, variations in labor income are partly due to difference in labor quality. Thus, if the

question were reduction in income inequality, one way to achieve this would be to reduce inequality in the investments people make in human capital as in health, education, on the job-training, other vocational training, etc.

The recent literature on the development documented that education increases the productivity of the labor force, improves health, enhances the quality of life, betters the income distribution and advances the development potentials of the economy. The proposition that educational expansion promoted economic growth is unquestionable. Third world countries are deficient in their supply of skilled manpower. Without such manpower, development leadership in both the public and private sectors would be impossible. Various studies in the developed nations showed that it was not the growth of physical capital but rather of human capital that was the principal source of economic progress. Therefore, in the developing nations the need to build up the human, as well as physical capital infrastructure in order to provide indigenous leadership for the major tasks of development is crucial. (Todaro, 1997,PP.393-394)

2.2.2 Rural Development

Some of the developing countries development policy is based on Agricultural Development Led Industrialization, whose main objective is the gradual structural transformation of the economy from agricultural to industrial development, depending on the country's human, physical and natural resources. It is believed that this will create the condition for balanced development of rural and urban. Many factors, such as the number of people live and work, center for economic and social life for over 80 percent of the population make it necessary to focus economic and social activities such as education on rural development.

The perspectives on this rural development are broad and deep. It is viewed in the context of transformations of economic and social structures, institutions, relationship processes in rural areas. This balanced economic and social development is also viewed as a means of enhancing the equitable distribution, rapid generation of the benefits of higher levels of living and creation of more employment opportunities both on and off the farm. It further creates more equitable access to arable land, more equitable distribution of rural income, improvement in health, nutrition and housing and broadened access to both formal and nonformal education. Education has a direct effect in creating these outcomes and a change in attitude, that is a holistic view on these.

The impact of education falls on the rural life of the people, such as the provision of basic education, what most primary and secondary schools now seek to achieve and others such as family improvement education, which mainly focus on imparting knowledge, skills and attitude useful for improving the quality of family, life community improvement education, to strength local and national institutions and processes and occupational education to develop specific knowledge and skills needed for various economic activities. (Todaro, 1997,P.400)

Cities grow as result of labor migration from farms in response to the urban-rural wage differential rather than urban fertility alone. Urban fertility is lower than rural as the cost of raising children and other factors in urban is high. The profitability of education in urban areas is more realized when the size of the family is small and more resources per child are devoted to their education. On the other hand, technological changes in the agricultural sector increases the importance of education. Thus, both technology and migration contribute to the decline of the extended family. (Mincer, 1995,PP.30-31)

2.2.3 Demography

Demographic change is a long-term change. Populations with high birth and death rates due to the effect of education show a radical change in the population with low birth and death rates. Family size shows a basic change from large and extended households to a small nuclear unit. In this process, the overall effect will be that a change from low to high levels human capital per person and the occurrence of substitution of quality for quantity of children. Her although Malthus prediction that population growth would ultimately eliminate the income gains from productivity growth was wrong, his conclusion of economic growth due to increased in productivity would support a large population was correct. Modern economists reject Malthus notion and substitute for it a demand function for children that focus on both numbers and quality or their human capital. This helps to have a better understanding of the dynamics of the demographic transition in the history of developing world. Factors such as costs due to urban living, the growth of real wages in industry and services, the opportunity cost of time in raising children leads to decline in population growth and the final end of the demographic transition and these provide further incentives for investment in human capital.

(Mincer, 1995,PP.33-35)

2.2.4 Female labor Force

It has already documented that better educated women tend to be more strongly attached to the labor force than less educated. From an economic and social equality point of view, female education is important. According to certain empirical findings, the rate of return on women's education is higher than that on men's in most developing countries. As Psacharopoulos (1991) pointed out in his document, investment in the education of females often gives a higher rate of return than investment in the education of males (P.12). An increasing women's education has a great contribution to later marriage, lower fertility and greatly improved child health and nutrition, this in turn has a multiplier effect on the nation's human resources for many generations to come. (Todaro, 1997,P.386)

The reliance on educational expansion as a policy instrument for lowering fertility will be effective if it is sufficiently accompanied by employment opportunities for women. This make it educating women to be a critical ingredient in breaking the vicious multigenerational cycle of low educational performance, low income, high fertility and poor child health. Numerous studies have shown that women's education leads to lower infant mortality rates and also results not only in

healthier children but also in children possessing greater human capital as parents substitute child quality for child quantity (Ibid.)

In developing countries females receive less education than males, for example in 1992 survey, in 66 out of 108 countries women's enrollment in primary and secondary education was lower than that of men by at least 10 percentage points. This educational gender gap is the greatest in the poorest countries. In this survey, for all developing countries taken together, the female literacy rate was 29 percent lower than male literacy, and women's mean years of schooling were 45 percent lower than men's. Females' enrollment rates in primary, secondary and tertiary schools were 9%, 28%, and 49%, respectively than the corresponding male rate. (Todaro, 1997,P.385) Thus, despite the economic rate of return of women's education is high, the attention given to the subject is much lower than it should be.

2.3 Why a higher priority in education?

According to Webster's New World Dictionary (1962), education is "the process of training and developing the knowledge, skill, mind, character, etc. especially by formal schooling (P.461). Thus, educational activities involve the production and distribution of knowledge, mainly through an agent of institutions of learning. Most of the educational activities are run in the formal schooling, although churches, civics and business firms may also serve as additional institutions for such activities. (Cohn and Geske, 1990,P.2)

The potential benefits of school are large. Without education countries will become noticeably poorer. Investment in education has a high rate of return, and passing up such investment is costly. Better education could be an important determinant to sustain a high rate of economic growth for a country. It could be possible to achieve short-term productivity improvements by siphoning off resources from education to other kinds of investments, but without the great role of education, achieving long-run growth is unthinkable, nonetheless the case for education should not be overstated.

Education is but one of the many potentially worthwhile investments (Making Schools work, 1994, P.7). Our concern about schools should be very serious. Schools produce huge benefits for a country. For individuals, schooling increases earning power and helps them to have happiness and health. For a country as a whole, schools foster productivity and economic growth inform the norm of democracy and reduce the gaps of understanding and income difference among individuals. But the mounting of the costs of education over the benefits should not be overshadowing the focus to be made on education (Ibid., P. XVII).

The continuous change in economics and labor markets, the high rate of return in education and the synergies effect of investment in education and other human capital formation, especially nutrition, health and fertility make governments and peoples in almost all countries pay more attention to education (World Bank, 1995,P.91). It is an important for sustaining growth and reducing poverty and to stimulate investment and hence growth.

Investments in physical and human capital are complementary.

Without investment in education, investment in physical capital will give lower returns, and vice versa. These and other factors make education non-substitutable in the growth process. Increased understanding the need for such an emphasis has long been realized by countries in East Asia and is increasingly coming to be understood in other areas also. (Cohn and Geske, 1990,PP.92-93)

We learned from history that stronger states like England, Germany and the United States have come through a relevant education system in the transformation of civilization. The creation of a new and strong state with all round capabilities is by no means possible without education. It is difficult to consider the dynamics of the new civilization, without relating to the fact that education plays a role in producing the human resources, responsible for creating the new information, scientific development and culture that are the dynamics of the new civilization (World Bank, 1995,PP.12-13). The era of globalization and information technology pushes more countries to focus on education. In the period of information society, knowledge and information are the real motive of our social development and the best way to prepare the people of the world for future challenges. Thus, to meet the challenges posed by globalization, the demand for education is increasingly high. (The Presidential Commission On Education

Reform, 1997,PP.12-16) But, education as a gigantic industry in a country, the focus given to it should not be from one office only (ministry of education), but all respected offices should also be geared to such mission. This will result the intended outcome to be more fruitful and productive. Thus, through this education as the best instrument for development will fully be utilized.

2.4 The Role of Government in Education

There are a number of factors that justify government intervention in education, despite a number of arguments on the economic rationale for a government role on education. The debate over the appropriate role of government in education has become a continuum pattern.

Historically education was a private family responsibility but legal provisions were established for common schools since the seventeenth century. This is clearly recorded in the history of American education. During these periods, governments develop strong positions in their state constitutions with regard to the provision of free public education. To run such schools they used income generated from land grants, in which later became inadequate. Thus, local system of taxation would be needed to help finance the common schools.

According to many economists and others the fact that for more effective state protection of minors, due to external effects, basic role of education on democracy, to create equality of opportunity and other effects of education on common values and economic growth demanded

an active governmental role in education. But from a different philosophical perspective, there is basic inherent controversy on these issues. One of these can be seen with E.G. West (1970) arguments on government role.

In primary and secondary education as most of the participating children are below eighteen years of age, minors are not capable of making decisions for themselves and parents are also not sufficiently competent to make the right decision. Therefore, the state should intervene in the children's behalf and insure them an adequate upbringing. Here opponents argue by raising the question that if parents are not qualified to judge about their children's education could be possible to say parents are qualified to judge about many other aspects of child rearing? The main point here is that there are positive external effects associated with the acquiring of education. It is argued that a gap is created as a private market system in education result in less production than is socially needed. In such case, either in the form of subsidies or direct provision by government are necessary, despite the problems associated with externality is highly debatable.

Another important aspect of education comes from its positive effects on creating a standard and stable democracy through development various fields of the sciences, literature and arts that help in molding well-rounded citizen, who are ready for democratic practices. Its importance was also related to considering the condition of creating equality of opportunity with regard to both allocative and redistributive aspects of the benefits of education. But here also there are serious reservations whether private benefits of education are substantially different from social benefits. According to Musgrave's (1959), government's role is limited to two types of public wants, that is, social wants (social goods) such as national defense, flood control in which case the exclusion principle does not work. The other is the case of merit goods, where consumers may not express the appropriate desires, for example, they may not sufficiently appreciate education, classic music, good health care, in such cases government responsibility to override consumers tastes is sound and acceptable, but a strong argument by John Kenneth Galbraith (1958) was forwarded against this view. (Cohn and Geske, 1990,:25-32)

State government's role could be substantial in laying down the curriculum and procedures that schools must follow. But beyond that, it promotes and encourage local experimentation with developing new systems, help implementing new incentive systems, and encourage in production and dissemination information about new programs and their results. Role of governments can also be viewed as to ensure equality of opportunity, allocating additional resources to disadvantaged students and monitor the performance of local districts and intervene when local performance falls to unacceptably low levels. (Making Schools Work, 1994,: XXIV)

State governments could articulate for the best achievement and facilitate conditions for their achievement. Designing clear standard criteria for performance in the main academic subjects that are especially important. Attempts towards these by teachers, researchers and users should be motivated and rewarded. States have the responsibility to establish a system of schooling that is conducive to high performance. A state might also offer start-up grants for innovative programs, for example, helping disseminating new ideas, evaluate the

results of experiments of establish cooperative arrangements to create administrative simplicity. (Ibid., PP.: 170-174)

The task of developing and providing information on alternative educational approaches and exposing schools to systematic measurement and evaluation and providing parents with the information they need can be related to the responsibilities of governments. Thus, governments at different levels by continuous revolutionizing these activities, their part as co-agents in educational process could be more remarkable. (Ibid.,:146-148)

Thus, according to Psacharopoulos (1991) documented ideas certain essential impact of education as a key for our further analysis can be paraphrased. An educated population base provides the necessary infrastructure for industrial advances to take place. It has social values such as values captured by persons and others non-market effects, besides its monetary impact. Raises the benefits by lowering the transaction costs through increasing the number of a more literate population. Education increases the opportunity cost to women, who stay in the household and forced them to participate in the labor market. But also many educated females could also contribute to the overall efficiency in the economy by providing better sanitation conditions and more nutritional meals to the household. Education motivates the

worker for better employment opportunities and this will instigate a more efficient allocation of labor to the most productive uses.

Chapter III

Background of the Education in Ethiopia

Ethiopia has an area of about one million square kilometers with a population of approximately 60 million, of which more than 85 percent live in rural areas. It is the second most populous country in Sub-Saharan Africa. The country, with a long and rich history, is just about the poorest in the world, improvised by two of the biggest droughts in the country and by its recent ended civil war, which caused resources to be allocated away from social sectors.

According to the World Development Report 1997, Ethiopia is one of the poorest in the world with per capita income of US\$ 100. During the twenty years of civil war until 1991, GDP grew at an average of less than 2 percent per year, and per capita income declined to about one-half of the levels in the late 1970s. This has contributed to the poor social indicators that characterize the country today.

