

Estimating Rate of Return to Education in a High Level Income Petroleum Based Economy Country

Humoud A. Alqattan

There is much value to education; otherwise, why are huge amounts of money spent annually on education around the world? Both countries and individuals who expend such expense must expect a benefit in return. Schultz (1961a, 1961b) introduced the concept of investment in human capital to explain most of the growth puzzle. Becker (1964) & Mincer (1974) modeled the concept of investment in human capital and the measurement of its value. The basic theory underpinning human capital is very simple, the formation of human capital entails the sacrifice of resources today for the sake of a stream of benefits in the future (Psacharopoulos & Patrinos 2004). The researcher estimates a Mincer type earnings function focusing on the private return to education. This paper estimates the rate of return to education for Kuwaiti males and females in 2010 for Data from Kuwait Civil Service Commission for total of 195,027 Kuwaitis employees. The results in the regression model show a positive and economically significant parameter coefficient for education and negative returns to coefficient for more experience. The estimated rate of return for females is relatively higher than males. The average estimated return to education is 4.8%; the estimated return for females 5.7%; for males 5.1%.

Keywords: Kuwait Education, rate of return to education (RORE), Mincer equation, earning equation.

1. Introduction

Education has values for both social (public) and private (individual) economists who traditionally use the rate of return to education (RORE) to understand household decisions, and to assist the education policy makers in the planning stage. A positive RORE encourages the household investment in education because they may desire to exceed the returns from an alternative investment.

Makdsi et al. (2000) reported that in terms of investment and expending on education the Arab counties have made far more as compared to other developing nations, and as far as improvement in various educational disciplines, like enrollment of students and overall literacy is concerned, the Arab countries are still far behind developing nations, which means require more studies to catch more payback from their investments. The thrust of this paper is that there is a lack of information regarding estimating rate of return to education in low and high income developing countries, such as Kuwait and most of the research did not accurately differentiate between low and high income developing nations as mentioned above where the word bank classified the countries

* Ph.D. Student, Brunel University, London, School of Information Systems, Computing and Mathematics, h_alqattan@yahoo.com, Humoud.Al-Qattan@brunel.ac.uk

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based on income see Appendix A.1. The available information relating to education return in Kuwait is currently rather limited, and according to Psachropoulos and Patrinos (2004), more research on the benefits of schooling is needed for developing countries. Furthermore, there is a need for more evidence to study the impact of education and experience on earnings. This paper seeks to expand our knowledge in two ways. First, present an estimate of the returns to education in a high-level income petroleum-based economy country, male and female, individual data 2010 for case of Kuwait. Second, the paper sheds light on the impact of increased experience on earnings.

Literature review presented in section 2; Kuwait background presented in section 3; the modeling approach that researcher chose to take a modified Mincer earning function; where it is briefly explained in section 4 and 5 together, with detailed data description taken from Kuwait Civil Service Commission; the results of the estimating RORE are presented in section 6; summary and conclusions presented in section 7.

2. Literature Review

Education is responsible for increasing labor productivity and their earnings but still remains to be seen as an investment in human capital which can be made useful human beings in different disciplines of life. According to Adam Smith's (1776/1976) classical inquiry in to the nature and causes of wealth of nations: " A man at the expense of much labor and time to any of those employments which require extraordinary dexterity and skill, may be compared to an expensive machine. The work which he learns to perform must be expected over and above education with at least the ordinary profits of an equally valuable capital" and in his principal of economics, Alfred Marshall (1890/1922) stated that: "The most valuable capital is that invested in human beings". Economists Theodore W. Schultz, Gary S. Becker and Jacob Mincer developed the theory of human capital during the second half of twentieth century and provided economists with a better understanding of the importance of human capital.

When an individual acquires an education by attending a formal school, it lessens the probability of unemployment and being on social welfare, it also brightens his chances of finding employment with higher wages in the labor market as well as settling down in a happy marriage and leading a healthy prosperous life. Formal schooling promotes logical thinking and patience to wait for the right opportunities. It reduces criminal activities like robberies, thefts and other violent crimes. Education can teach individual simple tasks like how to enjoy a good book to more advanced tasks like finance management and some may say that education has helped them become a productive member of the society (Oreopoulos & Salvanes, 2009).

Becker (1993) argues that the skills and experience of a worker increases that particular worker's output, thus increasing his/her value to the employer. Therefore, the wage a worker is paid is not only compensation for the time a person spends working for the firm, but also compensation for the use of an individual's human capital during the time spent working; the human capital is 'rented' to the employer during this time. Both human capital and higher education have their advantages for individuals and collective

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societies. When years of schooling, learning and experience of a worker are increased it has a positive effect on the wages of the individuals.

Pereira & Martins (2004) believes that education, is one of the many investment decisions motivated by the fact that the investment yields a choice that one would not otherwise have. Part of the return to the investment is to be found in the set of options that emerges. For instance, when an individual decides upon the level of education to be attained it is believed that such academic qualification will lead to a better-paid job that qualification will also extend the number of options in other matters as well as, the sector and/or specific firm where the individual will be employed. Part of the individual's return to education will thus be the return to subsequent choices or choices that are available only after qualification is obtained.

Schultz (1961a, 1961b) introduced the concept of investment in human capital to explain most of the growth puzzle. Becker (1964) and Mincer (1974) modeled the concept of investment in human capital and the measurement of its value. The basic theory underpinning human capital is very simple, the formation of human capital entails the sacrifice of resources today for the sake of a stream of benefits in the future (Psacharopoulos & Patrinos 2004). Powdthavee's & Vignoles's (2006) study of the human capital theory reveals that when an individual invests his/her time and money in education in the long run, they make themselves more valuable and productive in the labor market. This provides an indication that the labor market is based on competition and the wages of an individual are directly associated with his/her productivity; any achievement in productivity will lead to higher earnings for that individual.

