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Returns to Education in Palestine and Turkey: A Comparative Analysis

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Abstract

This study exposes a comparative treatment of the private returns to education in Palestine and Turkey over the period 2004-2008. Comparable data, similar definitions and same methodology are used in the estimations. The results suggest that returns to schooling are higher for Turkey at the various levels of education for females and males and for both years 2004 and 2008. In 2008, returns are lower than 2004 levels for all stages of education. Returns to education are higher for women than men in both countries. The median ratio of male to female return is 0.55 (university) in 2004 and decreased to 0.17 (high school) in 2008 in Palestine. The corresponding figures for Turkey are 0.79 and .082 (both for high school). Finally, it was found that the selectivity

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corrected return estimates are lower than the OLS estimates in Palestine while they are higher than the OLS estimates in Turkey.

Keywords

Returns to Education – Mincer Equation – Gender – Palestine – Turkey

1 Introduction

The human capital approach to the study of the demand for education has been pioneered in the ground breaking works of Theodore Schultz, Gary Becker and Jacob Mincer. According to this approach, education is an investment of resources of time and money in exchange for future returns. Educational investments are evaluated by the celebrated concept of returns to education. There is a large body of literature that estimates the private returns to education using regression methods. The main objective of this study is to estimate and compare the private returns to education by evaluating the relationship between wages and education in Palestine and Turkey. This comparison is carried out for the years of 2004 and 2008 spanning a five year period. The data sets we use are comparable across the two countries and over time. Same methodology is applied to both of these data sets. This approach maximizes the comparability between the countries considered.

The Choice of Palestine and Turkey is mainly to highlight the differences between the two countries using Turkey as a benchmark. There are several reasons for this comparison. First of all, both Palestine and Turkey are developing countries although Turkey is at a more advanced stage of development than Palestine. Second, both countries are Middle Eastern countries. Furthermore, there are several similarities between the two countries that make their joint investigation interesting. Turkey has been studied more extensively than Palestine. Although enrollment ratios are similar in both countries at the various levels, labor force participation for women is much lower in Palestine. Private sector capacity is very much stronger in Turkey, which has open borders and a stronger export potential. Palestine is a smaller country, which is under occupation, and depends on exporting labor services (mainly to Israel), as well as the public sector. Such structural differences are likely to affect labor market outcomes, especially along gender lines. For example, low female participation in Palestine, coupled with many opportunities for women in foreign NGOs and international organizations, is likely to raise the return

for women compared to men. Female labor force participation in Palestine stayed around 10% between 1990-2002, and increased to about 15% between 2003-2011. Meanwhile, demand for unskilled male workers in the Israeli labor market tends to highlight the previous result. The continued demand for education in Palestine despite the low return is a reflection of the political situation. Palestinians tend to continue to invest in education as this is less likely to be confiscated or demolished by the occupation as the physical infrastructure. The years 2004 and 2008 were chosen to emphasize the impact of the 2008 financial crisis on both economies. As one would expect, Turkey is more integrated into the world economy than Palestine; while Palestine is more dependent on foreign aid than Turkey. Thus, it is not clear ex-ante how financial crises would have affected labor markets in both countries.

Palestine suffers from many economic hardships resulting from being under occupation to a large extent, despite the similarity with the educational system with Turkey. Using Turkey as a comparator country shows the magnitude of improvement that can be achieved if a political settlement is reached in Palestine. The proximity of Turkey to Europe and consequent labor migration from Turkey to Europe has a parallel with the Palestinian labor market and migration to Israel. Overtime, proximity and access to the Israeli labor market has had profound implications for the level of education and the gender gap in returns to education.

We are then able to surmise what might be the reasons for the observed differences between the returns to education in the two countries. The main conclusions of this study include the following: In both countries returns increase by education level, implying a convex structure of returns. High returns are observed at the tertiary level in both countries, which could be explained by the selection to universities taking place via national examinations after the completion of high school. Labor markets giving more importance to diplomas than productivity could also lead to such a result. There is a gender gap in returns in favor of females in both countries. The gender gap is larger in Palestine than in Turkey. The selectivity corrected return estimates are lower than the OLS results in Palestine while the opposite holds true in Turkey. This result may be due to the much lower female labor force participation in Palestine. Returns suggest a decreasing trend in Palestine and an increasing trend in Turkey over time from 2004 to 2008, suggesting a larger impact of the 2008 financial crises on the Palestinian economy, which is more dependent on donor assistance. Finally, returns in the formal and informal private sectors in Turkey are higher than in Palestine which could be explained by the dominance of the labor market in Palestine by the government sector.

