Economic Return of Attending Medical School in Ethiopia

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Abstract

The decision to attend university and the choice of field of study has a significant impact on an individual's lifetime earnings. The main objective of this study is to examine and estimate the private returns to medical schooling in Ethiopia with a focus on bachelor degrees. The paper applied the discounted rate of return method. Thus, by treating Medical school tuition payments, room and boarding expenses and the opportunity costs of foregone wages as investments in human capital the researcher estimated both net present value (NPV) and internal rate of return (IRR) of medical education. Questionnaire was designing and different documents were reviewed to get the required data. The result of the study revealed that under a 5 and 10% discount rate, on average physicians enjoys a net present value of 88,891.15 birr and 76,274.15 birr respectively. The expected private internal rate of return also found to be 25.5%, which represent a higher rate than the ones found in the developed countries literature. This result implies that medical education in Ethiopia is profitable and sound investment in private point of view.

***Keywords**:* Rate of return to medical education, net present value, internal rate of return

1. Introduction

1.1 Background of the Study

Being healthy, meaning a complete state of physical, mental and social well-being including the absence of illnesses, is one of the goals most valued by human beings. Thus, it is unquestionable that avoiding or alleviating illnesses, and developing and maintaining physical and mental abilities are something that are considered as an essential part of human welfare. Yet, according to 2007 census about 84% of Ethiopia's total populations live in rural areas with the poorest health indicators (CSA, 2010). 2011's demographic and health survey also indicate that, infant and maternal mortality rate was 59 deaths per 1000 live births and 676 maternal deaths per 100,000 live births respectively for the seven year preceding the survey. The life expectancy of the total population found to be 56.19 years (Wikipedia).

Since, in the country, the government is the main health care service provider, to address the problem of health care delivery it is striving to improve access to basic preventive and curative health service through expanding physical health infrastructure in to rural remote areas and through training of various catalogue of health personnel (Wakgari & Aklilu, 2012). The number of medical schools, public hospitals and health centers increased from 3, 102 and 583 in 2004/05 to 7, 129 and 2142 in 2009/10 respectively (MoH, 2009). Moreover, in 2010 physician to population ratio, specialist to population ratio and health officer reached to 1:34,986, 1:62,783 and 1: 20,630 respectively (HSDP IIV, 2010).

However, even though many types of health workers are required to maintain a working health system, without an adequate number of doctors it could not function at all. Human resource for health is one of the most important elements of the health care system of any country as the quality of delivering health services depends primarily on the performance of the provider. This realization has initiated the government to increase the number as well as to improve the development of human resource in health sector through increasing the number and capacity of training institutions (HSDP IIV, 2010).

According to Admasu and Ahmed (2013), the beginning of Medical education in Ethiopia is highly related with the establishment of Ministry of Public Health in 1948. Training and staffing the Ethiopian health delivery service with qualified middle level allied health professionals was the main focus of the Ministry of Public Health when it established. The first higher medical training institution was founded in university of Gondar in 1954 which was established as a Public Health College and Training Center in joint effort between the Imperial Ethiopian Government, WHO, United state Operation Mission to Ethiopia, and UNICEF (UOG). The first nursing school was founded by the Ethiopian Red Cross society in 1949 and by 1970s there were nine schools for training allied health professionals, nurses and technicians (Admasu & Ahmed, 2013). From that time onwards Ethiopian medical education passed through different millstones. Now The Federal Ministry of Health also emphasizes the role that Human Resource for Health play in improving health outcomes, and achieving the MDGs (MoH, 2014).

1.2. Statement of the Problem

Ethiopia suffers from an acute shortage of health workers at every level and rural areas, in which 85% of the population lives have been particularly chronically under served. According to MOH Ethiopia is one of the countries in the world with low health workforce density of 0.7/1000 population, which is far below the minimum threshold density of 2.3 health works (MD, nurses and midwives) per 1000 population for countries to achieve essential services (a target 80% coverage rate for skilled birth attendance). Health services are labor intensive and personal in nature. Thus, in order to make significant gains in the size of the physicians' workforce, attention must be focused on the role and the result of medical education as an essential element of border health workforce strategic investment in medical education. So, Ethiopia is currently has no alternative but to train physicians in large number.