There is a broad agreement that human capital is an important determinant of economic success of individuals, firms and economic performance of nations. The transformation of the economy into a production further increases this importance. This approaching has led several nations to increase their educational budgets and has put the question of how to spend educational resources in a cost-effective way. In rate of return analyses, education is analyzed as an investment, which involves individuals and the nations incurring costs now (lost income or direct costs of tuition), in order to harvest gains in the future (higher income for individuals and economic growth for nations).

3. The Methodology and Model

Before we proceed further, let us briefly review the Kuwait education system and labor market which will facilitate a better understanding of the results of this paper. Since the focus of this paper is on the laborers that have graduated from Kuwait schools, this review has been confined to Kuwaiti employees only. All the employees in 2010 graduated from Kuwait and studied in the education system which shown in Figure 3.1.

The education system in Kuwait, up to 2004/05, offered many different pathways to meet the various needs of young people. General education begins with Kindergarten for 4 to 5 year-olds and progresses through Primary (4 grades), Intermediate (4 grades), and Secondary (4 grades). General education is provided in public schools, Arabic private and religious schools. International private schools offer courses based on the curriculum of their country. Other programs of education are available in schools of

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special needs education, such as adult and literacy education. Public Vocational training is offered in PAAET (Public Authority of Applied Education and Training) and Tertiary education is offered at Kuwait University, and the Institute of Arts and Music studies. The Ministry of Higher Education licensed new private higher education universities such as the American University of Kuwait, Gulf University for Science and Technology, and Kuwait Maastricht Business School. A map of the education opportunities available to young people in Kuwait is shown in Figure 3.1

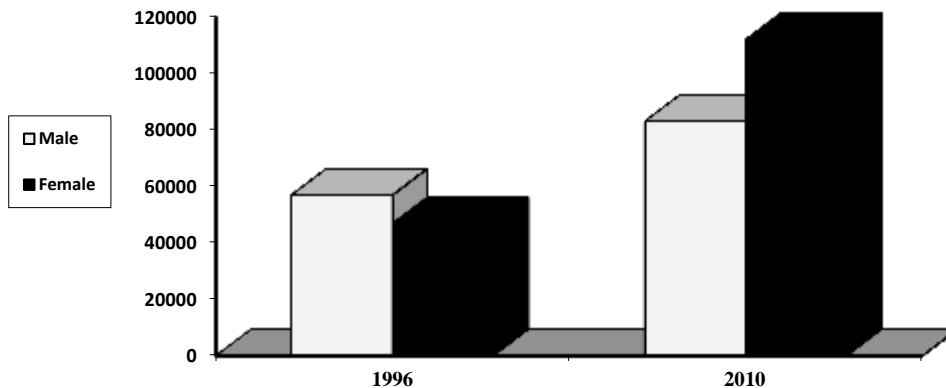
Figure 3.1 Education opportunities for 4 to 21 year-old students

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
GENERAL EDUCATION																	
Kindergarten		Primary			Intermediate			Secondary			Post-Secondary						
Public schools																	
Arabic Private schools																	
International Private schools																	
OTHER TYPES OF EDUCATION																	
Religious education																	
Adult and Literacy Education																	
Special Needs education																	
VOCATIONAL AND TERTIARY EDUCATION																	
Vocational and Training (PAAET)																	
Kuwait																	
OTHER DESTINATION																	
Police Academy/ Police / Military School																	
Study Abroad																	

Source: Education Indicators in the State of Kuwait, 2007

map in Figure 3.1 shows the typical age at which study at each level is intended (the official age of entry to Primary school is 5 years, 6 months or older on the 15th of September). From 2010 labor force data showed that more than 90 percent of Kuwaiti laborers are employed in the public sector, only a few of Kuwaitis work in the private sector, and around 60 percent of the public sector consists of Kuwaitis. Approximately 57 percent of Kuwaitis laborers are female; while males constitute 43 percent. In 1996, Kuwaiti laborers consisted of 55 percent males and 45 percent females, as shown in Figure 3.2.

Figure 3.2 Kuwait's male/female labor force.



Source: Ministry of Planning, 1996 & Kuwait Civil Service Commission, 2010.

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The data for this research is drawn from the Kuwait Civil Service Commission and the General Secretariat of the Supreme Council for Planning and Development database. The Civil Service Commission database comprises 43 ministries and administrations, and covers about 95 percent of all public sector employees. Since more than 90 percent of Kuwaiti labor is employed in the public sector, this data covers approximately 90 percent of the total Kuwaitis employed where, the rest of employees either in petroleum sector or in private sector which are not cover in the research data. The Civil Service Commission data has 195,027 Kuwaitis employees which are distributed as 83,044 male and 111,983 female. We have used the data from the year 2010 for this research, which is the most recent data available.

In this study, the researcher uses only three variables: earnings, years of schooling, and years of experience. The dependant variable is the log of monthly earnings that includes the basic salary and social allowance (which presents part of the total salary that depends on the individual's marital status) which is a significant part of the total earnings, for instance; A.2 Appendix for the government's pay scales shows for lower grades social allowances are more than the basic salary. There are built-in differences in the allowances for married/unmarried, and male/female employees. Therefore, an argument could be made in favor of using the basic salary as the dependant variable rather than total earnings. However, we chose total earnings as (basic salary + social allowance) because rates of social allowances are tied to various grades, and the grades are tied to education and experience and because of the significant position of the social allowance, it is viewed as part of the return to human capital. Two independent variables are used in this study, namely, education and experience. The latter has been taken directly from the database without any adjustment. In the database, education is reported in terms of academic qualifications rather than years of schooling. Academic qualifications are converted into a reasonably average estimate of years of schooling. In the previous (showed in fig.3.1) education system of Kuwait, 4 years of full-time schooling is termed as Primary; 8 years of full-time schooling is termed as Intermediate, and Secondary school is equivalent to 12 years of schooling. There are a number of post-high school diplomas that require 12 years of schooling, and a post university diploma that requires 16 years of schooling. The B.A/B.Sc degree is equivalent to 16 years, the M.A/M.Sc. degree ranges between 18 and 21 years of schooling, and the PhD degree between 22 and 23 years of education. This information, which is available in more detail than reported here, has been used to convert academic qualifications into number of years of schooling as in Table 3.1.