Returns to education from a comparative perspective are considered for the European countries by Asplund and Pereira (1999) and Harmon et al. (2001). Denny et al. (2002) considered a number of countries; Lauer (2005) considered France and Germany; and Salehi-Isfahani et al. (2009) studied Egypt, Iran and Turkey. Our study is closer in spirit to those of Harmon et al., Lauer and Salehi-Isfahani et al. who use comparable data and methodology and are concerned with the influence of educational and labor market characteristics on the observed returns to education.

Previous studies of returns to education in Palestine include Angrist (1995; 1996; 1997). In the first paper Angrist argues that returns to education for the Palestinians have been declining in the 1980's due to an increase in the supply of college graduates. In the second paper he shows that Palestinians working in Israel have a larger premium than those employed domestically. In the third paper Angrist finds substantial returns to education in Gaza but not in the West Bank. Daoud (2005) compares the returns for a year of stability (1999) with that of the second intifada (2001). In a more recent study Daoud and Sadeq (2012), find substantial returns to education in Palestine. Previous studies of returns to education in Turkey include Tansel (1994; 1996; 2002; 2005; 2008: 2011). These studies report high returns to university education among other important conclusions.

This paper is organized as follows. Section 2 explains in detail the educational system in Palestine and Turkey. Labor market setting and the economic context in Palestine and Turkey are given in Section 3. The surveys used in the analysis are introduced in Section 4 along with the main features of the data. A brief account of the methodology employed is given in Section 5. Estimation results are presented in Section 6. These results include discussions of the returns to education estimates on years of schooling, by different levels of education and by sector of work. Concluding remarks appear in Section 7.

2 The Educational System

2.1 *Palestine*

The educational system in Palestine is divided into five types: Pre-school (kindergartens and nursery schools), basic education (compulsory 1st-10th grade), secondary education (11th-12th grade), post-secondary education/higher education, and non-formal and continuing education. Education in the preschool stage is offered in kindergartens for children 4-6 years old; nurseries are for children less than 4 years old. Many of the private schools accept in their first grade classes' only students who finished two years in the kindergartens.

The distribution of students at the different stages of education is 75% basic, 11% secondary and 14% tertiary; the figures for the West Bank are slightly lower than the Gaza Strip.

There are different branches beyond basic education. First, academic secondary education with a duration of two years; which is divided into scientific and literary streams. This stage is concluded by a general high school exam called "Tawjihi," which enables them to enroll in universities. The second is vocational secondary education that has duration of two years. It is divided into four streams: industrial, commercial, agricultural, and nursing. It prepares the students to sit for the vocational Tawjihi exam, which enables them to enroll in community colleges. Third is vocational training, which is divided into long-term training for a period of two years to prepare skilled laborers, and short-term training for a period of 5-8 months to prepare semi-skilled laborers.

After students finish the secondary stage and successfully pass the Tawjihi exam held at the national level they go into higher education. This is divided into two tracks. First is the community college (technical and formal education) where students study for a period of two years and receive a diploma. Second is university education where students study for a period of four years to receive a Bachelor's degree or five years for a Bachelor's degree in engineering. The universities also offer programs for higher diplomas for a period of one year after the Bachelor's degree, or a master program for a period of two years after the Bachelor's degree (Hashweh, 1998). Non-formal education is offered by ministries other than the Ministry of Education (Ministries of Labor, Social Affairs, and others), local and international charitable societies (UNRWA),[1] organization of employers and employees, religious organization and private organization. Financing education in Palestine comes mostly from the government's budget (and donors). Allocations to the Ministry of Education (MoE) as a proportion of GDP were 6.15% in 2004 and increased to be 9.78% in 2008; the proportion of total government spending for the said years were 9.13% and 19.33% respectively. The growth in MoE allocations for this period is nearly 83%.[2]

1 United Nations Relief and Works Agency for Palestinian Refugees (UNRWA) accounted for roughly 23% of all enrolled students in the basic and secondary stages in the 2007/2008 school year.