Consequently, focuses has been given to the phased scaling up of the pre-service education capacities for the scarce health workforce development plan (HSDP IV/ FMoH, 2010). A report presented to parliament in May 2012 revealed that 2628 students had been enrolled in 22 universities (IRIN news). Graduate program enrollments are also rising rapidly in the effort to boost the supply of academic staff for the expanding system (Samuel et al, 2007). The public teaching institutions for medicine has expanded from 3 in the beginning of the millennium to 27 in 2014 and during this period the acceptance rate of the medical school has been increased from 200 to 4000 (Moh, 2014). However, even though becoming a physician is, of course, a monumental decision, attending medical education is not inexpensive and easy. Medical study is hard and requires many more hours than most studies do. In Ethiopia, in medicine and veterinary medicine, the professional qualification of doctor is conferred after six years study, while for others streams the first stage of university level education leads to bachelor's degree after three to four years (MoE). Thus, the opportunity cost of attending medical school is massive. In addition, there has been a continued exodus of physicians from the country. Many literatures indicates that low and eroding wages and salaries in the original country and higher wages and income in the destination country is the main factors for medical doctors brain drain. Moreover, it has become usual that most of the experienced medical specialists and even general

practitioners move to the private sector and NGOs following the completion of the obligation mainly due to low payment level in the public sector. Consequently, the public sector suffers from a shortage of experienced and skilled health professional.

As a result, while a number of strategies have been developed to improve the training and retention of medical doctors in the country, understanding the physicians cost and returns of attending medical schools which may influence their attitudes towards their training and intent to migrate can contribute a lot in addressing the problem. However, in spite of this fact, the issue of private cost and benefit of attending medical education and its implications have had a little attention in Ethiopia. And the researcher found it very worth full to notice and try to fill this huge gap.

1.3. Objective of the Study

1.3.1. General Objective

The overall objective of this study is to analyze the net economic welfare and benefit that the physicians gained by attending medical schools.

1.3.2. Specific Objective

Specifically the study aims;

- To identify whether the medical doctors earn a payment that compensate the costs they made while attending their medical studies in addition to the day to day intensive work involved.
- To estimate the private costs that the physicians incurred for obtaining medical education and the return that they gained at the end.
- To assess the private profitability of investment in medical education.

2. Methodology

2.1. Source of Data and Description

To apply NPV and IRR, it is necessary to identify and obtain the data sets of costs incurred and benefits gained by attending medical education in monetary unit at different point of time.

The data used in this study consists of both primary and secondary data type. In investigating the private costs of medical school, the instructional as well as the room and boarding costs data set are collected from Addis Ababa University Faculty of Medicine cost

sharing forms that medical students obliged to fill during each registration or at the beginning of each academic year. The other cost component, the opportunity cost of forgone wages data are taken from Ministry of Labor and Social Affair (MoLSA). This cost is approximated by what the average students with a preparatory school certificate earn in the public sector for six years. Other education related and incidental cost data are collected through questionnaire.

The source of the benefit data that is the expected gains from obtaining a medical degree was MoLSA. It is measured interms of post-tax average annual life time earning streams by assuming that the average doctors both live and work to age 63 and also retire at age 63 (Ethiopians official retirement age). The data for the other benefit component that is the income that the students earn during internship is taken from the faculty registrar office.

2.2. Population and Sampling Procedure

The study's target population/ participants were undergraduate medical students at Faculty of Medicine (FoM) in Addis Abeba University.

New students joining the FoM at AAU initially attend general courses for six months in the pre-medical training program before joining pre-clinical education during the following Year I and Year II. All medical students completing pre-clinical and clinical (Year III and Year IV) trainings are required to do a one year internship program. In general, the duration for undergraduate medical training has a curriculum lasting for six years.

For this study, to collect the primary data the sample respondents were drawn from all medical students (Year I to internship program) at the FoM. In April 2015, the total number of full-time undergraduate medical students at AAU from Year I to internship program was 1,953 and about 611 of them were females. In order to select a representative sample a random sampling technique was implemented. From 1,953 students, 200 students were selected randomly.

2.3. Questionnaire Design

The questionnaire was intended to find out part of private cost component that are consumption related and incidental expenditures. It begins with the description of the objective of the study. This is followed by socio-demographic questions. Part two of the questionnaire

presented questions that help to identify the main objective or the portion of the cost data.

The questionnaire was comprised of both closed and open ended questions.