Table 3.1: Converts the variables into reasonable figures for estimates.

Sex = 1 if male, 0 female
Place of qualification = 1 if Kuwait, 0 otherwise
Nationality = 1 if Kuwaiti, 0 otherwise
years of education: 4 ≈ Primary and elementary courses on Applied, 8 ≈ Intermediate and intermediate courses of the Applied, 12 ≈ High school or equivalent, 14 ≈ Diploma, 16 ≈ University, 20 ≈ Master or PhD.

Source: Author's, 2010

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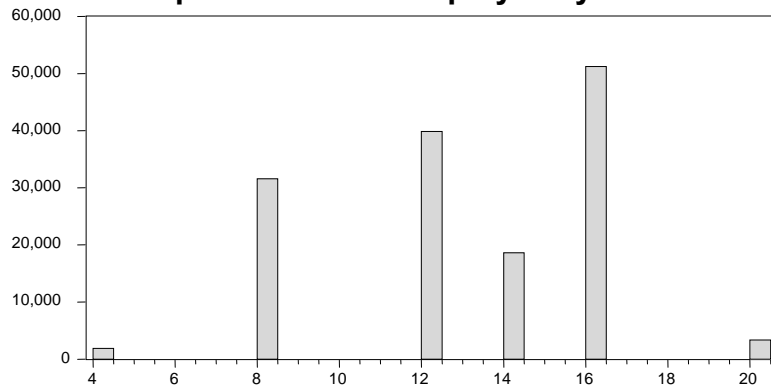
The research focusing only on public sectors employees and graduated from Kuwait therefore, the illiterate employees not included. The mean, median, maximum, minimum, standard deviation, and other statistical variables for the sample data are reported in the Table 3.2 and histogram graph for earnings (basic salary + social allowance), years of schooling and years of experience are shown in Figure 3.3.

Table 3.2: Kuwaiti male/female statistical data

All	Years of Schooling	Years of Experience	Wage
Mean	12.86	12.59	568.86
Median	12	11	543
Maximum	20	55	3762
Minimum	4	0	226
Std. Dev.	3.33	7.60	195.43
Skewness	-0.403	0.73	2.66
Kurtosis	2.40	3.0	18.50
Jarque-Bera	6204.705	13001.63	1637514
Probability	0	0	0
Sum	1885438	1.84E+06	83337781
Sum Sq. Dev.	1624462	8.45E+06	5.60E+09
Observations	146499	146499	146499

Calculated by Author's, 2010

Figure 3.3.a: Kuwait's public sectors employees years of schooling



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Figure 3.3.b: Kuwait's public sectors employees years of experince

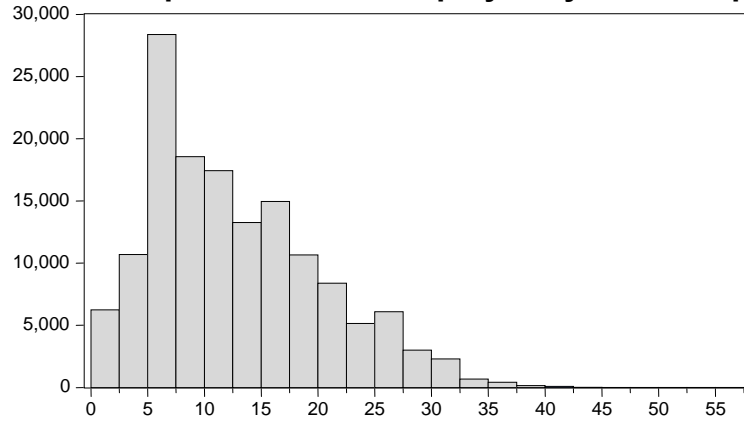
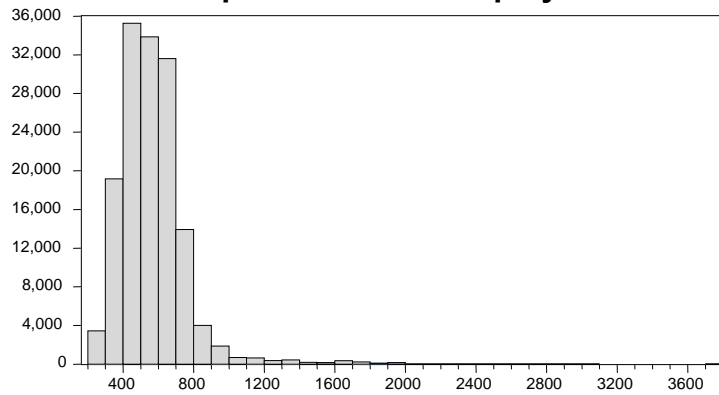


Figure 3.3.c: Kuwait's public sectors employees earnings.



The mean, median, maximum, minimum, standard deviation and other statistical variables for female data are reported in Table 3.3 and histogram graph for earnings (basic salary + social allowance), years of schooling and years of experience are shown in Figure 3.4.