Ethiopia is pursuing a policy of gradual social and economic reform. The government is focusing at securing all round stability in the country and encourages

growth by replacing the previous centrally planned economy with a market-based economy. The new economic policy emphasizes the need to revitalize the economy and create a conducive environment for development. To attain these objectives, the role of government is limited to selected economic services, encourage private investment and promote significantly greater participation of the private sector in the economy, mobilize external resources, pursue appropriate macroeconomic and sectoral policies. Under these developments, the government reduced military and defense spending from 24 percent in 1989 to 7 percent in 1995 and increased social sector spending to 19 percent of the government budget in 1996 from 9.8 percent in 1989. Of this, education increased from 7 percent in 1989 to 13 percent in 1995, roads from 3 percent in 1989 to 14 in 1995. (World Bank Public Expenditure Review, 1996)

The education sector in Ethiopia is highly underdeveloped. The total enrollment at all levels of the educational system is about 5 million of which about 4.5 million are in primary education (1-8). The average participation rate at the primary level was about 37 percent, secondary and tertiary participation rates were 8.1 percent and 0.7 percent, respectively. (Ministry of Education, 1997) The disparities in participation rates between regions, urban, and rural and gender were

very wide. As it was documented, the internal efficiency of the education system was very low, especially at primary and secondary schools. The internal efficiency, measured by dropout and repetition rates of the education system on average was 50 percent.

Up to 1997, the school system was divided into primary (1-6grades), junior (7-8grades) and senior (9-12grades). There were national examinations at the end of each level. During this period, there were 11,676 primary, 370 secondary, 17 technical and vocational schools, 20health workers training centers, 14 teachers training Institutions, 13 colleges, 3Institutes and 2 Universities. Enrollment at the tertiary level was about 30 thousand.

The quality of education was very poor for the last two decades mainly due to disproportionate allocation of government funds, the scarcity of instructional materials, the overcrowding of schools and the declining quality and motivation of teachers. The curriculum was out of tune with no clear objective and was overall irrelevant to the objective situation of the country. The science, language and cultural components were very weak and inadequate to prepare the student for

meaningful and productive life in the community. Technical and vocational institutes were few and inefficient, higher education was also too inefficient. Regarding the system for recruitment, training, professional competency and working conditions of teachers was very unattractive.

Thus, up to 1992, the educational system in Ethiopia was with a number of problems, amongst these were: a narrow base, low participation and retention, extremely small vocational and tertiary training with poor quality and non-relevance of the curriculum, gross regional, urban and rural and gender inequalities, centralization and inefficiency in administration and low level of community participation.

Responding to the challenges that the education system was facing, the government had adopted an Education and Training Policy that aims to systematically and gradually alleviate the major problems. In the long-term it is aimed to at least achieve universal primary education and a standard quality of secondary, technical, tertiary education level and a variety to support the socio-economic goals of the country, institute that minimize the regional and gender inequalities. (Education Sector Strategy,

1994)

In the short and medium-term priority will be given to primary education and vocational and technical training. Attention will be given to make the curriculum more relevant, improving the quality and standard of education, widening the base to gradually increase the primary participation rate; making the educational system more efficient and participatory and training technical and professional manpower to meet the growing demand of the economy.

The structure of the education was reformulated according to the new objectives of education. Primary education provides 8 years of schooling (1-8), senior secondary 4 years (9-12), and tertiary system of colleges and universities giving training of 2 to 5 years. Students have to pass a competitive national examination to continue at secondary level and tertiary level. In secondary and tertiary education, emphasis will be on relieving overcrowding, raising standards and on training professionals such as science teachers, engineers and health workers.

As clearly stated in the new education and training policy, the role of teachers in enhancing the educational system and improving the

quality and standard of education in Ethiopia is very crucial. Accordingly, a revision of the training curriculum, upgrading the standard of in-service teachers and massive training of new teachers at different levels were planned as a package in the five year's education plan. In general, under this five years development plan, certain prospects have begun to be reflected. To enhance the efficiency of the education system its management restructured so that central government was restricted to overall follow-up and administration of higher education and regional governments were given the responsibilities of administrating primary education up to junior colleges.

The non-functioning vocational and technical training, which used to be given as part and parcel of the academic education in few schools of the country were replaced by new training schemes. The new vocational and technical training was designed in such away that students who drop out at the end of every cycle could get the necessary training before they leave the school system. Another reform made in the curriculum is to provide primary education in the regions with their mother's language, besides Amharic and English.

Another consideration to enhance quality in the education process is to increase the number of teachers and upgrade their academic and professional capabilities. According to this, 11 new institutions were opened, out of which, three institutions were at degree program, four in diploma and 4 with certificates. In addition to these, previous institutions of teacher training were made to expand and consolidated. Beginning from last year (1998/99), these institutions were planned on average to graduate 1000 in degree, 1700 in diploma and 6600 in certificate, overall 9300 teachers every year. These will fulfill the demand for certified teachers in the near future.

To keep equity between urban and rural more schools were built in rural areas, boarding schools were opened in some remote areas of the country and to those with nomadic mode of life some sort of mobile schools were arranged. The following table may reflect some of the progress in the last five years.

Table 3: Key Indicators, 1994 - 1999

Type	1994/95	1998/99

Certified teachers	94,000	126,000
Education budget	1.3billion Birr	2.4billion Birr
Coverage	26.7 %	45 %
Female student participation	20.4 %	35 %
Primary female students participation	26.2 %	45.8 %
Higher education Students	29,000	52,000
Enrollment Capacity of higher education	6,354	11,230

Source: Prime Ministry's office, Social Sector Department, 2000

Chapter IV

Challenges in the Education in Ethiopia

To introduce as a review certain important points on the conditions of the Ethiopian education the following points could be addressed based on the 1994 population and housing census. According to the 1994 census, more than three-quarters (77.4 percent) of the population of the country had no formal education. The gross enrollment ratio for the country irrespective of the level of school was very low. Up to 1994 census, there were only about 25 pupils per 100 population aged 7-12 enrolled in primary schools. This ratio was observed to be lower compared to the rates for some African countries such as Niger (29 percent) and the Sudan (50 percent) for 1990(UNESCO, 1993). About 22 pupils per 100 population aged 13-14 and about 11 pupils per 100 population aged 15-18 were enrolled in junior secondary and senior secondary schools, respectively. In order to be able to compare the rates with some African countries the gross enrollment ratio for secondary level was computed to

be 14.6 percent. This value was higher than the rates in Mali and Niger (each 7 percent), but lower than the rates in the Sudan (22 percent) for 1990(UNESCO, 1993).

Concerning the literacy status of the country, only some 23 percent of the country's population were literate. This rate is lower than values in some African countries consider to have low rate of literacy such as Mali (32percent), Chad (29.8percent) and the Sudan (27.1 percent) for 1990 (UNESCO, 1993). Among the urban dwellers of Ethiopia 68.6 percent were literate and the corresponding figure for the rural areas were 15.3 percent. This suggested that the literacy rate in Ethiopia is very low. The reason for the relatively significant number of the population in urban being literate could be associated with the number of schools and the influx of literate population from rural to urban areas searching for jobs and other opportunities. In the case of gender issue, more males were literate than females in both urban and rural areas. When we consider educational attainment of the literate by grade, of the total population the majority (51.7) had completed grades (1-6) in primary schools followed by 16.5 percent who had attended non-formal education. Those who have completed grades in junior secondary, senior secondary and above secondary education accounted for 13.1 percent, 16.0 percent, and 2.7 percent of the total literate population in the country, respectively. In rural areas the majority (59.1 percent) of the literate population had completed primary level grades followed by those who have had non-formal education (24.3 percent). A few had completed grades in junior secondary (6.6percent). In urban areas those who have completed primary grade accounted 42.5 percent, 17.5 percent junior secondary and 27.8 percent senior secondary education. Among

the literate population in urban areas those literate who have had above secondary level education comprised 5.5 percent, whereas, in rural areas it was not more than 0.5 percent. Besides this, 6.7 percent of the literate population in urban area were related to non-formal education (population and Housing Census, 1994).

4.1 Access

It is of a prime interest for a country like Ethiopia to assess the extent of access to education. It is important to know the number of places available for the new comers to the system. There is a need to know the magnitude of children coming to school for the first time. In this regard, there are two indicators to measure the extent of access to first level of education. They are the apparent intake rate and the net intake rate.

Other factors that are used to assess such condition are the overall gross enrollment ratios, the total number of primary schools and total primary enrolments. Considering all these indicators at different levels, the magnitude of the access and its implication can easily be visualized.

The tradition of formal approach to meeting demand for education through schooling and non-formal education has been on the developments and modernization agenda of subsequent governments for more than a century. The effort to meet the demand for modern schooling began with the expulsion of the Italians and the return of

Emperor Haile Sellassie in 1941. During this time student enrolment increased at an insignificant rate, from 19,000 in 1943 to 1,048,523 in 1974. The latter constituted 859,831 students in primary schools, 101,486 in junior secondary, 81296 in senior secondary and 5910 in the higher education institutions. The overall enrolment grew by about 55 fold between 1943 and 1974. (PHRD study, 1996,PP.45 – 46)

Ethiopia has started a series of economic and social reforms since 1992. New Policies have been put into practice to get the engine of social and economic transformations rolling. Since then, changes and reforms have been made in the education sector, of which the decentralization of the management of education, curriculum reform and changes in the education structure were some of the important factors.

Although improving quality is an important factor. The priority given at this time was to expand enrolment especially of girls. Female enrolment ratios were generally lower than those of males even in countries with high gross enrolment ratio. It was well documented that very low percentage of school aged children in Ethiopia participated in formal education when compared to other low-income African countries.

The primary gross enrolment ratio and most of the other educational indicators for Ethiopia are well behind those of most of the Sub-Saharan African countries. (See table4)

Table4: Comparative Overview of Selected Educational Indicators among few Sub-Saharan African Countries.

	Adult Illiteracy Rates Estimates(1995)			Gross Enrolment Ratios at First Level (1993)			Percentage of 1991 Cohort Reaching Grade 5	Number of 3 rd Level Students Per 100,000 Inhabita nts (1992)	Public Expenditure Education as % GNP (1993)
	MF	M	F	MF	M	F			
Djibouti	53.8	39.7	67.3	24	28	21	98	10	3.8
Ethiopia	64.5	54.5	74.7	18	20	15	22	54	6.4
Kenya	21.9	13.7	30.0	72	73	71	77	142	6.7
Sudan	53.9	42.3	65.4	387	43	34	94	266	-
Tanzani a	32.9	520.6	43.2	44	45	43	83	21	5.0
Uganda	38.2	26.3	49.8	44	-	-	55	112	2.0
Zaire	22.7	13.4	32.3	49	58	39	64	176	-
Zambia	21.8	14.4	28.7	-	-	-	-	183	2.6

Source: UNESCO (1995), Statistical Yearbook.

The selection criteria involved and its impact on urban and rural residents, regions, and social classes and on both sexes are basic issues in the educational process

to be considered. In dealing with these issues, the main tools of analysis used will be the enrolment ratio and some other educational indicators.

The effect of the selection process on the objectives of education and training is not free from its negative impact. To see this against some of the objectives as it was stated in the policy document “develop the physical and mental potential and the problem solving capacity of individuals by expanding education and in particular by providing basic education for all.” (Education and Training Policy, 1994, P.7) How close were these ideals we to attain in practice in the last few years?

Before looking into the developments of schooling in the last few years, it would be better to see the situations of the Ethiopian education at the global level. In the past decades the Ethiopian education system coverage was highly depressed. Comparatively it was lower than almost all other countries in the world, even from those low-income developing countries. The table below (table5) shows comparative data on enrolment ratios at primary, secondary and higher education levels for a selected group of low-and middle-income countries in 1965 and 1992. There were remarkable increases in enrolments at both the primary and

secondary levels, even in Ethiopia. But the enrolment in Ethiopia when compared with many other countries was very low. Besides this, the problem of drop out before completing a particular cycle was very severe.

Table5: Enrollment Ratios in Selected Developing Countries: Primary, Secondary, and Higher Education, 1965 and 1992

Country	Numbers Enrolled as a Percentage of Age Group					
	Primary		Secondary		Tertiary	
	1965	1992	1965	1992	1965	1992
Low-income Less Developed Countries						
Ethiopia	11	22	2	12	0	1
Bangladesh	49	77	13	19	1	4
Haiti	50	56	5	22	0	1
India	74	100	27	44	5	6
Sri Lanka	93	100	35	74	2	6
Tanzania	32	68	2	5	0	1
Middle-income less Developed Countries						
Colombia	84	100	17	55	3	15
Guatemala	50	79	8	28	2	9
Mexico	92	100	17	55	4	14
Philippines	100	100	41	74	19	28
South Korea	100	100	35	90	6	42
Thailand	78	97	14	33	2	19
Developing	100	100	61	93	21	51

Countries						
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Source: World Bank, World Development Report, 1992 and 1995(New York Oxford University Press, 1992,1995), annex, table 28, taken by Todaro, 1997,P.382.

Since the last seven years fundamental measures were taken to expand school enrolment at various levels. To its effect significant changes have occurred in enrolment, the number of schools and the number of teachers. The following table depicts the effect on the above factors comparatively under certain selected years.