2.4. Method of Data Analysis

Empirical measures of the returns to any education, whether it is medical or general, are obtained by applying two approach or two basic methods, in theory at least, should give very similar results; the discounted rate of return method and the earning function/ Mincerian method. The earning function/ Mincerian method is due to Mincer (1974), and involves the fitting of semi-log ordinary least squares regression using the natural logarithm of earnings as the dependent variable and years of schooling and potential years of labor market experience and its square as independent variables. In this semi semi-log earning function specification, the coefficients on years of schooling can be interpreted as the average private rate of return to one additional year of education regardless of the educational level this year of schooling refers to. This basic model has been extended in subsequent work to include educational levels, employment effects and additional control variables such as gender and work characteristics.

The discounted rate of return method, one that is employed in this study on the other hand, amounts to working with detailed age earning profiles by level of education and finding the discount rate that equates a stream of education benefits to a stream of educational costs at a given point in time. In fact, the discounting of actual net age-earnings profiles is the most appropriate method of estimating the returns to education. Because, it takes into account the most important part of the early earning history of the individual. It also reflects the time-value of money and makes it possible to compare costs or payments (cash flows) over time. In addition, Mincerian estimates is that the only costs included are income forgone, which suggests that the Mincerian private return rates are generally overestimate of the true private return rates.

2.4.1. Discounted Rate of Return Method

In this method rate of return to education can be estimated either by raising it to the level at which financial benefits equal costs, which is

then the internal rate of return (IRR), or by setting the discount rate at a required rate, which is then a net present value calculation (NPV) with the gains expressed in monetary units. The discounted rate of return of an education project can be calculated from either the private or the social point of view. However, this study focuses on the private return. Thus, both NPV and IRR are calculated from private standpoint. In passing the term "private" or "individual" here means not only the person who may go to medical school but also his/ her family, especially parents, because the investment decision usually made by all of these people.

2.4.1.1. Net present Value (NPV)

The net present value of an investment in education is the difference between the discounted present value of life time monetary value benefits from obtaining an additional educational qualification and the cost incurred in this investment.

The net present value terms will allow us to see the expected values of medical investments in 2015 birr. It can be determined from the following equation:

$$\sum_{t=1}^{n} \frac{B_t}{(1+r)^t} - \sum_{t=n+1}^{m-a} \frac{C_t}{(1+r)^t} = NPV$$

Where, B_t is the additional income the individual get because of attending undergraduate medical education in year *t*

C_t is the cost that the individual incurred because of attending medical education in year *t*

r is a discount rate

n is the length of medical education study

m is the individual retirement age

a is the individual age when he/she graduate from medical school

m – *a* is the difference between retirement age and the individual's age when he began medical education

Choosing an adequate interest rate for the net present value calculations is a difficult and critical issue as it should reflect the overall time horizon of the investment project and the cost of borrowing or the perceived risk of the investment. To keep things simple, and to make

the interpretation of results convenient enough, the researcher calculate the NPV using discount rates of r=5% and r=10%.

2.4.1.2. Internal Rate of Return (IRR)

The internal rate of return is a key criterion for selecting among alternative investment proposals in financial analysis. When medical education is viewed as a form of investment in human capital, it is neutral to calculate the internal rate of return to evaluate the financial soundness of obtaining an additional educational qualification.

In this method, the rate of return is found by setting the discounted value of costs and benefits over time equal to zero and sitting the discounted value of the implicit discount rate, r.

It can be defined as the discount rate that makes the net present value of an investment zero.

The private of return to an investment in a given level of education in such a case can be estimated by finding the rate of discount, r, which equalizes the stream of discounted benefits to the stream of costs at a given point in time. The formula is;

$$\sum_{t=1}^{n} \frac{B_t}{(1+r)^t} - \sum_{t=n+1}^{m-a} \frac{C_t}{(1+r)^t} = 0$$

or it can be rewritten as;

$$\sum_{t=1}^{n} \frac{B_t}{(1+r)^t} = \sum_{t=n+1}^{m-a} \frac{C_t}{(1+r)^t}$$

2.5. Variables Definition

The main variables involving in the calculation of internal rate of return method are cost and benefit.

A variety of costs and benefits are associated with undertaking a university medical bachelor degree. These costs and benefits can be viewed from both a private and social perspective. In this study since the researcher is concerned with private return, private cost and private benefit were investigated.

Cost; the costs incurred by the individual are his/ her forgone earnings while studying, plus any education fees and incidental expenses during schooling. However, it should be noted that food expenses are not

included here since one cannot avoid such costs whether he/she is in school or not.