Table 3.3: Kuwaitis Female statistical data

Female	Years of Schooling	Years of Experience	Wage
Mean	13.61	11.19	533.0465
Median	14	10	523
Maximum	20	53	2875
Minimum	4	0	226
Std. Dev.	2.89	6.45	152.86
Skewness	-0.69	0.93	2.403
Kurtosis	2.94	3.76	20.164
Jarque-Bera	6610.396	13995.50	1104654
Probability	0	0	0
Sum	1135516	933488	44481667
Sum Sq. Dev.	6.95E+05	3.48E+06	1.95E+09
Observations	83448	83448	83448

Source: Author's, 2010

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Figure 3.4.a: Kuwait's public sectors female employees years of schooling

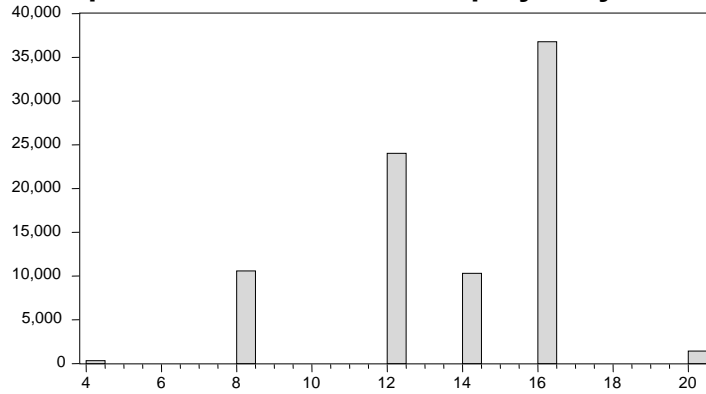


Figure 3.4.b: Kuwait's public sectors female employees years of experience

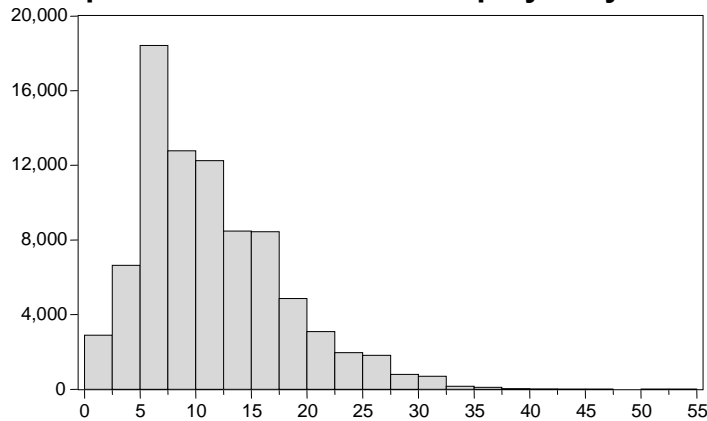
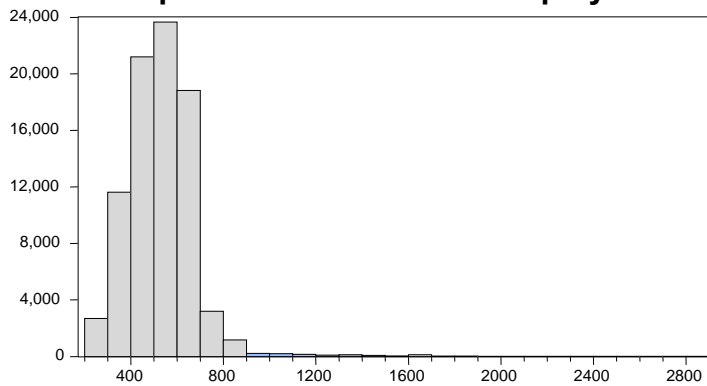


Figure 3.4.c: Kuwait's public female sectors employees earnings.



The mean, median, maximum, minimum, standard deviation and other statistical variables for male data are reported in the Table 3.5 and histogram graph for earnings (basic salary + social allowance), level of qualification and years of experience are shown in Figure 3.5.

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Table 3.5: Kuwaiti male statistical data

Male	Years of Schooling	Years of Experience	Wage
Mean	11.89	14.45	616.265
Median	12	14	588
Maximum	20	55	3762
Minimum	4	0	226
Std. Dev.	3.61	8.54	232.105
Skewness	0.032	0.379	2.43
Kurtosis	2.189	2.35	14.82
Jarque-Bera	1.74E+03	2606.272	428826.3
Probability	0	0	0
Sum	749922	9.11E+05	38856114
Sum Sq. Dev.	823518.2	4.59E+06	3.40E+09
Observations	63051	63051	63051