Table6: Statistical Summary of Educational Growth between 1973/74, 1981/82 and 1999

		1973/74	1981/82	1999*	Average annual compound Growth Rate (1973/74-1981/82*	Average annual compound Growth Rate (1973/74 - 1999)*
Students	1 -6	859,800	2,374,362	5,702,233	11.9	7.9
	7 -8	101,800	248,754	-	10.4	-

	9 -12	82,300	238,425	521,728	12.6	7.7
Teachers	1 -6	18,600	37,844	112405	8.2	7.5
	7 -8	3200	5,452	-	6.1	-
	9 -12	3000	5,732	13078	7.5	6.1
Schools	1 -6	2760	6208	11051	9.4	5.7
	7 -8	420	813	-	7.6	-
	9 -12	120	194	386	5.5	4.8
Participati on Rate	1 -6	19.0 %	47.1 %	45.8 %		
	7 -8	8.1 %	16.4 %	-		
	9 -12	3.1 %	8.6 %	9.7 %		

Source: Educational Statistics, Ministry of education Planning Services, August 1981/82

and 1999

*Calculated

*Figures for 1999 are for 1-8 grades

In the table above (table 6), in the periods under consideration the average annual growth rates in the two periods were significant. When we compare the two periods, the growth rate in enrolment was higher between the year 1973/74 and 1981/82 than between 1973/74 and 1998/99. The statistical for 1981/82, however, could be very misleading, because the drop out rate was much higher than any time considered during this period.

Comparing these with the previous enrolments, may seem a boom in education. But when these are compared with total school age population in which 65.1 percent are un-enrolled and with enrolment in Sub-Saharan African countries, the progress observed was very insignificant. Besides to these, there were some costs associated with attendance, drop outs and repeaters. Entry to senior secondary schools and higher institutions was by means of a national examination; school examination by itself has been a big obstacle for enrollment expansion.

The selection criteria for continuation were:

- a. Successful completion of the previous level of schooling;
- b. Performance in standard national examinations;
- c. Willingness and ability to pay the costs of education (all opportunity costs), especially opportunity cost of education;
- d. Meeting the admission criteria set by the government, especially in higher education institutions.

The process of selection has become open to biases and inequity. Thus one would expect to the use of four selection devices just mentioned above to introduce biases, which would be evident when the relevant

enrolments were compared. Accordingly, data on comparative enrolment figures for the different regions, such as the proportion of repeaters at different levels from urban and rural, and the proportion of female enrolments was compiled. When enrolments in higher education and number of graduates were compared, regardless of other costs, the costs incurred as a result of the number of dropouts and repeaters were found to be very high. The average number of graduates in six years was not more than 19.5 percent of the enrolled students. (See tables 7a, 7b, 14,15,24,and 25)

In the last few years some progress has been made in reducing disparities between the educational opportunities for boys and girls. Tables 7a and 7b show women's share of various status at different levels in the system between 1973/74 and the last seven years. In all cases, although overall levels in the enrolment rate of both sexes were increased, female share in total enrolments at the three major levels in the system has not increased significantly, in fact, women's share of enrolments as a percent of total have shown a decreasing pattern in some years.

Thus, the condition on access to education in Ethiopia in general has the following patterns. The education at the bottom has a pyramid form, while at the top it is too restrictive. Selection process places additional restriction on enrolment expansion and has an impact on regional discrimination, which is negative. Nowadays few measures are being taken to correct this unnecessary discrimination by developing positive measures. Some of the changes in the enrolment ratios and the share of women's participation rates could be the result of this.

Between the years 1973/74 and 1990 enrolment at the primary, secondary and university levels had shown rapid growth. Despite this, the development of education in Ethiopia had gone through a lot of ups and downs due to the wrong government policies. This had a serious effect on the level of enrolment and quality of education. The result was declining enrolments and deteriorating quality at all levels, with the worst deterioration at the primary level in 1991/92. As a dividend of the peace and stability that has come to the country since 1992 enrolment has increased at all levels during the last seven years. The increase in primary levels has been remarkable. Comparing the

enrolments of 1998/99 with 1973/74, the increment was very significant in both levels, even when compared with 1990, enrolment it has increased by about 8.9 percent and 1.8 percent in primary and secondary levels, respectively. However, the developments in the school system were with significant limitations, one the enrolment ratios were biased towards male students and the quality of education was highly affected. In the female participation, even though, there was an increasing and decreasing pattern, the overall participation was encouraging. (See tables 7a and 7b)

Table7: Enrolment Trend by School Level and Gender in the last Seven Years Compared with 1973/74 and 1990/91

Table7a: Enrolment Trend by School Level and Gender

Level	1973/74		1980/81		1990/91		191/92	
	Total	%F	Total	%F	Total	%F	Total	%F
Primary	859831	31.9	2130716	34.9	2466464	38.8	1855894	40.8
Junior Sec.	101749	30.0	210721	25.6	404861	44.7	348803	47.8
Senior Sec.	81296	23.6	216876	35.5	453985	41.7	363686	45.4
Total	1042876	31.1	2558313	35.0	3325310	40.6	2568383	42.4

Source: Education Statistics, MOE, 1994 – 1999.

Table 7b: Enrolment Trend by School Level and Gender

Level	1993/94		1994/95		1995/96		1996/97		1997/98		1998/99	
	Total	%F										
Primary	242523	45.7	3098422	37.9	3787919	36.8	4468294	36.4	5090670	36.7	5702233	37.8
Junior Sec.*	54641	52.7	-	-	-	-	-	-	-	-	-	-
Senior Sec.	357195	45.2	370916	44.3	402753	43.2	426495	41.5	467669	40.9	521728	40.6
Total	304398	47.0	3469338	38.6	4190672	37.2	4894789	36.8	5558339	37.0	6223961	38.1

Source: Ibid.

* The junior secondary was incorporated into primary system

In the years under consideration, the contribution of private sector to the increase in enrolment was insignificant. The percentage share of non-government schools was at decreasing trend except in Addis Ababa. Private involvement in the expansion of education at various levels was

not being promoted. There were many reasons for this, according to the survey made in 1998, although to get an investment license is not a problem many investors who were ready to invest faced a number of problems. As is indicated in the table below, about 70 percent of the respondents gave land as the most important problem, while lack of capital and bureaucratic problems have been mentioned as the next important set of problems. Others like regulatory problems, low school fees, unprofitability of the sector, lack of confidence in investing, high income tax; high interest rates and high duty on imported educational materials were among the serious problems mentioned. (See table 8)

Table8: Major Constraints to Investment in the Education Sector

Problem	Very Serious	Serious	Less Serious	Not a Problem	Weighted Index
Bureaucratic Problems	42.1(16)*	15.8(6)	13.2(5)	28.9(11)	65
Regulatory Problems	12.5(5)	32.5(13)	20(8)	35(14)	49
Lack of Capital	42.5(17)	15(6)	15(6)	27.5(11)	69
Land Policy	64.3(27)	11.9(5)	9.5(4)	14.3(6)	95
Lack of Credit	30.8(12)	23.19)	7.7(3)	38.5(15)	57
High interest Rate	17.5(7)	22.5(9)	22.5(9)	37.5(15)	48
Lack of	7.7(3)	5.19(2)	10.3(4)	76.9(30)	17

Demand)			
Unprofitability of the sector	15.4(6)	15.4(6)	35.9(14)	33.3(13)	44
High duty on imported educational materials	21.6(8)	8.1(3)	10.8(4)	59.5(22)	34
Lack of foreign exchange	5.7(2)	5.7(2)	11.4(4)	77.1(27)	14
Low school fees	12.7(5)	25.6(10)	25.6(10)	35.9(14)	45
High income tax	16.2(6)	16.2(6)	18.9(7)	48.6(18)	37
Inadequate infrastructure	7.5(3)	22.5(9)	15.0(6)	55.0(22)	33
Lack of confidence in investment	12.5(5)	20(8)	17.5(7)	50(20)	38
Corruption	2.6(1)	23.7(9)	10.5(4)	63.2(24)	25
Lack of Qualified teachers	50(1)	-	-	-	3
Other constraints	-	50(1)	-	50(1)	2

Source: Strategy to encourage private investment education and training, 1998,P.38
Nos. of respondents who voiced for the problem

The condition for access can be observed from the apparent intake rate (the percentage of new entrants (irrespective of age) in grade one out of the total number of children of an official admission age (age seven in the Ethiopian case). For the years 1994/95 to 1998/99 the apparent intake rate has increased from 72.5 percent to 108.7 percent and from 39.5 to 76.6 percent for boys and girls respectively. The total intake has also grown from 56.3 percent to 92.9 percent for the period under consideration.

The apparent intake rate for girls has shown a steady increase from 1994/95 to 1998/99, while for boys it has shown an increasing trend in the beginning and decreased from 111.2 percent in 1997/98 to 108.7 percent in 1998/99. The gap between the male and female apparent intake rate has grown from 33 percent in 1994/95 to 47.5 percent in 1996/97. But this gap was reduced to 42.1 percent in 1997/98 and 32.1 percent in 1998/99. (See table9)

Table9: Apparent Intake Rate (%)

Year	Boys	Girls	Total
1994/95	72.5	39.5	56.3
1995/96	98.3	53.9	76.5

1996/9 7	110.9	63.4	87.5
1997/9 8	111.2	69.1	90.5
1998/9 9	108.7	76.6	92.9

Source: ministry of Education, 1999

Table10: Net Intake Rate (%)

Year	Boys	Girls	Total
1994/9 5	14.5	10.6	12.6
1995/9 6	19.3	14.3	16.9
1996/9 7	21.7	16.2	19.0
1997/9 8	24.1	18.5	21.4
1998/9 9	26.7	22.0	24.4

Source: ministry of Education, 1999

Note* 1994 is taken as a base year because it was the only year with complete and reliable data (most of my analysis considers this period).

When we consider the net intake rate, the annual increment was

very small and started from lower base. The highest annual increment was 4.8 percentage points for boys in 1995/96. The gender gap in net intake rate, although at a smaller rate, has been growing consistently up until 1997/ 98. It is clear enough that about 75 percent of seven years old children were out of school in 1998/99. Thus the major issues to be considered will be reaching these out of school children and narrowing the gender gap in intake rate. (See table 10)

As can be seen from the table below (table 11), the participation rate in six consecutive years increased to a large extent. Gross enrolment ratios in primary school (1-6) increased from 22.8 percent in 1993/94 to 45.8 percent in 1998/99, out of which, the participation rate for male increased from 31.9 percent to 55.9 percent in 1998/1999, while that of female increased from 17.9 percent to 35.3 percent. Although the growth in the gross enrolment ratio is encouraging still the gender gap remains big. The gender gap, which was 11.3 percent in 1994/95, has reached 20.8 percent in 1997/98. But this gap has shown an improvement in 1998/99 and reached 20.6 percent. In order to further reduce the gender gap immediate attention by all concerned bodies is required.

The change in the gross enrolment ratios at secondary level was less than 4 percent for both boys and girls. The total gross enrollment ratio has increased only by 3.1 percent in the period between 1994/95 and 1998/99. The gender gap, which was 1.8 percent in 1994/95, has grown to 3.3 percent in 1998/99.

Table11: Gross Enrollment Ratios by Level and Year (%)

Year	Primary (1 –8)			Senior Secondary		
	M	F	T	M	F	T
1993/94	*31.9(1-6)	17.9(1-6)	22.8(1-6)	7.6	6.9	7.2
	**12.9(7-8)	12.0(7-8)	12.4(7-8)			
1994/95	31.7	20.4	26.2	7.5	5.7	6.6
1995/96	36.6	22.7	30.1	9.3	9.0	8.1
1996/97	43.0	26.0	34.7	9.9	7.0	8.4
1997/98	52.0	31.2	41.8	10.3	7.4	8.9
1998/99	55.9	35.3	45.8	11.3	8.0	9.7

Source: Ministry of Education, 1999.

As we observe in table 11, gross enrolment ratios declined with the increased of the educational level, from 45.8 percent to 9.7 percent in senior secondary. This indicates that the majority of the students dropped out before they reach senior secondary school. Based on the 1998/99 data, the overall enrolment ratio for primary and senior secondary schools averaged only 34.9 percent, of which 42.5 percent boys and 27.0 percent girls, while the overall un-enrolled children is 65.1 percent, of this 57.5 percent were boys and 73 percent girls.

Net enrolment ratios provide an indication of the extent of overage enrolment due to late entrance to school and successive grade repetitions. As it was surveyed by PHRD study on the household demand for schooling (1996), this was a serious problem, especially for the Ethiopian rural household. An examination of net enrolment ratios revealed that for girls there were slightly less overage in primary and secondary enrolment (See table 12). At a national level during the year 1998/99, net enrolment ratios at primary remained 39.6 percent, out of which 47.0 percent for boys and 31.9 percent for girls. Compared this with gross enrolment ratios, net enrolment ratios were less by 8.9, 3.4 and 6.2 percentage points for boys, girls and for both sexes, respectively. The difference was a reflection that significant number of overage students attempt to compensate the education they had missed earlier in their lives. Overage in schooling

appears to be a more serious problem for boys than girls as evidenced by the larger difference between gross enrolment ratios and net enrolment ratios.