In this study, in the investigation of the private cost of gaining a medical education, the researcher include the full cost of room and boarding expense, 15% of the total instructional cost that student are required to cover after graduation and employment, the costs of forgone wage in the period of schooling and other education related and incidental expenses.

Benefit; the private benefits amounts to a salary a medical educated individual earns, after tax. In this study, the benefits considered are first the payment that the medical student receives during her/ his internship year and then the salary they earn after graduation and employment. Both earnings are net of extra tax paid.

3. Data Description and Analysis

On the basis of empirical data, the results of the analysis are discussed in this chapter. It presents the major findings of the study. It has five main sections. The first section is all about introduction. The second section presents the result of the estimation of the private cost that incurred because of medical education. The third section deals with the estimation of the private benefit that is related to gaining a degree of medical doctor. The fourth and the fifth section present a descriptive result of the computations of the Net Present Value (NPV) and internal rate of return (IRR) of attending medical education, respectively.

3.1 Introduction

To provide a more comprehensive estimate of rates of returns to medical education, this study employs discounted rate of return method. The application of this method needs to specify the average study length for each educational investment and the associated direct as well the opportunity costs and other expenses incurred during the study period, and the life time earnings of physicians.

Following the average answers of the questionnaire that the respondents, the medical students filled, the basic scenario of investment in a bachelor degree of medical education is defined as the cohort of 18 years old that has completed high school education and has three choices of career paths; to undertake 6 years university medical education between 2015 and 2020 and commence employment at age

24 in 2021, commence employment in 2015 at age 18 with education attainment of high school completion and to join other education stream that require 3 to 4 years study.

In order to calculate the discounted rate of return to a university medical degree (that is, to put the equations in chapter 3 into practice) it is necessary to be more precise about how to calculate costs and benefits, and to make some assumptions about future outcomes for an individual who has completed high school for the situations where that individual does and does not choose to acquire a medical degree. The set of issues regarding the cash flows associated with investment in a medical bachelor degree and assumptions relevant to the private rate of return are;

1. The income flows after completion of the education are projected by current age-earnings profiles of people with bachelor degree in medicine. The forgone incomes are also projected by current age–earnings profiles of people who have completed preparatory education but without any post-school qualifications.
2. The medical degree takes six years full time to complete and during this period the representative student does not participate in the labor market.
3. Education generates not only higher earnings but also improves the prospect of finding an employment. Unemployment typically falls with higher levels of education. Thus, it is assumed that no physician took any time off in between medical school graduation, and the beginning of professional practice.
4. Finally, the researcher assumed that the median salary for physicians, medical school tuitions and other expenses, taxation rates, and average starting salaries for high graduates remain unchanged throughout the time series.

3.2 Private Cost

In this section, an attempt is made to estimate the total private cost to medical education. In calculating the investment costs for the individual (private side), two main costs are typically driving the overall costs: indirect costs (foregone earnings) and the direct costs for education. The direct cost for education hinges on the private expenditure per year and the length of education. Similarly, foregone earnings depend on the level of earnings that one could receive if not in school and the duration

of studies. Thus, in this study, in investigating the costs of medical school, both direct and indirect costs are estimated. Under the direct cost tuition, room and boarding covers a larger portion of private expenditure. To estimate these expenses, the researcher used an AAU, FoM cost sharing form that the students filled up in April 2015. And the total found to be 3150.51 birr annually per individual medical student. It should be noted that since the cost sharing regulation (FDRE, 2003), required students to share only a 15% of the total instructional cost, this number only include the 15% tuition fee. In order to accurately assess the full cost, the opportunity costs of forgone wages that one incur by attending medical school, which is indirect cost must be included. It is approximated by the average starting salary of a class of 2014 preparatory graduates. Based on the new civil servants salary scale, the estimation finds this number to be 9,756 birr per year. This equates to 8862.60 birr after tax for a single individual filling in the 2015 fiscal year. However, this number doesn't assume any annual wage growth rate.

And other costs such as incidental and other education related (i.e. for copy and for books) costs are also estimated based on the information that the medical students provided on the collected questionnaires. Accordingly, the average cost found to be 5,500 birr for each individual annually. Now there is enough information to calculate the total costs of students during the study year of medical school. It costs individuals totally 17,513.11 birr per year. Table 1, presents estimates of private rates of return for 18 years old cohort that choose to undertake an investment in a medical bachelor degree upon completing preparatory school in 2014.