Source: Author's, 2010

Figure 3.5.a: Kuwait's public male sectors employees years of schooling

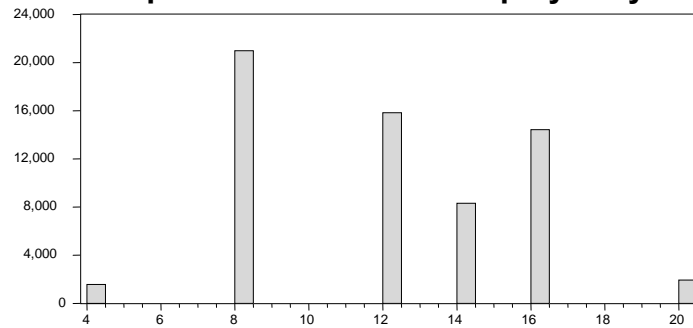


Figure 3.5.b: Kuwait's public male sectors employees years of experience

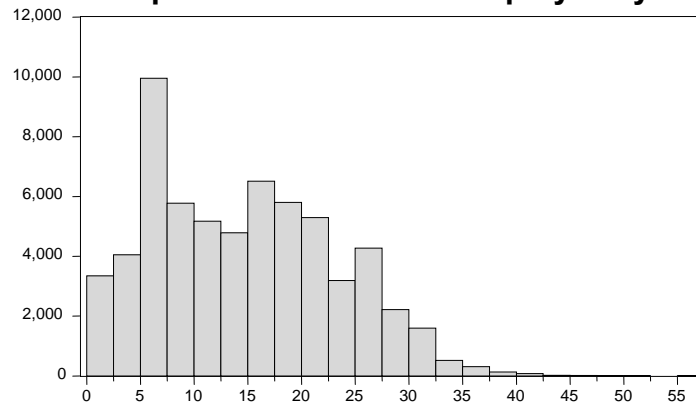
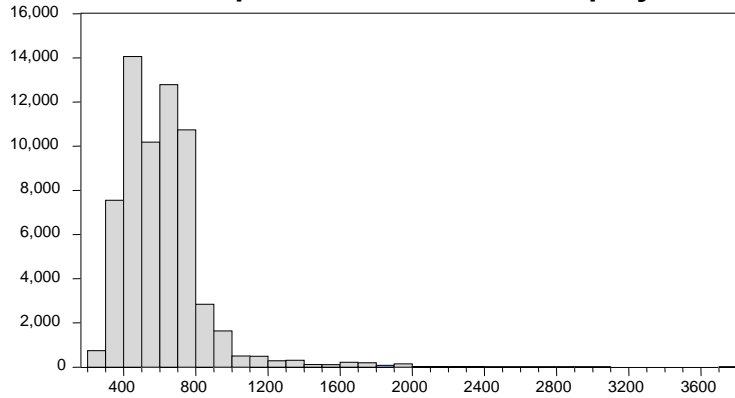
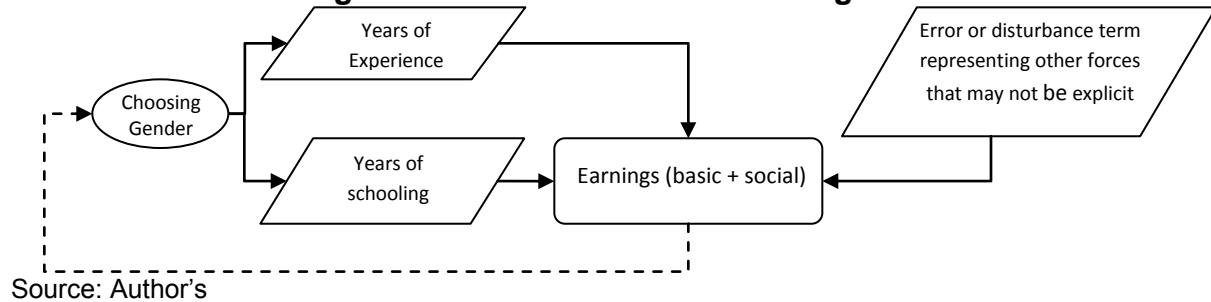


Figure 3.5.c: Kuwait's public male sectors employees earnings.



The mean earnings (basic salary + social allowance) of women are lower than those of men, whereas the mean years of schooling for women are higher than those of men. The significant differences between the averages of male and female employees' earnings, education, and experience imply a pooling of male and female data that would obscure important differences in their effects on the return to education. Therefore, we have performed our analyses separately for male and female employees in order to estimate the rate of return to education for both genders. The human capital model of Becker (1962) and Mincer (1974) has been the method used for the study presented in this paper. The Mincerian earning functions have been well applied to individual countries' data, with the semi-logarithm specifications being very robust in empirical studies. Figure 3.6 briefly reviews and explains the Mincerian earnings model.

Figure 3.6 Illustration of the Earning model.



Mincer (1974) used the first human capital model that was basically focused on the earning function as shown in eq.1

$$\ln W_i = \alpha + \beta S_i + \gamma_1 X_i + \gamma_2 X_i^2 + u_i \dots \dots \dots (eq.1)$$

Where:

Ln W: is natural log for wage (basic and social in our research).

S: is years of schooling.

X: is years of experience.

u_i : is the random error that captures the other variables that have an impact on earnings, but unobservable factors that excluded from model.

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We realized here that β is the coefficient for the years of schooling i.e. the effect of a year of education on wages, which is the return for each year of education providing the only costs of education are opportunity costs of the forgone earnings.

Optimal investment decision-making would imply that one would invest in the S^{th} years of schooling if $\beta > i$, the market rate of interest. Subsequent to the above regression, and to estimate the proportion of the variance in earnings that are attributable to human capital, we regressed separate regressions of earnings on schooling for various experience groups of 146,499 Kuwaitis (83,448 female; 63,051 male) who received their qualifications from Kuwait public/private schools/universities out of 195,027 Kuwaiti employees; following the approach of Mincer (1974), Psacharopoulos & Layard (1979). Before Applying the model, It is interesting to study the nature of the relationship between the three variables in our model, or to be more precise, how the value of one variable changes when the value of another variable changes. The way we express this interest is through the computation of a correlation coefficient. There are different types of correlation coefficients that measure the relationship between variables, because there are three variables in our case; Earnings, Years of schooling and Years of experience we are going to use the Correlation Matrix. Table 3.6 shows for each pair there is a correlation coefficient, the correlation between Years of schooling and Years of experience is -0.03; the correlation between Years of schooling and Earnings is 0.45. Finally, the correlation between Years of Experience and Earnings is 0.61.

Table 3.6: SMPL@ Kuwaitis employees received their qualification from Kuwait = 146499 out of 195,027

	YEARS OF SCHOOLING	YEARS OF EXPERIENCE	EARNINGS
YEARS OF SCHOOLING	1	-0.03	0.45
YEARS OF EXPERIENCE	-0.03	1	0.61
EARNINGS	0.45	0.61	1

Source: Author's calculations

From the table 3.6 the results shows a weak negative\indirect correlation between Years of schooling and Years of experience, also a moderate positive\direct correlation between Years of schooling and Earnings, on the other hand a strong positive\direct correlation between Years of Experience and Earnings; meaning that the more years of experience the less years of schooling. Furthermore, the impact of more years of experience on earnings is exceeding the impact of years of schooling on earnings.

4. Results

Applying the regression model (eq.1) by regressing a natural log of earnings on the number of years of schooling, the number of years of experience, and its square term, for the all data using the least square method by the Eviews software package.

The resulted estimated regression model is as follows:

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Estimation Equation:

$$\text{LOG (BASIC+SOCIAL)} = C(1) + C(2)*\text{YEARS_S} + C(3)*\text{YEARS_X} + C(4)*(\text{YEARS_X})^2$$

Kuwaiti employees who received their qualifications from Kuwait, the average regression model estimation for 146,499 out of 195,027 male and female employees reported in Table 4.1 shows a negative sign for the square term which proves the impact of over-experience. The rate of return to schooling is 4.8 percent the corresponding t-value and R² are highly significant.