Table 12: Net Enrolment Ratio (1 –8) (percent)

Year	Boys	Girls	Total
1993/94	23.2*	14.2*	17.2*
	6.6**	6.9**	6.8**
1994/95	20.7	14.7	17.8
1995/96	28.0	18.6	23.4
1996/97	32.3	21.5	27.0
1997/98	43.4	28.0	35.8
1998/99	47.0	31.9	39.6

*Primary School (1 –6) and **Junior Secondary School (7-8)

Source: Ministry of Education (EMIS), 1993/94 and 1998/99

During the period 1992/93 to 1998/99, the annual average growth rate of enrolment for primary education was 17.2 percent, senior secondary education 6.2 percent and technical/vocational education 4.4 percent respectively. Similarly, the annual average growth rate for primary education teachers were 5.7 percent, senior secondary education teachers 2.7 percent and technical/vocational education teachers

8.4 percent respectively. While primary schools showed an annual average growth rate of 2.8 percent and senior secondary schools grew by 5.6 percent. During the period under consideration, the annual average growth rate of higher education was 22.1 percent and that of graduates was 13.2 percent. (See table13)

Table13: Statistical Summary, 1992/93 and 1998/99

Level	1992/93	1998/99	AAGR (%)
Enrolment			
1.Primary Education	2204697	5702233	17.2
2.Senior Secondary Education	363686	521728	6.2
3.Technical/Vocational	2589	3374	4.4
Teachers			
1.Primary Education	80539	112405	5.7
2.Senior Secondary Education	11174	13078	2.7
3.Technical/Vocational	338	548	8.4
Schools			
1.Primary Education	9219	11051	3.1
2.Senior Secondary Education	279	386	5.6
3.Technical/Vocational	17	17	-
Gross Enrolment Ratios			
1.Primary Education	20.3 %	45.8 %	
2.Senior Secondary Education	8.4 %	9.7 %	
Student-Section Ratio			
1.Primary Education	NA	63	
2.Senior Secondary	NA	71	
Pupil-Teacher Ratio			
1.Primary Education	27	63	
2.Senior Secondary Education	33	40	
3.Technical/Vocational	8	6	
Percentage of Female Students			
1.Primary Education	40.8	37.8	
2.Senior Secondary Education	45.4	40.6	

3. Technical/Vocational	18.1	21.5	
Percentage of female Teachers			
1. Primary Education	25.6	27.8	
2. Senior Secondary Education	9.0	8.6	
3. Technical/Vocational	NA	6.6	
Higher Education			
1. Enrolment	15790	52305	22.1
2. Graduates	4069	8555	13.2
3. Lecturers	1713	2228	4.5

Source: Education Statistics Annual Abstract (Ministry of Education), 1997/98 and 1998/99

AAGR = Average Annual Growth Rate

It is well documented that households' usually invest in their children's education as a result of that their benefits usually far exceed their costs. Despite this fact, households under invest in education. Here comes role of government to avoid under investments in education by supporting these investments in human capital.

The main determinants of households demand for schooling are households income, parents education background, family size, the price of schooling in terms of user fees, cost of the distance to school and expected returns from education. In relation to these determinants of the households' demand for schooling, the following realities were revealed in the 1996 survey analysis. According to the survey results, enrolment ratios were far better in urban center than in rural areas. As can be noted the

largest difference was between rural and urban areas rather than between female and male. Gender bias in favor of boys was apparent in nearly all school levels. The bias against girls in the rural areas came out very strongly, especially at primary school levels. Other conditions such as educational status of household heads, at national level, for instance, primary gross enrolment increased from 22 percent in the case of illiterate household heads to 79 percent for household heads with high school level of education and to 102 percent for household heads with tertiary education. (PHRD study, 1996)

Higher education is provided in six Universities and 18 colleges with a total enrolment of 52305(1998/99 data), which is very low even by the standards of least developed countries. However, the budget share was relatively high standing at about 14.7 percent of the annual budget to the sector. The participation rate is not more than 1 percent. The institutions of higher learning are generally overcrowded; underfunded and poorly resulting in a low quality of training and poor research capacity (See tables 14 and 15). Two important trends can be observed from the tables below. During the period under consideration, enrollments have increased significantly with a growing female participation. Similarly the number of graduates

has risen. These reflect to a certain extent the improving efficiency of higher education and the selection mechanisms in the system.

Table 14: Trend of Students Enrolled in institutions of higher Education by Program Level

Year	Program Level								%
	Diploma		Undergraduate Degree		Postgraduate		Total		
	BS	F	BS	F	BS	F	BS	F	% F
1985/86	6170	961	12008	1016	279	21	18457	1998	10.82
1986/87	6071	766	11530	934	324	29	17925	1729	9.64
1987/88	6254	891	10839	913	431	26	17524	1830	10.44
1988/89	6657	965	10547	873	503	31	17707	1869	10.55
1989/90	6713	1004	10327	845	573	37	17613	1886	10.7
1990/91	6837	1082	10401	820	657	51	17895	1953	10.91
1991/92	5262	781	9232	898	699	52	15193	1731	11.39
1992/93	6185	1213	8971	889	634	38	15790	2140	13.55
1993/94	15042	3971	13202	2259	756	55	45775	6285	13.7
1994/95	17295	4130	14649	2359	727	69	32671	6558	20.1
1995/96	18999	4414	15240	2204	788	64	35027	6682	19.1
1996/97	21982	5413	19360	3046	790	55	42132	8514	20.2
1997/98	21664	5123	23023	3519	867	60	54196	8702	16.1
1998/99	23745	5918	27696	3789	864	62	52305	9769	18.7

Source: Ministry of Education, 1998/1999

Table15: Trend of Graduates from Institutions of higher Education by Program Level

Year	Program Level								%
	Diploma		Undergraduate Degree		Postgraduate		Total		
	BS	F	BS	F	BS	F	BS	F	% F
1985/86	2421	NA	1914	NA	50	NA	4385	NA	NA
1986/87	2431	364	2166	166	73	NA	4670	NA	NA
1987/88	2191	203	2170	182	85	4	4446	389	8.75
1988/89	2326	273	2059	149	121	11	4506	433	9.6
1989/90	2181	289	1934	163	128	9	4243	461	10.86
1990/91	2354	250	1782	119	136	9	4272	378	8.8
1991/92	2076	302	1582	109	134	11	3792	422	11.1
1992/93	2144	222	1724	108	201	11	4069	341	8.38
1993/94	2165	394	1691	175	209	15	4065	584	14.4
1994/95	3332	615	1921	195	225	12	5478	822	15.0
1995/96	3607	688	5260	880	134	12	9001	1580	17.6
1996/97	4760	975	7199	1330	249	18	12208	2323	19.0
1997/98	5716	1273	8590	1629	301	23	14607	2925	20.2
1998/99	6053	1438	9130	1832	256	15	15439	3285	21.3

Source: Ministry of Education, 1998/1999

The educational availability to all school age students may not be a burning issue for many countries in the world, but in Ethiopia it is critical. Many citizens of the country who need education as a right and as potential productive elements are lacking this basic right. This situation has affected not only the individual but also the nation at large. Thus, this is a basic problem that needs much attention, and to be a priority in the economic agenda of the country. How was the already available educational opportunities were made in use efficiently and equitable at all levels and sections? These and other factors in the system that affect education will be dealt with in the next topic.

4.2. Equity

Equity in education has two principal aspects: ¶Everyone’s right to a basic education that is, to acquire the basic knowledge and skills necessary to function effectively in society. ¶The governments obligation to ensure that those student that are entitled to education are not denied it because they are poor, or female or are from disadvantaged minorities or from geographically remote regions, or have special educational needs. Beyond that, it means having fair and valid ways of determining potential students’ qualifications for entry. At the lowest and compulsory levels of education, equity simply means ensuring that schools are available to all.

Achieving equity requires both financial and administrative measures. Financial measures such as scholarships are important at all levels to enable the poor to acquire an education. Administrative measures can increase enrollment of the poor, females, linguistic minorities and student with special educational needs. Programs designed to demonstrate the importance of educating children aimed at parents could increase the demand for schooling among the poor.

The issue of equity may hold different dimensions of the educational benefits against the beneficiaries. In the Ethiopia case, according PHRD study, public

spending on education as a whole often favors the rich. Higher income level households have a higher proportion of children (8.1 %) benefiting from education than lower income level households (5.8%). Total spending is biased against the poor, although public spending on primary education favors the poor. The government heavily subsidizes secondary and higher education levels, which usually absorb disproportionately few students from the poor families. Higher education spending by the public sector was to a large extent inequitable because the subsidy per student was much higher than the lower levels and the higher education students come from disproportionately from richer families. (See table 16)

Table 16: Proportion of Different Income Group Benefiting from Education

Total Monthly Consumption Expenditure by Group	Percentage of Households Sending their children to schools	Average Education Expenditure/ Month (in Birr)
0 –5	5.8	4.58
51 –100	7.4	5.46
101 –200	7.9	11.12
201 +	8.1	31.65
Total	7.2	9.53

Note: Monthly expenditure is taken to represent monthly income

Source: PHRD study on Cost and Financing of Education, 1996, P.83

The question of equity between geographic regions, gender, urban and rural, etc. could also be addressed using the standard indicators such as gross enrolment ratio. If we consider the gross enrolment ratios in primary from 1994/95 to 1998/99 of the different regions of the country, we can observe much variation among the regions. According to the rates given in the table, although the participation rates of most of the regions was low, the two regions in the country, Afar and Ethiopian Somalia have the lowest participation rate. The participation rate in Somalia has declined from 11.6 percent to 8 percent between the two period's underconsideration.

The participation rate in primary (1 –8) in 1998/99 ranges from 7.1 percent in Afar to 90 percent in Harari. Except for Afar, Somalia, Amahara and Oromiya, the gross enrolment ratios of the regions were above the national average. The fact that more than 50 percent of the total population was found in the regions of Amhara and Oromiya pulled down the rate for other regions, whose rate stands well above 56 percent. That is why national gross enrolment ratio is 45.8 percent. Similarly, the gross enrolment ratios at secondary level exhibits similar pattern, that is the gross enrolment ratio ranged from 0.4 percent in Somalia to 48.1 in Addis Ababa. For most of the regions, the

gender gap is below 7 percent. However, the highest gender gap is recorded in Gambella (18.7%) and Harari (11.2%). (See tables 17b and 17c)

Table17a: Participation Rate by Level of Education and by Region 1973/74 and 1981/82

Region	Primary		Junior		Senior Secondary	
	1973/74	1981/82	1973/74	1981/82	1973/74	1981/82
Aressi	22.8	59.1	7.7	18.0	3.0	8.1
Bale	13.9	41.9	3.9	11.5	1.3	5.6
Eritrea**	27.8*	22.0	11.9*	11.6	5.5*	5.6
Gamuo Goffa	13.1	44.2	4.0	10.9	1.3	4.6
Gojjam	14.0	36.9	5.6	10.7	2.5	6.4
Gonder	12.5	26.1	5.0	9.7	2.3	6.6
Hararge	11.0	22.1	4.5	7.1	2.0	3.7
Illubabor	25.9	74.1	5.6	16.6	1.5	6.4
Kaffa	12.9	56.1	4.0	11.5	1.6	5.1
Shawa	20.4	57.8	8.0	19.0	2.8	8.9
Sidamo	13.6	66.1	5.7	18.1	1.7	6.8
Tigray	13.5	15.2	5.2	9.3	2.5	4.7
Wellega	30.0	86.2	7.5	25.5	2.2	10.8
Wello	11.7	31.1	5.1	11.2	2.0	5.7
Addis Ababa	59.7	95.0	45.3	78.8	25.6	55.7
Asseb Administration	-	24.0	-	10.3	-	6.5

Country Level	19.0	47.1	8.1	16.4	3.1	8.6
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*Includes Asseb Administration Participation Rate

Source: Educational Statistics, Ministry of Education Planning Service, 1973/74 and 1981/82

** Eritrea was part of Ethiopia until 19991

Table 17b: Primary (1 –8) Gross Enrollment Ratios by Region and Year

Region	194/95			1995/96			1996/97			1997/98			1998/99		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Tigray	49.0	38.0	43.7	49.3	40.3	45.0	48.6	41.3	45.1	61.7	50.2	56.1	63.0	53.8	58.4
Afar	10.0	6.8	8.4	10.0	6.8	8.4	10.0	6.8	8.4	10.0	6.8	8.4	7.4	6.5	7.1