Table 1: Private Monetary Costs of Medical Education

Cost type	**Cost per year**	**Total cost (for 6-years study)**
Indirect cost	**8862. 60**	**53,175.60**
Forgone cost	8862. 60	53,175.60
Direct cost	**3150.51**	**18,903.06**
Tuition fee	2490.51	14,943.03
Room and boarding expense	660	3960
Other living and incidental costs	5500	**33,000**
Total	**17,513.11**	**105,078.66**

Source: own computation based on data from cost sharing form that AAU medical students filled out in April, 2015

3.3 Private Benefits

The benefit from education can be decomposed into three components: the wage benefit, defined as the increase in wages entailed by an additional year of schooling and holding constant the employment probability; the employability benefit, given by the increase of the employment probability associated with an additional year of schooling, and holding wage constant; and the pension benefit, i.e. the discounted value of higher retirement benefits due to higher lifetime labor earnings resulting from an additional year of schooling. However this study is more concerned with the wage benefit part. In calculating the private wage benefit of medical education, in addition to the physicians' future life time earning streams, the study also consider the payment that the medical students paid during their internship year. All estimates were made using reported wages (before tax wage) and for the study purposes the researcher compute after tax wages applying to those the income that should be paid. Table 2 presents monthly base salary, the ceiling as well as the median salary and standard deviation for physicians. The post tax salaries are determined by assuming the current tax rates that is specified under the proclamation no.286/2002. All salary data comes from MywageEthiopia.com. Mywage.org/ Ethiopia is connected to the international wage indicator network.

Table 2: Salary Figure of Health Professionals

Grade	Base salary	Ceiling	Median salary	Standard deviation	Post-tax median salary
I	2250	3562	2858	927.7241	2378.5
II	2602	4018	3267	1001.263	2685.25
III	2989	4495	3711	1064.903	3010.2
IV	3414	4988	4174	1112.986	3334.3
V	3863	5504	4657	1160.362	3672.4
VI	4334	6049	5158	1212.688	4015.2
VII	4820	6610	5686	1265.721	4358.4
VIII	5328	7202	6231	1325.118	4712.65
IX	5868	7832	6802	1388.758	5083.8
X	6418	8500	7411	1472.196	5479.65
XI	6999	9207	8052	1561.292	5896.3
XII	7619	9973	8730	1664.529	6337

Source: Mywage.Org/Ethiopia

To produce a physician's revenue stream, the study assumed a life time labor earning equal to the median grade salary as presented by table 4.3. This helps to capture any real age-related growth rate for physicians.

Table 3: Salary of Health Professionals

Median grade salary	***Monthly earning***	***Annual earning***
Base salary	4577	54,924
Ceiling salary	6329.5	75,954
Median salary	5422	65,064
Post-tax salary	4186.8	50,241.60

Source: own computation based on the data from Mywage.Org/Ethiopia

In addition, during their internship training program, medical students at AAU, FoM earn 2,476.75 birr after-tax for one year. Totally, the private benefit of obtaining a degree of medical doctor equates 1,961,899.15 birr per year.

3.4 Net Present Value (NPV)

Using estimated benefit and cots for acquiring degree of doctor of medicine, the NPV is calculated. The proper method to estimate NPV of medical education is to compute the *difference* between the present value of lifetime benefit attributable to a medical education graduate and the present value of direct and indirect costs attributable to a medical student.

To estimate the NPV, first in order to to account for the time-value of money, the cash flows that will occur in the "future" and in different point of time as the individual progresses in his or her working life are discounted back. Discounting all cash flow streams (costs and benefits) back to the start of the investment means that we have all components in the same unit.

Present Value of Cost (PVC)

During the study period, that is when t is equal to 1, 2, 3, 4, 5 and 6, since the medical education requires 6 years study, the present value of total cost is given by;

$$PVC = \sum_{t=1}^{6} \frac{C_t}{(1+r)^t}$$

The PV is calculated using discount rates of r=5% and r=10% and by assuming the point of view of a 18 years old high school graduate in base year 2014.

Thus, the total present value of cost of obtaining degree of medical doctor is 88,891.15 and 76,274.15 birr at 5 and 10% discount rate respectively.