Substituted Coefficients:

$$\text{LOG (BASIC+SOCIAL)} = 5.31 + \underset{(0.00)}{0.048*\text{YEARS_S}} + \underset{(0.00)}{0.033*\text{YEARS_X}} - \underset{(0.00)}{0.000198*(\text{YEARS_X})^2}$$

R² = 0.715 is highly significant and showed that the independent variables explained more than 70% of the dependant variable. To be confident that OLS would be the best-fit, unbiased and efficient estimate for data we have to test to assumptions, first the autocorrelation; second the heteroscedasticity. Because it is a cross sectional data the violation of Autocorrelation assumption not exist and irrelevant to test; the second assumption checked by using Breusch- Pagan-Godfrey to test Heteroscedasticity the P=0.00 which means the Heteroscedasticity not applicable for the given individual data structure therefore the data Homoscedasticity.

Table 4.1: The average regression model estimation
Method: Least Squares
Included observations: 146499

Variable	Coefficient t	Std. Error	t-Statistic	Prob.
C	5.31	0.002	2555.63	0.0000
YEARS_S	0.048	0.000126	384.07	0.0000
YEARS_EX	0.033	0.000192	168.94	0.0000
(YEARS_EX)^2	-0.0002	6.00E-06	-33.12038	0.0000
R-squared	0.715	Mean dependent vary		6.30
Adjusted R-squared	0.715	S.D. dependent var		0.301
S.E. of regression	0.16	Akaike info criterion		-0.821
Sum squared resid	3771.812	Schwarz criterion		-0.821
Log likelihood	60180.77	Hannan-Quinn criter.		-0.821
F-statistic	122402.9	Durbin-Watson stat		1.506
Prob(F-statistic)	0.000000			

Source: Author's calculations

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Table 4.2: Comparison between RORE in Kuwait with High & Low-Income Countries

Country	Year	Average Private % RORE	Source
Kuwait	2010	4.8	Humoud A. & Jamal A. , 2010
High-Income Countries	2006	7.4	<i>Psacharopoulos ,1994 & Psacharopoulos & Patrinos ,2004</i>
Low-Income Countries	2006	10.9	<i>Psacharopoulos ,1994 & Psacharopoulos & Patrinos ,2004</i>

Source: Author's calculations

From Table 4.2 the results point out that the rate of return to education in Kuwait is somewhat lower than what has been found in other High Income and Low Income Countries.

Table 4.3 shows the estimation of female regression model for 83,448 female employees. The rate of return to schooling is 5.7 percent the corresponding t-value and R² are highly significant.

Substituted Coefficients:

$$\text{LOG (BASIC+SOCIAL)} = 5.13 + 0.057 \cdot \text{YEARS_S} + 0.035 \cdot \text{YEARS_X} + 0.00034 \cdot (\text{YEARS_X})^2$$

(0.00)
(0.00)
(0.00)

R² = 0.78 is highly significant

Table 4.3: The female regression model estimation

Method: Least Squares

SEX= 0 = Female

Included observations: 83448

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.13	0.002	2104.50	0.0000
YEARS_S	0.057	0.00015	383.334	0.0000
YEARS_EX	0.04	0.0002	160.3684	0.0000
(YEARS_EX)^2	-0.000339	7.45E-06	-45.50	0.0000
R-squared	0.78	Mean dependent var		6.243
Adjusted R-squared	0.78	S.D. dependent var		0.265
S.E. of regression	0.12	Akaike info criterion		-1.35
Sum squared resid	1269.901	Schwarz criterion		-1.35
Log likelihood	56219.25	Hannan-Quinn criter.		-1.35
F-statistic	100567.4	Durbin-Watson stat		1.35
Prob(F-statistic)	0.000000			

Source: Author's calculations

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Table 4.4 shows the estimation of male regression model for 63,051 male employees. The rate of return to schooling 5.1 percent the corresponding t-value and R² are highly significant.

Substituted Coefficients:

$$\text{LOG(BASIC+SOCIAL)} = 5.38 + 0.051 \cdot \text{YEARS_S} + 0.031 \cdot \text{YEARS_X} - 0.00024 \cdot (\text{YEARS_X})^2$$

(0.00)
(0.00)
(0.00)

R² = 0.73 is highly significant

Table 4.4: The male regression model estimation
Method: Least Squares
SEX= 1 = Male
Included observations: 63051

Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	5.376	0.003	1777.93	0.0000
YEARS_S	0.051	0.0002	267.80	0.0000
YEARS_EX	0.031	0.0003	109.61	0.0000
(YEARS_EX)^2	-0.000239	8.54E-06	-27.99	0.0000
R-squared	0.73	Mean dependent var		6.37
Adjusted R-squared	0.73	S.D. dependent var		0.33
S.E. of regression	0.172	Akaike info criterion		-0.68
Sum squared resid	1864.56	Schwarz criterion		-0.68
Log likelihood	21533.30	Hannan-Quinn criter.		-0.68
F-statistic	55795.98	Durbin-Watson stat		1.54
Prob(F-statistic)	0.000000			

Source: Author's calculations

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Table 4.5: Private male/female RORE cross countries

Country	Year	Private - RORE				Source
		Male %	Standard Errors	Female %	Standard Errors	
Kuwait	2010	5.1	0.000190	5.9	0.000148	<i>Humoud A. & Jamal A. , 2010</i>
<i>Developing Countries</i>						
Turkey	2005	3.26	-----	4.32	-----	<i>Fathollah B. & Orhank K. , 2005</i>
Ghana	1992	4.4	N.A	4.2	N.A	<i>Schultz ,1994</i>
Bulgaria	1995	4.9	0.0100	6.2	0.0091	<i>Colm H. et. al. ,2000</i>
<i>Developed Countries</i>						
UK	1995	12	0.0057	14	0.0069	<i>Colm H. et. al. ,2000</i>
USA	1995	7.8	0.0045	9	0.0058	<i>Colm H. et. al. ,2000</i>
Japan	1995	7.5	0.0066	9.2	0.0151	<i>Colm H. et. al. ,2000</i>

The results indicate that the rate of return to education in Kuwait is somewhat lower than what has been estimated in other developed countries and higher than what has been estimated in other developing countries. For instance, Fathollah B. & Orhank K. (2005) reported Mincer-type returns to schooling to be 3.26 percent for men and 4.32 for women in Turkey. On the other hand, most of the studies find that the rate of return on education in advanced countries to be close to 10 percent. Colm H. et. al. (2000) found it to be 7.5 percent for men and 9.2 for women in Japan.