2 According to the World Bank (2008), The MENA average for expenditure on education as a percent of GDP is just over 5% for the most recent year in the period 1999-2003, the reported figure for the West Bank and Gaza is roughly 12% and the highest in the MENA region. But the proportion of government spending is around 18%, which is the average for the MENA region.

For the year 2007/2008, gross enrollment ratios for basic education reached 94.5% with 95.5% for females and 93.5% for males. For secondary education it is 57.1% with 60.4% for females and 53.8% for males. It is documented that the labor force participation rate by schooling is highest for the group of more than 15 years of schooling and lowest for the group with 13-15 years for men. The situation for females is different in terms of magnitude and order. Females with more than 15 years of schooling have a high participation rate (between 60-80%) and rates rose between 1996 and 2006. Women with 13-15 years of schooling are in the middle with rates falling from 40% in 1996 to 20% in 2006; the lowest group (unlike men) is for the uneducated (less than 13 years) with a rate stable around 10%.[3]

2.2 *Turkey*

A description of the educational system in Turkey is as follows. The sequential stages involved in the educational system are pre-primary education, primary education, middle schooling (lower secondary education), secondary education and tertiary education. Attendance at pre-primary schools is voluntary. It is provided for children ages between 3 and 5. It consists of two years of pre-school (ages 3 and 4) and the kindergarten year (age 5). Pre-primary gross enrollment rate is only about 30%—significantly lower than that of the countries with similar per capita GDP to Turkey. The Ministry of Education aims to achieve universal access to kindergarten by 2014/15, which will become compulsory then.

The compulsory level of schooling was only five years until the educational reform of 1997. In 1997 the compulsory level of schooling is extended to 8 years for all pupils from 6 to 14 years of age. It includes five years of primary and three years of middle (lower secondary) education. Students who complete the compulsory level successfully could go into secondary education. Secondary education includes four years of General High Schools, Anatolian High Schools and Vocational High Schools. There is a national, competitive secondary school entrance examination (SBS), which enables successful students to attend the best public secondary schools, such as Anatolian High Schools and private high schools. General and Anatolian High Schools are composed of options such as science, mathematics and social sciences. After completing high school, students take a national competitive examination for university admission. Tertiary education consists of two years of study leading to an Associate Degree and four to six years of study leading to a Bachelors' degree. There are also post graduate studies leading to Masters and

3 Daoud (2005) provides detailed accounts of unemployment and participation by schooling.

Ph.D. degrees. Two-year programs emphasize vocational skills and graduates of vocational and technical high schools are given priority in admission without a requirement of entrance examination. There are private schools at all levels including universities. Public schools are provided free of charge except at the tertiary level for which there is a nominal tuition.

The nationwide university entrance examination entails a highly competitive and selective process. The raw examination score is weighted by several factors, such as student's high school type and performance and the average entrance examination performance of students from that high school. Over time the educational achievements have increased at all levels. During the academic year of 1997-98, when eight years of schooling became compulsory, the net enrollment ratio at the primary level was 89.5 percent; at the secondary level it was 52.8 percent, and at the higher education level it was 19.5 percent. Ten years later, during the academic year of 2007-08, the net enrollment ratios at the primary, secondary and tertiary levels were 97.4 percent, 58.6 percent and 21.1 percent respectively. Finally, during the academic year of 2009-10 the same enrollment ratios were 98.2 percent at the primary level, 64.9 percent at the secondary level, and 30.4 percent at the tertiary level.