Present Value of Benefit (PVB)

While it may sound impressive to talk about a million dollars in additional lifetime earnings, one must recognize that future birr are worth less than current birr. Now the two benefits, the payment that the medical students paid during their internship year and the physicians' future work life earning stream discounted. Thus, the PVB is determined by;

$$\frac{B_{IS}}{(1+r)^6} + \sum_{t=7}^{63-18} \frac{B_t}{(1+r)^t} = \frac{B_{I6}}{(1+r)^6} + \sum_{t=7}^{45} \frac{B_t}{(1+r)^t} = PVB$$

B_I represents the benefit that the students earn during their internship year.

The total present value of benefit amounts to 639,834.95 and 278,105.99 birr at 5 and 10% discount rate respectively. Table 4 shows Net Present Value of obtaining degree of medical doctor based on the above calculated present costs and benefits values.

Table 4: NPV of Medical Education

	Present Value	
	At 5%	**At 10%**
Cost	88,891.15	76,274.15
Benefit	639,834.95	278,105.99
NPV	550,943.80	218,019.40

Source; own computation

This implies that, a student who begin attending medical education in 2015 and studies for six years, rewards with total net revenue of 639,834.95, over his/ her working lifetime in value of present birr, if the rate at which the future value is discounted to present is 5%. If the rate is 10% he enjoys the total net gain earnings of 278,105.99 birr.

The positive net present values in table 3 indicate that the value of revenue exceed the costs that an individual student incurred at medical school. Therefore, investment in medical education, on average, is worthwhile. But the results do not consider earning differential due to ability, good luck and other personal characteristics.

3.5 Internal Rate of Return (IRR)

As the streams of costs and returns of medical education are estimated in the previous sections, we are now ready to compute the internal rate of return to this type of education.

As noted earlier, the internal rate of return (IRR) indicates at what real interest rate the investment breaks even. Thus, the rate of return to investment in a medical education is the discount rate that equates the present value of costs to the present value of future income gains of obtaining a university degree of medical doctor.

Since medical education requires six years of study and the official retirement age is 63, the equation to be used here is;

$$\frac{C_1}{(1+r)^1}+\frac{C_2}{(1+r)^2}+\cdots+\frac{C_6}{(1+r)^6} = \frac{B_{16}}{(1+r)^{16}}+\frac{B_7}{(1+r)^7}+\cdots+\frac{B_{45}}{(1+r)^{45}}$$

This can be rewritten as:

$$\sum_{t=1}^{6}\frac{C_t}{(1+r)^t}=\frac{B_{16}}{(1+r)^6}+\sum_{t=7}^{45}\frac{B_t}{(1+r)^t}$$

The computation result shows that in 2014 the investment in medical education had a private internal rate of return around 25.5% which is, is somewhat higher return than other literature in developed world indicated and other international comparisons.

This indicates that at 25.5% discount rate, a physicians' investment in medical education makes more money than its actual cost and at this rate the cost that a medical student, who began studying medicine in 2015, incurred for six years equal his/ her working lifetime earnings.

Here, it is important to note that, computation results of IRR are very sensitive to returns and costs at early stages.

4 Summary and Conclusion

Strong health systems are central to the attainment of health equity. In Ethiopia, lack of human resources is a key obstacle to the attainment of strong health systems. Ethiopia needs a pool of highly trained health workforce especially medical doctors, in order to address the challenge above and provide a team approach to provision on quality care. While ensuring a quality of medical education and relevance of strong medical schools, doctors must earn enough revenue to justify the expenses of medical school.

Given the importance and the expensiveness of medical education, the main focus of this study has been on assessing the economic returns to medical education in Ethiopia. The discounting rate of return method was employed to assess the above objective. Two measures of discounted return to medical education were used, the internal rate of return and the net present value. The empirical results on the net present value of medical education suggest that, under a 5% discount rate, on average physicians enjoys a net present value of 88,891.15 birr on their investments in medical school. The results also indicate that, they still find a net present value of 76,274.15 birr with a 10% discount rate. Turning to the internal rate of return, the researcher finds 25.5% estimated return to medical education.

Therefore, the foregoing discussion has shown that even though it is very expensive, Medical education remains a very sound and worthwhile investment from private point of view. Becoming a physician is, of course, a monumental decision. One should consider much more than financial incentives before deciding to pursue a career in medicine. The road to the medical community is long, personally demanding, and intellectually challenging. Evidence in this paper shows, however, that if you decide to attend medical school and are if you are lucky enough to gain acceptance to medical school, you will be rewarded significantly over the long run.

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