Amhara	18.9	16.8	17.9	23.7	20.8	22.3	30.2	25.7	28.0	38.4	30.8	34.6	44.1	36.7	40.4
Oromiya	27.2	14.9	21.2	34.4	17.2	26.0	41.2	19.7	30.8	53.6	25.4	39.6	59.6	30.0	45.0
Somali	16.2	6.6	11.6	16.2	6.6	11.6	16.2	6.6	11.6	16.2	6.6	11.6	10.3	5.1	8.0
Benshangul	49.3	20.2	35.4	59.3	24.8	42.8	66.9	28.5	48.6	95.6	43.3	69.9	99.3	49.5	74.9
SNNP	39.5	17.4	28.8	52.3	23.4	38.4	60.0	27.7	44.4	75.5	35.2	55.7	75.6	37.7	56.8
Gambella	67.8	38.2	53.9	61.8	37.4	50.4	81.6	48.7	66.3	106.0	59.9	83.5	110.7	66.5	89.1
Harari	55.3	51.4	53.4	58.9	50.6	54.9	73.8	56.7	65.6	86.7	66.9	77.1	104.5	75.0	90.0
Addis Ababa	84.4	85.3	84.9	82.1	83.6	82.9	79.5	81.0	80.3	83.9	80.4	82.0	86.1	83.5	84.7
Dire Dawa	42.8	39.1	41.0	43.2	40.0	41.6	54.3	46.8	50.7	64.4	53.2	58.9	66.4	53.4	60.0
Total	31.7	20.4	26.2	36.6	22.7	30.1	43.0	26.0	34.7	52.0	31.2	41.8	55.9	35.3	45.8

Source: Education Statistics Annual Abstract, 1998/99, P.17

Table 17c: Secondary (9 –12) Gross Enrollment Ratios by Region and Year

Region	194/95			1995/96			1996/97			1997/98			1998/99		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Tigray	5.5	3.4	4.4	6.6	3.8	5.2	7.3	3.5	5.4	9.5	4.5	7.0	11.8	5.7	8.7
Afar	1.9	1.1	1.5	1.9	1.1	1.5	1.9	1.1	1.5	1.9	1.1	1.5	1.8	1.5	1.7
Amhara	5.5	4.8	5.2	6.3	5.4	5.9	6.6	5.3	6.0	7.4	6.0	6.7	7.9	6.8	7.4
Oromiya	6.5	4.7	5.6	7.8	5.4	6.6	8.3	5.2	6.7	9.4	5.5	7.5	10.2	6.0	8.1
Somalia	0.8	0.2	0.5	0.8	0.2	0.5	0.8	0.2	0.5	0.8	0.2	0.5	0.5	0.2	0.4
Benshan guil	3.1	1.7	2.4	5.0	2.6	3.8	6.4	3.2	4.8	8.5	3.9	6.2	10.1	5.0	7.6
SNNP	6.6	3.5	5.1	8.8	4.2	6.5	10.4	4.7	7.6	10.5	4.7	7.6	11.9	5.3	8.6
Gambella	8.2	2.3	5.3	11.2	2.8	7.0	15.5	4.1	9.8	19.3	4.8	12.4	24.1	5.4	14.9
Harari	35.9	27.6	31.6	36.8	30.7	33.6	39.7	32.2	35.8	45.4	36.9	41.2	48.7	37.5	43.0
Addis Ababa	45.6	37.2	40.8	48.0	39.8	43.4	46.7	38.4	42.0	49.3	42.2	45.4	53.0	46.1	48.1
Dire Dawa	21.6	17.2	19.4	21.5	18.3	19.9	22.0	17.5	19.7	25.2	18.3	21.6	26.7	19.6	23.0
Total	7.5	5.7	6.6	9.3	7.0	8.1	9.9	7.0	8.4	10.3	7.4	8.9	11.3	8.0	9.7

Source: Education Statistics Annual Abstract, 1998/99, P.17

Enrollment ratios in tables 17a and table 17b and 17c are not comparable, because the regional organization under the two periods is different. But taking total enrollment ratios under the two periods (say between 1981/82 and 1998/99) at primary level, when compared (47.1 % and 45.8 %) the difference was not significant. While the number of schools and teachers and other indicators of quality and efficiency in 1998/99 were far better than in 1981/82. Thus, the increasing enrollment ratios in 1998/99 were at the cost of quality and efficiency of the education system. During this period there was a big gap between access, equity and quality of the education process among the regions say Tigray and Addis Ababa. The enrollment ratios starting from 1994/95 at the two levels has increased in parallel with the expansion of schools, teachers and with the sequential squeezing of student text book ratio and bringing pupil-teacher ratios and pupil-section ratio to a national norm. On the other hand, institutions for more certified teachers have expanded to train more teachers. Although the problems of quality and efficiency are still high, when compared with the previous years, it has decreased to a meaningful level.

Another area of variation could also be assessed using the gender parity index (GPI). In a situation of perfect equality between boys and girls, the value of GPI is

one. On the other hand, in a situation of total inequality between boys and girls, the value of GPI is zero. But in practice the value of GPI falls between 0 and 1. As it is indicated in the table below, Addis Ababa, the capital city has a GPI 0.96, while in Somalia, Benshangul Gumuz, SNNP and Oromiya have wider gender gaps. Thus, the wider gap in student enrolment among regions depends on a multitude of factors, with accessibility in the respective regions being a major problem. (See table 18)

Table 18: Enrollment Ratio, gender gap and gender parity index by Level and region (1998/99)

Region	Primary (1 –8)					Secondary (9 –12)				
	M	F	T	G.G	G.P.I	M	F	T	G.G	G.P.I
Tigray	63.0	53.8	58.4	9.2	0.9	11.8	5.7	8.7	6.1	0.5
Afar	7.4	6.5	7.1	0.9	0.9	1.8	1.5	1.7	0.3	0.8
Amhara	44.1	36.7	40.4	7.4	0.8	7.9	6.8	7.4	1.1	0.9
Oromiy a	59.6	30.0	45.0	29.6	0.5	10.2	6.0	8.1	4.2	0.6
Somalia	10.3	5.1	8.0	5.2	0.5	0.5	0.2	0.4	0.3	0.4
Benshan guil	99.3	49.5	74.9	49.8	0.5	10.1	5.0	7.6	5.1	0.5
SNNP	75.6	37.7	56.8	37.9	0.5	11.9	5.3	8.6	6.6	0.4
Gambell a	110.7	66.5	89.1	44.2	0.6	24.1	5.4	14.9	18.7	0.2
Harari	104.5	75.0	90.0	29.5	0.7	48.7	37.5	43.0	11.2	0.8
Addis Ababa	86.1	83.5	84.7	2.6	1.0	53.0	44.1	48.1	8.9	0.8
Dire Dawa	66.4	53.4	60.0	13.0	0.8	26.7	19.6	23.0	7.1	0.7
Total	55.9	35.3	45.8	20.6	0.6	11.3	8.0	9.7	3.3	0.7

G.G. = Gender Gap (the difference between the male and female enrolment ratios)

GPI = Gender Parity Index (the ratio between the female and the male enrolment ratios)

Source: Education Statistics Annual Abstract, 1998/99

4.3. Quality and Efficiency

The expansion of formal education in Ethiopia has been viewed as an important instrument for transforming society. Since 1974, the participation rate in the formal education sector has substantially increased and in 1995 the country had nearly one million students in grades 7 to 12. By this time, the educational sector has been able to produce a total of nearly 400,000 secondary school graduates and send to the labor market. The rapid expansion of formal education in the country has been at the cost of quality. This is reflected in high pupil-teacher ratios, increasing numbers of teachers with no specialized training overcrowding of classrooms, shortage of educational materials and poor educational management. (Ethiopian Journal of Economics, Vol.1, No.1, April 1997/98)

The curriculum of Ethiopian institutions of learning has also often been criticized as irrelevant to the needs of the country. The curriculum teaches students to know more about western history and civilization than Ethiopia realities. The indiscriminate adoption of imported curriculum has produced a youth that did not understand the past and was largely incapable of comprehending the dynamics of social, economic and political change in the country (Tekeste, 1990 quoted, Ibid.)

In an education system, it is important to understand and define clearly the two factors, internal efficiency of the system and the quality of education. Education as a system for human development unless its efficiency and quality is maintained at a meaningful level, its objective cannot be met.

No formal comparison has so far been made, especially based on international tests to see the quality of Ethiopia education against international standard. It is true that the design of the curriculum, the recruitment and training system of teachers and other supporting system are more or less similar to most developing countries.

The evaluation of education system during the DERG government revealed that the exam-oriented education had highly affected the quality of education. The system has not changed much. Although, the New Educational Policy has recognized its demerit and numerous measures are being taken such as enlargement of college entry quota with special emphasis on encouraging female students and streamlining the testing procedures. But all these designed measures are not implemented at the required level yet. Therefore, its impact on the overall educational quality is not still reflected at the expected level. As far as the new educational system is concerned, a high-level mental process such as critical reasoning, creative thinking and interactive

communication are highly recommended in the New Policy, but they are constrained by the number of students, classroom size, shortage of teaching materials and capabilities of the teachers.

There are proxy indicators that could be used to signify the quality of education and internal efficiency of the system. The pupil-teacher ratio (PTR) allows us to measure the level of human input (teachers) for a given size of pupils. These ratios need to be compared with the set of national norms¹.

Table 19: Pupil – Teacher Ratios

Year	Primary (1 –8)	Senior Secondary
1993/94	32	33
1994/95	33	33
1995/96	37	33
1996/97	42	35
1997/98	47	38
1998/99	51	40

Source: Ministry of Education, 1998/99

The pupil-teacher ratio grew from 32 in 1993/94 to 51 in 1998/99 for primary and at secondary level showed an increment of 7 between the consideration period. Except for the year 1998/99, the national pupil-teacher was below the standard set (50)

¹ According to set national norms Pupil – Teacher ratio is 50 for primary and 40 pupils per teacher for secondary.

in primary level, while at the secondary level the national average in 1998/99 did not indicate the under or over utilization of teachers. The trend in primary level suggests that the efficient utilization of teachers in 1998/99 than in 1994/95. (See table 19)

Considering the time period starting from 1967/68 the pupil-teacher ratio was at a decreasing trend, which shows under utilization of teachers, while between 1979/80 and 1984/85 showed over utilization. In such cases, quality as well as efficiency was highly affected. When we consider government and non-government schools the effect on quality and efficiency was almost the same at all levels.

When we consider pupil-teacher ration at regional level by taking the case of 1998/99 at both levels we observe the following situations. The pupil-teacher ratio indicates that the ratio ranges from 20 in Somalia to 59 in SNNPR. Except for Amhara (55), Tigray (55) and SNNPR. The pupil –teacher ratios of the regions were equal to or below the national average (51) at primary level. While at secondary level ranged from 15 in Somalia to 51 in Addis Ababa. Except for the regions of Amhara, Dire Dawa, Tigray and Addis Ababa, the pupil- teacher ratio in the other regions was below the national average (40). From these regional variations, it is possible to infer that, primary school teachers in Addis Ababa were serving more students, whereas in Somalia they were not utilized efficiently, while at the secondary level, there was no

demand for more teachers in Somalia, Benshangul-Gumuz, Afar, but in Addis Ababa the demand for more secondary teachers was high. (See table 20)

Table 20: pupil-Teacher Ratio by Region, 1998/99

Region	Primary (1-8)	Senior Secondary
Somalia	20	15
Harari	25	37
Afar	26	23
Gambella	37	31
Dire Dawa	42	43
Addis Ababa	46	51
Oromaya	47	33
Benshannguil	51	21
Amhara	55	43
Tigray	55	45
SNNPR	59	39
National	51	40

Source: Ministry of Education, 1998/99

It is important to keep in mind that the national aggregate figure of this indicator hides the true nature, that is, the real picture at the school level. This could be a problem of aggregate data.

The average number of pupils per class (per section) is another important factor that reflects the condition of class size. This also used to assess the efficiency of resource utilization and indirectly to assess the teaching and learning process.

As we observe in the following table (table 21), the condition of government and non-government schools at primary level, the pupil-section ratio in non-government schools was higher than in government schools, except for the year's 1998/99. This means there were on the average more pupils in a class, which affected the teaching and learning process. On the other hand, as it is indicated in the table, the pupil-section ratio in the early 1990s in rural schools was much lower than the standard set for the primary level. As a result rural schools were not used efficiently, however, since 1996/97 the situation has to a large extent been changed. The pupil-section ratio has remained above the standard during the period under-consideration. In general, the implication of the pupil-section ratio is the existence of overcrowded schools, which in turn necessitates the construction of new schools and classrooms. Similarly, the pupil-section ratio at the secondary level was higher than the national standard set. Although the national average may not show exactly the region where the problem exists, overall there seemed to be over crowded classrooms in secondary schools too.