The Millennium Development Goal (MDG) no. 2 set a deadline of 2015 when all boys and girls everywhere complete a full course of primary schooling. Turkey has almost reached this goal today. MDG no. 3 promotes gender equality and empowerment of women. It targeted to eliminate gender disparity in primary and secondary education by 2005 and at all levels of education by 2015. Eliminating the gender disparity in education in Turkey will not be met by 2015 although the goal of eliminating the gender gap in primary education is almost achieved. The indicator to be used for gender disparity is the gender ratio, which is the ratio of girls to boys in primary, secondary, and tertiary education. The gender ratio has improved over time in Turkey. During the academic year of 2000-01 the gender ratio was 89.6 percent at the primary level, 74.4 percent at the secondary level, and 73.6 percent at the tertiary level. Eight years later, during the academic year of 2008-09, the gender ratios at the primary, secondary, and tertiary levels were 97.9, 89.0 and 80.1 percent respectively. As another indicator of gender disparity we can cite net enrollment ratios. During the academic year of 2009-10, net enrollment ratios at the primary level were 98.5 percent for boys and 97.8 percent for girls. At the secondary level, they were 67.6 percent for boys and 62.2 percent for girls. At the tertiary level, they were 31.2 percent for boys and 29.6 percent for girls. Although primary education is compulsory, 3.2 percent of girls are not enrolled in primary school. Besides gender differentials there are differentials by household income, educational level, and geographic location that persist. In particular, in the central

and eastern Anatolia the proportion not in school is high—especially for disadvantaged girls in rural areas.

An important point is the low achievement of basic skills. According to PISA (Programme for International Student Assessment), Turkey ranks low among the OECD countries. At the last round of this tests, about half of students in mathematics and about one-third of students in reading were at the first level or below.

There were increases in the share of educational expenditures in Gross Domestic Product (GDP) over time in Turkey. The share of public expenditures, at all levels of education, were 2.40 percent of GDP in 1997. It has increased to 2.60 percent in 2000, 3.10 percent in 2005 and 3.80 percent in 2011. The rate of increase from 1997 to 2011 was 58 percent, which indicates a substantial increase over the recent years. In spite of this, it is lower than the 9.78 percent in Palestine in 2008. The comparable average shares were 4.6 percent in OECD countries and 7.8 percent in Denmark in 2007.

3 Labor Market Setting and the Economic Context

3.1 *Palestine*

Labor Market Institution in Palestine

Labor markets in Palestine have undergone severe shocks starting with the Israeli occupation in 1967; the opening of Israeli labor markets to Palestinians has had a profound impact on education as many young Palestinians left schools for employment in Israel. The expansion of the higher educational system in late seventies and early eighties increased the supply of Palestinian university graduates, and hence lower returns. The establishment of the Palestine National Authority (PNA) increased the demand for educated Palestinian workers; along with that came a period of legislation that dealt with the labor market. Finally, beginning in 1996 there was political unrest and then the second Intifada, which resulted in Israel closing off Israeli labor markets to Palestinians and substituting them with foreign guest workers (World Bank, 2004, Angrist 1995, Aranki and Daoud 2010, Sayre and Miller, 2004, and Daoud 2005).

Since its establishment, the PNA has enacted many laws dealing with, among other things, labor market issues. One such law was the Palestinian Labor Law of 2000; a recent study (Sayer, Daoud and Kraetsch 2010) shows that this law resulted in longer duration spells, as there was a differential impact between areas in sectors with greater law coverage. The expansion of job security benefits granted by the law also may have resulted in lower employment opportunities for Palestinian youth. In a different paper Sayre and Daoud (2010a),

noticed that higher education tends to be associated with longer job tenure; however, it was difficult to attribute the increased tenure to the new law. This improvement in job tenure is coupled with high unemployment and long duration with varying degrees based on a variety of factors. In their recent paper Sayre and Daoud (2010b) find that men are more likely to leave unemployment compared to women; but unlike men, married women are less likely to exit a spell compared to single women.

3.2 *Turkey*

In 2001 there was a severe financial crisis with the outflow of capital. The exchange rate and the inflation rate soared. There were extensive bankruptcies in the banking sector. International agencies listed Turkey as one of the developing countries with the largest foreign debt. Interest payments accounted 45 percent of the budget while education and health expenditures declined. Per capita GDP declined by 9.6 percent in 2001 but recovered quickly in 2002 with a growth rate of 8 percent. The growth rates continued to be high in the following years. The rate of growth was an average of 7 percent during 2002-2007. Although the economy registered impressive growth rates after the 2001 crisis, the labor market impact of the 2001 crisis was adverse. Unemployment increased and remained high. This is dubbed as "jobless growth." Employment declined and remained below the pre-crisis level for several years.