These empirical findings raise several important questions, one of the main questions. Although, a high expenditure and investment of education in Kuwait as a case of High-Income petroleum country however it's still lagging behind developed and some of developing countries. Also, Even though the data shows high average years of education in Kuwait as a case of High-Income petroleum country but it's still not commensurate with productivity, particularly in the inflated public sector. On the other hand, while women come to be more years of schooling than men still their average earnings lower than men.

In conclusion, I believe more work to be done in support of reforming education system, need to adapt a comprehensive long-term development framework within the context of education reform, improving the education efficiency, need to focus on results by developing monitoring indicators, and attracting with increasing the participation of the private sector in the facilities of education services.

5. Summary and Conclusions

Education is one of the many investment decisions motivated by the fact that the investment yields a choice that one would not otherwise have. Part of the return to the investment is to be found in the set of options that emerge. For instance, when an individual decides upon the level of education to be attained, it is believed that such academic qualification will lead to a higher paying job. That qualification will also extend the number of options in other matters as well, such as the sector and/or specific firm

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where the individual will be employed. Part of the individual's return to education will thus be the return to subsequent choices that are available only after qualification is obtained.

In this paper we defined that, the more years of experience, the less years of schooling. Furthermore, the impact of more years of experience on earnings is exceeding the impact of years of schooling on earnings.

The main objectives of this paper were to present estimates of the returns for male and female in 2010 individual data for Kuwaitis employee and demonstrate the impact of more experience on earnings. The use of the Mincer equation in its simpler form seems to give an approximate value for the total return to education (P. Pereira & P. Martins, 2004).

An important observation is that the returns to education for women is higher than men, however, this finding is consistent with the findings of many other researchers (Duncan 1996; O'Neill & Polachek 1993; Bedi & Gaston 1997; Loury 1997). There are several possible explanations for this finding. First, the government pay scales are determined largely on the basis of the number of years of schooling with little consideration to the area of specialization. Second, the average education of women in Kuwait is higher than that of men.

There are number of future research directions. As pointed out above, the influence of education in the choice of sectors and other decisions taken after school should be taken into account when one studies the full benefits brought by education to an individual.

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Appendices A.1

APPENDIX Classification of economies by region and income, fiscal 2010

East Asia and Pacific	Latin America and the Caribbean	South Asia	High-income OECD economies
American Samoa: UMC	Argentina: UMC	Afghanistan: LIC	Australia: LIC
Cambodia: LIC	Belize: UMC	Bangladesh: LIC	Austria: LIC
China: LMC	Bolivia: UMC	Bhutan: LMC	Belgium: LMC
Fiji: UMC	Brazil: UMC	India: LMC	Canada: LMC
Indonesia: LMC	Chile: UMC	Maldives: LMC	Czech Republic: LIC
Kiribati: LMC	Colombia: UMC	Nepal: LIC	Denmark: LMC
Korea, Dem. People's Rep.: LIC	Costa Rica: UMC	Pakistan: LMC	Finland: LMC
Lao PDR: LIC	Cuba: UMC	Sri Lanka: LMC	France: LIC
Malaysia: UMC	Dominica: UMC	Sub-Saharan Africa	Germany: LIC
Marshall Islands: LMC	Dominican Republic: UMC	Angola: LMC	Greece: LIC
Micronesia, Fed. Sts.: LMC	Ecuador: LMC	Bonin: LIC	Hungary: LIC
Mongolia: UMC	El Salvador: UMC	Botswana: UMC	Iceland: LIC
Myanmar: LIC	Grenada: UMC	Burkina Faso: LIC	Ireland: LIC
Palau: UMC	Guatemala: LMC	Burundi: LIC	Italy: LIC
Papua New Guinea: LMC	Guyana: UMC	Cameroon: LIC	Japan: LIC
Philippines: LMC	Haiti: LIC	Cape Verde: LMC	Korea, Rep.: LIC
Samoa: LMC	Honduras: UMC	Central African Republic: LIC	Luxembourg: LIC
Solomon Islands: LMC	Jamaica: UMC	Chad: LIC	Netherlands: LIC
Thailand: LMC	Mexico: UMC	Comoros: LIC	New Zealand: LIC
Timor-Leste: LMC	Nicaragua: LMC	Congo, Dem. Rep.: LIC	Norway: LIC
Tonga: LMC	Panama: UMC	Congo, Rep.: LMC	Portugal: LIC
Vanuatu: LMC	Paraguay: UMC	Côte d'Ivoire: LMC	Slovak Republic: LIC
Vietnam: LIC	Peru: UMC	Eritrea: LIC	Spain: LIC
Europe and Central Asia	St. Kitts and Nevis: UMC	Ethiopia: LIC	Sweden: LIC
Albania: LMC	St. Lucia: UMC	Gabon: UMC	Switzerland: LIC
Armenia: LMC	St. Vincent and the Grenadines: UMC	Gambia, The: LIC	United Kingdom: LIC
Azerbaijan: LMC	Suriname: UMC	Ghana: LIC	United States: LIC
Belarus: UMC	Uruguay: UMC	Guinea: LIC	Other high-income economies
Bosnia and Herzegovina: UMC	Venezuela, R. B. de: UMC	Guinea-Bissau: LIC	Andorra: LIC
Bulgaria: UMC	Middle East and North Africa	Kenya: LIC	Antigua and Barbuda: LIC
Georgia: LMC	Algeria: UMC	Lesotho: LIC	Aruba: LIC
Kazakhstan: UMC	Djibouti: LMC	Madagascar: LIC	Bahamas, The: LIC
Kosovo: LMC	Egypt, Arab Rep.: LMC	Malawi: LIC	Bahrain: LIC
Kyrgyz Republic: LIC	Iran, Islamic Rep.: LMC	Mali: LIC	Barbados: LIC
Latvia: UMC	Iraq: LMC	Mauritania: LIC	Bermuda: UMC
Lithuania: UMC	Jordan: LMC	Mauritius: UMC	Brunei Darussalam: UMC
Macedonia, FYR: UMC	Lebanon: UMC	Mayotte: UMC	Cayman Islands: LIC
Moldova: LMC	Libya: UMC	Mozambique: UMC	Channel Islands: LIC
Montenegro: UMC	Morocco: LMC	Niger: LIC	Croatia: LIC
Poland: UMC	Syrian Arab Rep.: LMC	Nigeria: LMC	Cyprus: LIC
Romania: UMC	Tunisia: LMC	Rwanda: LIC	Equatorial Guinea: LIC
Russian Federation: UMC	West Bank and Gaza: LMC	Sao Tomé and Príncipe: LIC	Estonia: LIC
Serbia: UMC	Yemen, Rep.: LIC	Senegal: LIC	Faeroe Islands: LIC
Tajikistan: LIC		Seychelles: UMC	French Polynesia: LIC
Turkey: UMC		Sierra Leone: LIC	Greenland: LIC
Turkmenistan: LMC		Somalia: LIC	Gusam: LIC
Ukraine: LMC		South Africa: UMC	Hong Kong, China: LIC
Uzbekistan: LIC		Sudan: LMC	Isle of Man: LIC
		Swaziland: LMC	Israel: LIC
		Tanzania: LIC	Kuwait: LIC
		Togo: LIC	Liechtenstein: LIC
		Uganda: LIC	Macao, China: LIC
		Zambia: LIC	Malta: LIC
		Zimbabwe: LIC	Monaco: LIC
			Netherlands Antilles: LIC
			New Caledonia: LIC
			Northern Mariana Islands: LIC
			Oman: LIC
			Puerto Rico: LIC
			Qatar: LIC
			San Marino: LIC
			Saudi Arabia: LIC
			Singapore: LIC
			Slovenia: LIC
			Taiwan, China: LIC
			Trinidad and Tobago: LIC
			United Arab Emirates: LIC
			Virgin Islands (U.S.): LIC