Table21: Pupil-Section Ratio by Area

Pupil – Section Ratio at Primary Level(1 –8)				9 -12	Pupil- section Ratio at primary level (1-8)		
Years	Government	Non-government	Total		Urban	Rural	Total
1993/94	-	-	-	-	-	-	-
1994/95	46.7	68.0	48.1	63	61.7	41.1	48.1
1995/96	51.9	64.5	52.7	63	62.7	47.8	52.7
1996/97	56.8	61.7	57.2	65	64.2	53.7	57.2
1997/98	59.4	65.5	59.8	68	65.3	57.2	59.8
1998/99	63.4	62.7	63.4	71	66.1	62.0	63.4

Source: Ministry of Education, 1998/99

At the regional level, the pupil-section ration except in Afar and Harari was above 50 at the primary level and in all the regions at the secondary level was above 40. As is indicated in the table below, the problem was more serious in SNNPR, Addis Ababa and Amhara and Dire Dawa at both levels. Thus, measures have to be taken to increase the existing classrooms in order to bring down the given ratio to the national standard. It could not be difficult to imagine its negative impact on teaching and learning process. (See table 22)

Table 22: Pupil-Section Ratio by Region, 1998/99

Region	Primary (1 – 8)	Senior Secondary (9 – 12)
Afar	40	65
Harari	48	63
Benshangul	55	46
Gambella	57	66
Amhara	59	71
Dire Dawa	61	70
Tigray	62	69
Oromiya	62	66
Addis Ababa	68	76
Somalia	69	44
SNNPR	72	77
National	64	71

Source: Education Statistics Annual Abstract, 1998/99

The above indicators for the quality of education are believed to be some of the determinants, because it is believed that the less number of students per teacher the higher the degree of contact between students and the teacher. Of course, contact alone may not be enough for the provision of education at the required level. It also depends on what one teacher does in class and the interaction between the students and the teachers and also other factors such as the academic capability of the teacher, experience and school facilities (libraries, workshops, laboratories, books per student, etc.), which used to be at a lower standard. Therefore, besides the problem created by the pupil-teacher ratio and pupil-section ratio, the educational process in Ethiopia is also highly affected by the above factors.

The efficiency of the Ethiopian education system was low. Promotion, repetition and drop out rates are the path students' flow from grade to grade and characterize the efficiency of the education system in producing graduates. Students' flow rates are the most important elements in any school system. Overstaying beyond the specified number of years or leaving before the completion of an education cycle are both outcomes of inefficiency in the system.

The internal efficiency of the educational system was also low particularly at the start-ups of the primary, secondary and tertiary education. About a third of the students enrolled in grade one dropped out and close to one fifth the remaining repeated the grade. The drop out rate for junior secondary was about 10 percent for each of the two grades and about 19 percent repeated grade eight. In senior secondary schools the dropped out and repetition rate were the highest standing at about 17 percent and 20 percent respectively for grade nine. At the tertiary level there is a drop out rate of around 10 percent. National examinations are given at the end of the two levels under the New Educational Policy, that is, at primary and senior secondary. Though the pass rate predetermined, the progression from primary to senior secondary level was relatively high with about 75 percent passing the primary and 30 percent to tertiary level from senior secondary, including private candidates pass the National School Leaving Examinations each year. However, acceptance by tertiary institutions was less than 10 percents. Many factors might account for this state of affairs, but the quality of education being given at the schools; the examination system and the availability of educational facilities at the higher levels play a major role. (Education Sector Strategy, 1994,PP.4 –8)

Table 23: Repetition and Drop out Rate at Primary School (1-8) by Year (%)

Year	Repetition Rate			Drop out Rate		
	Boys	Girls	Total	Boys	Girls	Total
1994/95	11.5	15.6	13.1	13.77	13.78	13.77
1995/96	9.3	12.2	10.3	15.97	15.18	15.68
1996/97	10.6	14.1	11.9	15.98	15.60	15.84
1997/98	11.2	14.9	12.5	15.35	14.86	15.17

Source: MOE, Indicators of the Ethiopian Education System, 1999.

As can be seen in the table above (table 23), in 1997/98 out of the total 72.3 percent of primary school students were promoted to the next grades. Of the total numbers, 12.5 percent were repeaters and 15.17 percent were dropouts. The highest rate of promotion was observed in 1995/96, which was 74 percent. Thereafter, the promotion rate was decreasing, while repetition and drop out rates were increasing which reflects the weak internal efficiency of the education system. When compared the percentage of repeaters at different levels by sexes, the number of repeaters of female was much higher than males and becomes more sever as we go up the level

during the periods under consideration. When we compare this with reference to urban and rural, at primary level the number of repeaters in urban was more severe than rural, while at secondary level, the problem was more severe in rural area. It is not clear why rural children face better than urban areas despite the fact conditions are better in urban areas. In urban areas there might be factors that distract children from their education, while such factors might be absent in rural areas. (Tables 24 and 2

Table 24: Percentage of repeaters by Year and Level

Year	Primary			Secondary		
	M	F	MF	M	F	MF
1994/95	8.2	12.6	9.9	12.2	22.3	16.7
1995/96	9.2	13.2	10.7	13.2	23.7	17.7
1996/97	7.8	10.4	15.5	13.9	26.2	19.0
1997/98	9.4	12.3	10.4	13.3	22.9	17.2
1998/99	10.2	12.6	11.2	14.2	21.3	17.1

Source: Calculated from statistical abstract, MOE, 1994/95 –1998/99.

Table25: Percentage of repeaters by area

Year	Primary						Senior Secondary					
	Urban			Rural			Urban			Rural		
	M	F	MF	M	F	MF	M	F	MF	M	F	MF
1994/95	10.2	15.7	13.7	6.1	7.5	6.9	12.2	22.3	16.7	10.5	22.5	14.7
1995/96	12.4	15.6	9.2	7.7	10.7	8.6	13.3	23.6	17.8	9.9	24.3	15.0
1996/97	9.6	11.9	10.7	6.9	9.1	7.6	14.0	26.2	19.1	11.5	28.4	16.9
1997/98	10.4	13.3	11.7	8.9	11.5	9.6	13.3	22.9	17.2	11.7	23.9	15.8
1998/99	10.9	13.8	12.2	9.8	12.3	10.7	14.2	21.2	17.0	14.5	27.9	19.1

Source: Calculated from statistical abstract, MOE, 1994/95 –1998/99.

Co-efficient of efficiency as an alternative indicator of internal efficiency, which is the reciprocal of the input-output ratio, can be used to summarize the consequences of repetition and dropout on the efficiency of the educational process in producing graduates. The co-efficient of efficiency is the ideal (optional) number of pupil-years required with no repetition nor dropout to produce a number of graduates from a given cohort in primary education

expressed as a percentage of the actual number of pupil-years spent to produce the same number of graduates. From the table below (table26), we can observe the condition of Co-efficient of efficiency for boys and girls during the period under consideration. Thus, under the given condition, the system of primary education was 54.3 percent efficient for boys and 40.4 percent efficient for girls in 1994/95 and showed slight improvement in 1995/96. Since then, it continuously declined with girls contributing higher to the inefficiency of the internal system. This situation, which indicates ill effects in the system, needs immediate attention.

Table 26: Coefficient Efficiency at Primary Level

Year	Boys	Girls
1994/95	54.3	40.4
1995/96	55.4	41.9
1996/97	51.8	39.8
1997/98	43.5	35.2
1998/99	42.4	36.5

Source: Statistical Abstract, MOE, 1998/99.

Thus, in general, as teachers' student ratios show the counterpart of large enrollments was large classes, so the quality of education has been called into question. Nowadays entering numbers are high, but attrition is also high. But still the number of students is many in relation to the number of available classes and materials and even at the higher level the available of well-equipped faculties is very low. The consequence is didactic lecturing rather than discussion and authoritarian methods to control large numbers of students in a class. The condition of this educational process can also be observed in relation to the economic situation of the country. The return to investment in education in the different levels can more be visualized by correlating certain factors. In the following chapter this will be discussed at large.

Chapter V

The Role of the Education on the Economic Growth in Ethiopia

The purpose of this chapter is to look carefully the respective roles of educational levels in the growing economy of Ethiopia on the basis of enrollment data. First, does the relative importance of this educational variable depend on the economic development of a country? Second, do the effects vary over time, say from 1980/81 to 1999? The methodological aspect of the analysis will follow the following patterns. First, showing the contiguity of economic and educational growth. Second, providing descriptive statistics on educational enrollment by region to infer the magnitude of variation. Third provides econometric results on the effects of educational enrolments on the growth of per capita income. Finally its policy implication will be dealt with.

As a review we can look at the following facts for our analysis from the previous works.

According to the recommendations of the World Bank (1991), “Investing

in people, if done right,... provides the firmest foundation for lasting development” is a good stimulating idea for a country like Ethiopia. Education is a sound economic investment. For individuals and families, education increases income, improves health and reduces fertility rates. For a society, investing in education raises per capita GNP, reduces poverty and supports the expansion of knowledge. Numerous studies have shown that the monetary returns on investment in education to be well above 10 percent, that is, commonly used to indicate the opportunity cost of capital. The returns on investing in primary education are the highest. It is well documented that investing in education complements investment in physical capital and the benefits derived from both are highest where macroeconomic policy is sound. Investing in education sets off an intergenerational process of poverty reduction. Massive investment in both primary and lower secondary education complemented by a pattern of growth that channels labor into productive uses was one key element in the East Asian development “miracle”.

The contribution of education to economic growth may take different dimensions. Improving the quality of labor, labor mobility,

scientific and technical knowledge and entrepreneurial ability are some of the forms. The human capital theory asserts that the higher incomes of more educated workers result because they are more productive, which is accepted in a competitive labor market. The return to education is well understood by the public against its direct and indirect costs. As our daily life teaches us this is rewarded by higher earnings during the working life of the educated individual.

An economy based on labor-intensive or low-technology efforts would require more persons with relatively low levels of education, advanced economy, on other hand, would need increased graduates from higher levels of the system, especially graduates trained in technical subjects. It is also true that education provides the necessary skills for an economic take-off. Thus, changes in the structure of education should precede the take-off period. Increments in lower-level enrollments should occur before the increments in secondary and higher education enrolments. In the world of competitive labor market, the supply of trained manpower need to correspond with the demand for it. To say this with regard to human-capital approach, changes in curricular offerings of Ethiopian schools should fit changes in the structure of the economy.

Although there is a price to be paid and frustration and instability

to face in higher rates of educational expansion, there are arguments that development of education and other social programs will lead to accelerate economic growth. On the other side, the experience of some countries shows that the result of rapid enrolment expansion of education system is simply increasing enrollments incongruent with the economic and social structures, marked by high levels of unemployment and wide income differentials. Many systematic tests for the hypothesis have been made by many researchers, in which some of them produced ambiguous findings. But there are findings, which show the positive effect of education at different levels of the growth of gross domestic product and the rate of investment and in general in productivity convergence.

A hypothesis test that depends only on enrollment information without considering the content and quality of education would reflect the size of the system but in matters of economic and social developments it could lead to a fundamental error. An increase in enrollment to be followed by rapid economic growth or if it is going to affect the economy positively, the educational system should also be associated with the

quality and efficiency. Education in general is assumed to raise productivity by imparting knowledge and skills that could make a worker efficient and more valuable in the labor market. The importance of education to economic growth is more reflected in the economic conditions of South East Asia. According to the World Bank Publication (1996), the major difference between East Asia and Sub-Saharan Africa is the variations in primary school enrolment rates. Investment in physical capital accounts for only 20 percent of the difference (P.23).

According to the labor market assessments of returns to investment on education in Africa have been found to be 10 percent and occasionally above 20 percent. It is also suggested that the impact of education was largest in developing countries because of its relative scarcity. In Ethiopia, for example, before 1973/74 there was an increased investment in both the quality and quantity of education. According to a 1972 study by the World Bank, the private rates of returns to primary, secondary and higher education were 35 Percent, 22.8 percent and 27.4 percent, while the social rates of return (unadjusted) were 20.3 percent, 18.7 percent and 9.7 percent

respectively. Thus, the social costs of education were much higher than the private costs, especially at higher levels. (Psacharopoulos et al., 1985, quoted in Ethiopian Journal of Economics, Vol. VI, No.1, April 1997, pp.88 –89)

According to the study made by Wolday (1997) the case of the formal sector, the returns to primary education (3.3 %) were lower relative to higher educational levels. This result was similar to that of Appleton (Appleton et al., 1997) for Ethiopia. From the table below (table27), we can observe that the returns for primary education for females (4.1%) are greater than the returns for males (2.4%). While for other levels above primary education, the return for males is greater than for females. Thus, according to the data, the contribution of males for the overall except in primary is higher than that of females. But this is in conflict with widely accepted findings of Psacharopoulos (1994) who estimated highest returns to primary education at globally. The conflicting finding may be due to small sample size in the study based on cross-sectional data for the enterprises in Addis Ababa.

Table 27: Mincerian Returns to Schooling in Edget Cotton Factory
(Ethiopia), 1996.

Level of education	Returns for males(%)	Returns for Females(%)	Both Sexes(%)
Primary	2.4	4.1	3.3
Junior Secondary	-1.8	8.8	5.5
Senior Secondary	7.6	0.0	2.8
Diploma and Certificate	20.6	18.2	18.31
Above Diploma	13.3	9.6	11.3

Source: Wolday, 1996,P.97

Factors such as strong investment, an educated and well-trained work force, research and development activity, a developed information sector, and a suitable product mix are important elements for developing the economy. But also developing trading relations with advanced

countries, foreign investment by multinational corporations, a receptive political structure, low population growth and the like are responsible for development of the country. As it was indicated in previous work the quantity of education provided by an economy to its inhabitants is one of the major influences determining whether the society is growing rapidly enough to narrow the gap in per capita income with the more prosperous economies. (See, for example, Baumol, Blackman and Wolff, 1989, CH.9, or Barro, 1991 taken by Wolff and Gittleman, P.148) In the same paper Maddison has also made it clear that the important role played by education in the economic development of a nation in the twentieth century (See, for example, Maddison, 1989, Ch.6). As a policy suggestion our country can do from this a great deal to improve its performance in the growing process by increasing the resources it devotes to education.

In some previous works, the comparative role of primary school, secondary school, and higher education was made clear in the growing process of an economy. In such studies, they have used educational enrollment rates and attainment rates as the measure of educational input.

Here in my analysis, I will use enrollment rates as the appropriate indicator of schooling input, in the Ethiopian case, since it reflects those of the future labor force, which would be expected to have positive effects on the social and economic transformation of the country.

It is well understood that a higher level of education in the population means that more people can learn to use better technology. It is highly qualified to infer the importance of education on economic growth from the success of four of the fastest growing East Asian Economies: the republic of Korea, Hong Kong (China), Singapore and Taiwan (China). Before their economic take-off, their school enrollment rates were much higher than those of other developing countries, for example, if we see the table below (table28) in the year 1970 the enrollment for the Newly Industrial Economies was much higher than the less developed countries like Ghana, Kenya and Ethiopia, even India. The lower enrolments in Ethiopia explained the situation of the economy that it was even much lower than some of the Sub-Saharan African countries. The importance of education for economic growth had long been recognized and established empirically. For example, the growth

in years of schooling had explained about 25 percent of the increase in GDP per capita in the United States between 1929 and 1982. (World Development Report, 1998/99, P.20)

Table 28: Gross Enrollment Rates in primary School in Selected Economies

Economy	1970	1980	1990
Korea, Rep. Of	103	110	105
Hong Kong(China)	117	107	102
Singa Pore	105	108	104
India	73	83	97
Ghana	64	79	77
Kenya	58	104	95
Ethiopia	16	41	31

Note: Data are total primary enrolments divided by the number of children at official primary school age in the population. Rates can exceed 100 percent when persons younger or older than the official age are enrolled.

Source: World Bank, 1998d,P.20

At its most simplistic level, the human-capital theory had suggested a mechanistic relationship between education and economy. According to the human-capital theory, growth in education should be followed by economic growth, whereas the status-conflict explanation of educational growth suggests quite contrary to this, that is, a steady rise in enrollments at the upper levels followed with no relationship to the

behavior of the economy. Status-conflict approach could be more realistic when elite are able to directly influence education. Considering against the above views, the directives and contents of the educational policy of Ethiopia, at glance we would be able to comment on certain aspects.

It could be true to say that the main objective of any educational system is to cultivate the individuals capacity for problem solving and adaptability to the environment by developing the necessary knowledge, ability, skill and attitude. By that the person will then be able to participate in all the activities of the society and contribute to the overall development of the country. The educational objectives of Ethiopia in general cannot be far from these realities. But as it was clearly explained in the previous sections, the educational plan was not well organized and structured to fill the gap created by the supply and demand of skilled manpower, so that the economy gets necessary momentum from these developments. Educational objectives of Ethiopia before 1991/92 were heavily characterized by these phenomena. Therefore, The status-conflict approach would seem most applicable to

such situations of Ethiopia. As far as the New Educational Policy is concerned, its curriculum, where the accumulated knowledge and experience are embodied and its applicability to narrow the gap created in the socio-economic development of the country is promising. From this it would be possible to predict the direct association between education and economic growth. How is this pattern of schooling and economy of the country proceeding during the last thirty years?

The effort to meet the demand for modern schooling have began in 1941, since that time growth in school enrollment has been continuous, showing small increment every year. The following table (Table 30) presents enrollment data for primary and secondary schools starts from 1967/68, while enrollment for higher education is considered from 1985/86 and data for vocational secondary is not available. The table shows that except for the years from 1988/89 to 1992/93, enrollment has increased at considerable rate every year at all levels, but at higher education the increment was rather erratic, in fact at most it seem to be decreasing during the period under consideration. In the years from 1988/89 to 1992/93 school enrollment was highly affected by the overall

instability of the country. When we see the behavior of the increment between 1967 to 1972/73-school enrollment has shown significant growth rates annually and this was directly related to the stability of the country and with the betterment of the economy. From 1972/73 to 1987/88 school enrollment in absolute terms and growth rate have decreased significantly, reaching at its climax with a growth rate of -8.4 percent at primary level during the period between 1987/88 and 1992/93. The pattern of growth rate is similar in other levels, especially in senior secondary and higher education.

Starting from 1992/93 New Economic and Social Policies were put into effect. As a result new progress in school enrollments and economic achievements of the country have been observed. In the years under consideration, 16.1 percent, 7.8 percent and 66.7 percent of school enrollment growth rates were observed in primary, senior secondary and tertiary level annually, respectively. (See table 29) The growth of enrollment in colleges and universities has been more remarkable. As indicated above, despite administrative barriers to limit enrollments, the number of university students has increased at a higher

rate since 1994/95.

Table 29: School Enrollment Growth Rates by Year (%)

Year	Primary	Junior Secondary	Senior Secondary	Tertiary
1967/68– 1972/73	11.1	15.1	21.5	NA
1972/73– 1977/78	8.4	9.8	13.9	NA
1977/78 – 1982/83	1.4	14.1	13.6	NA
1982/83 – 1987/88	2.8	18.3	8.1	0.69
1987/88 – 1992/93	-8.4	-11.5	-0.81	-1.8
1993/94 – 1998/99	16.1	-	7.8	66.7

Source: Calculated from various issues of ministry of education statistical data, 2000

Note: Growth Rate is equivalent to average annual compound growth rate

It is possible to observe the direct association of the growth of the economy with the expansion of school enrollments during the periods considered. The following table (Table 31) of GDP at constant factor cost are presented. As already explained above, factors that are responsible for the growth of the economy, are many, out of which capital, labor and education are the essential part in the growth process. But in the process of economic growth, it is true that when the economy develop, more schools are opened and more children enrolled and when the condition reversed, the opposite happened. By the same analogy, the growth in GDP was almost similar to the growth in school enrolments. As we observe from the data of GDP and school enrollments, school enrollments have expanded more as the economy increased qualitatively, especially from 1994/95 except for the erratic behavior in 1997/98. When this is also related to the expansion of investment capital, still there is a positive association between the two. Domestic Investment capital increased from 492.54 million birr in 1993/94 to 763.32 million birr in 1998/99 (Investment Bulletin, 1999). As school enrollments expanded, investment projects with huge capital at the regions have been on the increase in the last six years. This reflects the direct response of school enrollments to the economic situations of the country. Thus, it is possible to

conclude that increments in school enrollments are directly associated with the improving economy of the country. This statement is strongly supported by the data since 1992/93, but not by the data before that. The year to year results does not show consistency.

Table 30: Enrollments at different Levels by year

Year	Primary	Junior Secondary	Senior Secondary	Tertiary
1967/68	451557	44777	26690	NA
1968/69	513981	56918	31943	NA
1969/70	590445	63215	42487	NA
1970/71	655427	73121	53220	NA
1971/72	716726	79338	61353	NA
1972/73	762686	90359	70782	NA
1973/74	859831	101749	81296	NA
1974/75	959822	124584	64213	NA
1975/76	1085307	140817	90091	NA
1976/77	1176636	150129	131339	NA
1977/78	1143207	143880	135704	NA
1978/79	1377702	160877	163910	NA
1979/80	1810951	186089	185217	NA
1980/81	2130716	210721	216876	NA
1981/82	2374362	248754	238425	NA
1982/83	2511050	278057	257095	NA
1983/84	2497114	303581	276253	NA
1984/85	2408065	320188	282151	NA
1985/86	2448778	363132	292385	4385
1986/87	2736517	424046	318305	4670
1987/88	2884033	644016	378734	4446
1988/89	2855130	447463	426413	4506
1989/90	2662214	418496	451766	4243
1990/91	2466464	404861	453985	4272
1991/92	2063635	359111	416082	3792
1992/93	1855894	348803	363686	4069
1993/94*	2641066	-	357194	4065
1994/95	3098422	-	370916	32671
1995/96	3787919	-	402753	35027

1996/97	4468294	-	426495	42132
1997/98	5090670	-	467669	54196
1998/99	5702233	-	521728	52305

Source: Ministry of Education, 1996 and 1999

Note: Because primary and junior secondary is combined since 1993/94, enrollments for junior secondary are not reported separately.

* Data for 1993/94 –1998/99 are for primary (1–8) and senior secondary (9–12)

Table 31: Gross Domestic Product by Industrial Sector at Constant Factor cost at 1980/81 price

(In million birr)

Year	Birr	Year	Birr
1980/81	9,324.5	1990/91	10,938.1
1981/82	9,374.0	1991/92	10,524.6
1982/83	10,325.5	1992/93	11,798.7
1983/84	9,675.8	1993/94	11,999.3
1984/85	8,734.7	1994/95	12,644.3
1985/86	9,597.3	1995/96	13,987.1
1986/87	10,948.7	1996/97	14,709.9
1987/88	10,947.8	1997/98	14,631.0
1988/89	10,986.4	1998/999	15,553.0
1989/90	11,432.7	-	-

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

Note: birr is Ethiopian Currency

The mean years of schooling of the labor force based on 1994 population and Housing census can be calculated using the formula, $(16u + 14c) / 2 + 12h + 11(h-1) + 8m + 6p$ / total employees (L). Where u is 4 years college, c 2 years college, h 12 grade completed, h-1 is 11grade completed, and m is middle school completed and p is

primary school completed. From this we get the mean years of schooling to be 1.2 and the average annual growth rate of per capita GNP (compound growth rate) for the period 1975 to 1993 is 1.3 percent. When this is compared with other countries such as India, Thailand and South Korea, where its mean years of schooling of the labor force in the early 1980s was 1.8, 4.8 and 7.9 respectively; while their respective growth of GNP per capita for these countries were 2.8%, 3.8% and 6.5% respectively, was very low (Ogaw et.al.,1993). Thus, the effect of schooling on the economy on the Ethiopia case was very low, although both of them are at a very lower stage. Here the causality condition of education and economy can also have some effects on both developments. (Data for GNP is collected from World Bank publication, 1994)

When the rate of return to investment in education in primary education graduates in Ethiopia is compared with secondary school graduates the following results are observed. The private rate of return in education in primary is found to be 41 percent, while for social it becomes 25 percent. Similarly, the private rate of return in secondary education is higher than the social rate of return. The Private rate of return in secondary is lower than the rate of return in higher education. This seems consistent with the already stated idea (see table 32a).

The equation for the private rate of return is:

Private rate of return = (Mean annual post-tax earnings of university graduates)
– (Mean annual post-tax earnings of secondary school graduates) / (Four years of
study)*(Mean annual post-tax earnings of secondary school of graduates) + (Mean
annual private direct cost of study)

A social rate of return to college education could be calculated in the same way,
although earnings should be pretax and the direct cost should include the full amount
resources committed per student for the respected level. Data are taken from various
publications of 1999.

Table32a: The rate of Return in Education in Ethiopia (%)

Type	Primary	Secondary
Private rate of return	41	21
Social Rate of return(unadjusted)	25	17

Source: own calculation

Note: *these rates of return are calculated using Psacharopoulos formula taken from Todaro, 1997,P.409.

*The rate of return for primary is calculated by assuming on average 360 birr as the opportunity cost for primary education annually

*The rate of return for tertiary is not calculated because data for full cost is not available.