Source: World Bank data.

Note: This table classifies all World Bank member economies and all other economies with populations of more than 30,000. Economies are divided among income groups according to 2008 GNI per capita, calculated using the World Bank Atlas method. The groups are low income (LIC), \$975 or less; lower middle income (LMC), \$976–3,855; upper middle income (UMC), \$3,856–11,905; and high income, \$11,906 or more.

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A.2

Table of grades, salaries and social allowance categories (Kuwaiti / non-Kuwaiti)

Representation allowance	Minimum stay in class	Children Allowance for Kuwaitis	Cost of living		Social Allowance			Leaders award	Monthly salary (basic) And increments				Class / Group	
			Non-Kuwaiti	Kuwaiti	Non-Kuwaiti Married	Kuwaiti			Last bound	Bid increment	The number of increments	First bound		
						Married	Single							
660									1650			1650	Minister	
		Fifty K.D. Monthly Up to (7) Children only											Group leadership positions	
231			50	120		448		1500	690			790	Excellent degree	
204						425		1000	780	16	Five bonuses	700	Undersecretary of the Ministry	
174						400		670	680	16		600	Assistant Deputy Minister	
75	Four years													Public Group
						82	368	268		580	12	Five bonuses	520	Grade (A)
66						82	353	253		520	12		460	Grade (B)
58.5						75	328	235		460	10		410	First Grade
	Two years					75	315	222		410	10		360	Second Grade
						69	219	203		360	10		310	Third Grade
						69	278	190		310	10		260	Fourth Grade
						63	250	169		240	8		200	Fifth Grade
						63	242	161		200	7		165	Sixth Grade
						57	222	147		165	6		135	Seventh Grade
						57	219	141		135	5		110	Eighth Grade
													Group Professional assistance	
					50	282	189		295	7	Ten bonuses	225	First Grade	
	Five years				44	255	167		225	6				Second Grade
					38	135	154		165	5	Five bonuses	140	Third Grade	
	Two years				38	230	149		140	4		120	Fourth Grade	
					32	215	140		120	3		105	Fifth Grade	
					32	211	136		105	3		90	Sixth Grade	
													Group Assistant jobs	
					44	253	165		210	5	Ten bonuses	160	First Grade	
	Five years				38	230	149		160	4		120	Second Grade	
					32	211	136		120	3		90	Third Grade	

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- Note: In addition to the above, the Kuwaiti employee will have an increase in salary (50 K.D) per month with effect from 1/7/2005 the disposal of an item type bonuses, allowances, bonuses and other allowances in implementation of the Council of Ministers Decision No. (698/2005) on 2/7/2005, provided that it has not granted any allowances or increased the cadre during the five years preceding the issuance of the decision (i.e. from 01.07.2000 to 07.01.2005) and by grants from increasing the transfer of this amount gives the difference.
- According to Law No. (27/2008) and the Council of Ministers Resolution No. (606 for the year 2008) and to mainstream the SAI No. (49/2008) gives the employee the Kuwaiti reward financial support terms that are net salary (1000 d. k) and maximum(50 d. k) per month with effect from 08.28.2008.

Source: Kuwait Civil Service Commission,2010