School Enrollment Rates and its dispersion among regions

Table 32b: Enrollment Rates by Level, Selected Years (%)

	Primary(1-6)		Junior(7 -8)		Senior Secondary(9-12)	
	1973/74	1981/82	1973/74	1981/82	1973/74	1981/82

Mean	19.64	47.37	8.36	17.49	3.74	9.45
Std.Deviation	13.46	24.35	10.55	17.03	6.16	12.46
Coefficient of Variation	0.69	0.51	1.26	0.97	1.65	1.32

Source: Calculated from table17a

Table 32c: Enrollment Rates by Level, Selected Years (%)

	Primary (1 –8)					Senior Secondary(9 –12)				
	1994/ 95	1995/ 96	1996/ 97	1997/ 98	1998/ 99	1994/ 95	1995/ 96	1996/ 97	1997/ 98	1998/ 99
Mean	36.38	38.57	43.62	52.49	55.86	12.84	12.17	12.71	14.33	15.59
Std.Deviation	22.48	21.21	22.57	26.28	29.18	14.99	14.12	13.95	15.39	16.03
Coefficient of Variation	0.62	0.55	0.52	0.50	0.52	1.17	1.16	1.09	1.08	1.03

Source: Calculated from tables 17b and 17c

Looking at the summary statistics on enrollment rates at primary and secondary education above, (tables 32b and 32c) we can see that the average primary school enrollment rate increased from 19.6 percent in 1973/74 to 47.4 percent in 1981/82 and to 55.9 percent in 1998/99. The enrollment expansion between 1981/82 and 1998/99 is smaller when compared with 1973/74 and 19981/82. The dispersion among provinces between 1973/74 and 1981/82 declined from a coefficient of variation (the ratio of the standard deviation to the mean) 0.69 to 0.51 and from 0.62 in 1994/95 to

0.52 in 1998/99, in fact, the dispersion among regions has declined in 1998/99 when it is compared with 19981/82. (But remember the organization of the regions is quite different between the two periods, for further information see tables 17a, 17b and 17c). The dispersion in junior secondary and senior secondary levels also fell substantially during the periods under consideration. Considering the two levels, the highest dispersion was found in senior secondary education during the periods from 1973/74 to 1981/82. Under the new regional restructuring, in 1994/95, on average, only 36.4 percent school age students were enrolled in primary and 12.8 in senior secondary, with Addis Ababa, the highest at 84.9 percent and Afar the lowest at 8.4 percent. However, by 1998/99, the average enrollment rate have increased to 55.9 percent in primary and to 15.6 percent in senior secondary, with Harari the highest at 90.0 percent and still Afar the lowest at 7.1 percent. Thus, differences in school enrollment rates have narrowed down among the regions, except in Afar and Somalia region. Moreover, dispersion was lowest at the primary school level and almost more than three times as great at the secondary school level. Thus, these narrowing down in dispersion and increasing on school enrollment rates should have some impact on the relative return of the different levels and on the overall growth process of the country. Since there is a growing concern over regional inequality in Ethiopia, it would have been useful to see the

conditions of convergence among the regions but due to lack of data for per capita GDP of the regions unfortunately I was not able to show this.

The following regression results for the return to investment in education may reflect the presumed effect at national level. I have used educational enrollment rates, defined as the percentage of school age children currently enrolled in school, as the measure of educational input. For the education variable I used two alternative measures: enrollment rates for primary education and for secondary education. Enrollment rates for higher education is not available. The investment share in GDP, I/y , has been used by most studies of growth.

Our standard estimating equations will be the following:

$$\ln(RGDP1 / RGDP0) = b_0 + b_1 Educate1 + b_2 Educate + E$$

$$\ln(RGDP1 / RGDP0) = b_0 + b_1 INVRATE + b_2 Educate1 + E$$

$$INVRATE = b_0 + b_1 Educate + b_2 Educate + E$$

The data for the regression are in table 36.

$\ln(RGDP1 / RGDP0)$ is the percentage increase in real GDP per capita over time from time 0 to time 1, and educate is a measure of educational input. For education Variable we use primary (X3) and secondary (X4) enrollments. INVRATE

(X2) is the average investment rate, i.e. the ratio of investment to GDP. Results are reported for the period 1981 to 1998 by considering the following conditions.

¶The effect of primary and secondary education on the percentage increase in real GDP: the coefficient of the education variable for primary education is positive and significant at one per cent level. While secondary education is with wrong sign out of the expectation, the problem may be with data or the cost may be higher than the expected rate of return. Any way the effect of primary education seems stronger in the economy. Here R^2 is only 0.55 that is only 55 percent of the variation in effect is explained by the explanatory variable (See table 33)

Table33: Ordinary Least Squares Estimation (1)

Dependent Variable is Ln(RGDP1 / RGDPo)		
18 observations used for estimation from 1981 to 1998		
Regressor	Coefficient	Standard Error
Constant	-.199 (-3.0053)	.0662
X3	.006781 (3.9549)	.00172
X4	-.00862 (-1.7544)	.00491
R^2	.55	
R-Bar-Squared	.44	

* T-ratios are shown in parentheses below the coefficient estimate.

¶The effect of primary education on the percentage increase in real GDP with the inclusion of investment rate shows that the coefficients for both variables (primary education and investment ratio) become positive, but insignificant for primary education. The variation of the effect is explained by 51 %. (See table 34)

Table34: Ordinary Least Squares Estimation (2)

Dependent Variable is Ln(RGDP1 / RGDPo)		
18 observations used for estimation from 1981 to 1998		
Regressor	Coefficient	Standard Error
Constant	-.3454 (-4.4482)	.0776
X2	.007666 (1.6636)	.0046
X3	.004927 (2.8955)	.0017
R ²	.51	
R-Bar-Squared	.44	

• T-ratios are shown in parentheses below the coefficient estimate.

¶ The influence of primary and secondary education on investment is found to be quite different at the two levels. As speculated above, the educational level of the population positively and significantly influences investment rates. This is correctly reflected in the case of primary education, but for secondary education the sign is wrong. Primary education is significant at 5 per cent level. The variation in the influence is explained by 33 per cent. The result for secondary education is not according to the speculated idea. This would be because of investment rates could not be positively influenced by the secondary education. One might be related to the investment condition that had been in the country, which was highly depressed or similar with the above condition that the data may be wrong. However, the positive influence of primary education at significant level may mean the weak available investment activities being influenced by small skill formation. Thus, the expected rate of return of education at primary level will be higher than any preceding level. (see table 35)

Table35: Ordinary Least Squares Estimation (3)

Dependent Variable is INVRATE		
18 observations used for estimation from 1981 to 1998		
Regressor	Coefficient	Standard Error
Constant	15.1427	3.212

	(4.7143)	
X3	0.174 (2.0947)	.0831
X4	-0.5530 (-2.323)	0.2381
R ²	.33	
R-Bar-Squared	.24	

Note: the source for enrolment ratio for both levels for the period 1980 to 1992 is World Tables, World Bank book, 1994,P.23 and the rest Statistical Abstract, MOE, 1993/94 to 1998/99 and GDP per capita and Investment Rate from Ministry of Economic Development and Cooperation, 1999

Table36: Key Indicators

Year	X1	X2	X3	X4
1980/81	13.7	13.7	35	9
1982/82	12.9	12.9	45	12
1982/83	14.4	14.4	40	10
1983/84	13.7	13.7	39	11
1984/85	15.5	15.5	34	12
1985/86	16.2	16.2	36	12
1986/87	14.7	14.7	36	14
1987/88	16.6	16.6	40	14
1988/89	17.6	17.6	39	15
1989/90	12.5	12.5	35	14
1990/91	10.4	10.4	31	13
1991/92	9.2	9.2	25	12
1992/93	14.2	14.2	22	10
1993/94	15.2	15.2	22.8	7.3
1994/95	16.4	16.4	26.2	6.6
1995/96	19.1	19.1	30.1	8.1
1996/97	17	17	34.7	8.4
1997/98	17.7	17.7	41.8	8.9
1998/99	18.3	18.3	45.8	9.7

Source: World bank, 1994, MEDAC, 1999 and Ministry of Education, 1994-1999

Note: X1 = GDP per Capita (in birr) at constant price 1980/81

X2 = Investment Share of GDP at constant Price 1980/81(I /Y) (in birr)

X3 = Primary Enrollment Ratios

X4 = Secondary Enrollment Ratios

Chapter VI

Conclusions and Policy implications

According to the human capital theory, there is a relationship between the expansion of education and the growth of the economy. This relationship shouldn't be seen simply as cause-effect phenomena. Education in Ethiopia is not yet well developed to justify this presumed thought at a wider scope, but this does not mean the reflection of the contiguity already shown is not realistic. As we have observed, the expansion of education follows social demand for increased educational opportunities because educational attainment is a key determinant of occupation.

Concerning the importance of schooling as a determinant of economic growth certain points can be concluded from the Ethiopian case. First, the low level of mean schooling had a direct impact on the growth of per capita GNP, although the causality condition works here. Second, when we observe the private rate of return and social rate of return, it

seems consistent with the presumed idea that the private rate of return is the highest than the social rate of return. The social rate of return increases as the level of education decreases. The lowest social rate of return in the higher education is due to the highest subsidization in that level. In the regression analysis, when investment rate is included only primary education remains significant at 5 percent level, but without the inclusion of the investment rate it becomes significant at one percent. It has already been stated that a country's investment is positively and significantly related to enrollment rates, but here it is only reflected in the primary education. Thus, the overall effect showed that the availability of an educated populace appears to act as a stimulus to investment, by that exerts an indirect effect on economic growth.

The view that a certain level of education is a key determinant of the country's economic development was not well established in the country. As we have seen, there is a problem of accessibility, equity and quality of the education at all levels. The enrollment ratio at any level is much lower than many African countries, while the demand for skilled manpower is very high. Quality issues are very critical. As

we have seen in the analysis, the educational process is highly constrained by high drop out and repetition rates. The labor market can not absorb a significant number who graduates from different levels and institutions. This can also be related to a quality failure in the education system. The disparity among sexes and regions by enrollment is very wide. It is true that achieving quality in the system could be a solution in the long run, but fulfilling the demand for lower skilled manpower is a non-compromising option in the country. Thus, the issue of expansion of enrollment shouldn't be seen as a secondary.

There are various factors that push our development program on education. Of these, population growth is one of the pressing problems in the country. The age structure of the population of Ethiopia show that it is predominantly young and the youth population in turn implies high potential fertility. This situation increases the demand for education services. According to the estimates of the potential school age population, the demand for all levels will increase significantly. Demand for new primary levels, for example, with 7-14 age group will increase from 12.6 million in 1999 to 14.7 million in 2005, yet, school

enrollment is extremely low even by the standards of most Sub-Saharan African countries.

The gross enrollment ratio at national level has reached 45.8 percent, 9.7 percent and 1 percent for primary (1-8), senior secondary and tertiary levels, respectively. The retention rates, despite some improvement in the past five years is still low with the majority of the students dropping out before they reach senior secondary schools. At national level, the gross enrollment ratio for boys is 55.9 percent, whereas, for girls is 35.3 percent at primary level. The trend at secondary level is also similar; that is, 11.3 percent boys as opposed 8.0 percent girls for the 1999 data. The gross enrollment ratio ranges from 7.1 percent in Afar to 90.0 percent in Harari in the primary level and 0.4 percent in Somalia to 48.1 percent in Addis Ababa for secondary level. Late entry is common, especially in rural areas. The conditions of the household and school supply are becoming limiting factors for the demand of schooling.

Another problems that affect the supply of schools is that the government owns the majority of the schools. There is a heavy burden

on the government. There are a number of factors that restrict the active participation of the private sector, such as land problems, and capital and bureaucratic problems are the major ones. Unless new strategies are designed to increase the involvement of private sector the compounded problems in the education sector cannot be overcome in the preceding years. Universalization of primary education could be an indispensable factor for the economic development of the country, but this is not possible without freeing some of its resources from the areas already deployed.

Pupil-teacher ratio and pupil-section ratios are important parameters for efficient utilization of teachers and other school facilities. The pupil-teacher ratio at national level is one to 51, which is almost equal to the national norm for primary schools, but the utilization ratio is much lower for many of the regions in the country (58 percent of the regions). Similarly, the pupil-teacher ratio at national level is quite similar to the nationally recommended utilization norm (40 %) at the secondary level, but many ratios are below the required norm in many of the regions. The problem with pupil-section ratio also follows the same

pattern. In this, the mechanism of double shift could also help in creating more access for education.

The problems that are related to efficiency are acute, which are a good manifestation of the quality. Increasing teachers' commitment to the profession and designing training programs to enhance their performance can minimize level of the inefficiency in the system. Attracting, selecting and retaining quality teachers should not be seen as a panacea for some skill problems of performance in the school system.

The scarcity of qualified and experienced teachers (in quantity and quality) in the Ethiopian schools is very high. This is especially very severe in rural areas and in some nationalities. It is necessary to design special mechanisms that could help to minimize such problems. Developing an incentive structure could be considered as a solution for the problem. If any certified and experienced teachers are made to serve in these schools and areas with special incentives, the problems that arises because of inexperienced teachers could be minimized and this would help in alleviating the problems with access, equity and quality

in the respected areas.

The Ethiopian education is at a critical stage in all the three issues (access, equity and quality). The economic condition of the country is very depressed. The main players in solving the problems in access, equity and quality should be teachers, although, there are some other factors to be addressed. In short, the problems in the education system should be recognized as a national problem that requires a national solution.

For the enhancement of efficiency in the system direct feedback on the outcomes of schooling among the players of the system could suggest new goals and means for the schools to meet. The problems should not be associated only with the problems that arises from the pupil-teacher ratio, pupil-section ratio and other pedagogical requirements. This does not mean that, these problems be given less attention for their solution.

For Ethiopia, it appears that primary emphasis should be given to the improvement of all the basic elements of education, that is, access, equity and quality at all levels, and in particular at primary level. Although primary and secondary

education are likely to be the main factors in promoting economic growth of the country, higher education is also a subordinating ingredient to be considered. In general, the problems with access, equity and quality are acute. They are highly affected by the internal and external conditions of the school system. This in turn has resulted in making the role of education to have weak positive impact on the overall growth of the economy in the country. Thus, alleviating the problems that are related with access, equity and quality can only enhance the qualitative change in the effect of education on the economy.

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