The Global Crisis of 2007-2009 is considered the second largest crisis in history. The buoyancy of the Turkish economy was interrupted by the Global Crisis in the last quarter of 2008 when GDP dropped by 6.5 percent. The rate of growth was less than one percent in 2008. Both the domestic and the foreign demand for goods and services declined and as a result production and employment fell. The rate of growth of GDP fell consecutively for four quarters in 2008-2009. In the first quarter of 2009 GDP fell by 14.5 percent, which was the largest drop since 1945. In 2009 GDP fell by 4.8 percent. In 2009 the numbers of unemployed increased by 860,000 people, reaching 3,500,000. In 2008 the unemployment rate was 11 percent and increased to 14 percent in 2009. The non-agricultural unemployment rate was 17.4 percent with 16 percent for men and 21.9 percent for women. The unemployment rate was especially high among the youth. For the young (15-24 age group) it was 25.3 percent. These numbers imply that one out of every five women and one out of every four young men was unemployed. The impact of the Global Crisis on workers was large. Real wages declined substantially by about 19 percent. The workers had to accept not only real but also nominal wage cuts. The economy recovered from the Global Crisis in 2010. In 2010 the rate of growth of real GDP was an impressive 8.9 percent. Employment has increased. The number of

unemployed people declined to 3.1 million in 2010 from 3.5 million in 2009. The unemployment rate fell substantially in 2009. It fell to 11.9 percent. Non-agricultural unemployment fell to 14.8 percent and youth unemployment fell to 21.7 percent. The improvements in the economy and the labor market are expected to continue in 2011.

4 The Data

Palestinian data are from the Labor Force Survey conducted by the Palestinian Central Bureau of Statistics (PCBS) on a quarterly basis in the West Bank and Gaza Strip. They are based on two-stage stratified cluster random samples. The stratification is based on governorate and type of locality—such as rural, urban or refugee camps. Households were interviewed four times with a two-quarter break in the middle, providing a short panel.

Turkish data come from the Household Budget Surveys (HBS) of 2004 and 2008. These surveys are conducted by the Turkish Statistical Institute (TURKSTAT). They are based on stratified multistage nationwide samples covering rural and urban areas.

The year 2004 was a year in which the Palestinian economy was experiencing a recovery after the 2002 slump; 2008 on the other hand, was another recovery after the 2007 international boycott after Hamas won the parliament elections. That year also witnessed the international financial crisis. With Turkey being more integrated into world financial markets than Palestine, it is expected that the crisis would affect labor markets in both countries in a differential manner. The effect on Palestine would be more influenced by donor assistance than is the case for Turkey.[4]

This study will consider female and male wage earners, 15-65 years of age. Wage earners either worked in the survey month or reported positive income for that month. In order to arrive at wage income, earnings from the main and the second job (when applicable) are added together with the imputed values of in-kind payments and bonuses. The Consumer Price Index is used to obtain monthly real wages. In order to obtain real hourly wages, weekly real wages

4 The four-year span may not be a long enough period to reflect major changes in returns to education, however, domestic changes in the Palestinian labor markets resulting from political havoc are likely to reflect more instability than is the case for Turkey. However, Daoud and Sadeq (2012), provided estimates of private returns to education in Palestine; the evidence they present shows that during 1996-2006 private returns to education are stable except for 2002, which affected females' return more severely than it did for males.

obtained from monthly real wages are divided by the reported weekly hours of work. The data concerning education are available only in educational levels for which a qualification is achieved. Such education levels are converted to a number of years of schooling by assuming that the individuals achieved their degrees in the minimum required years of schooling and that they did not attend further years of schooling.

In Table 1 we present the descriptive statistics for the total female and male samples. The worker's age in the total sample is about 34-35 years in both Palestine and Turkey and remained stable from 2004 to 2008. In 2004, females in the Palestinian sample are about two years older than those in the Turkish sample while males in the Palestinian sample are about two years younger than those in the Turkish sample. Exactly the same pattern is observed in 2008 with regards to the ages of Palestinian and Turkish female and male wage earners. Experience indicates the potential experience (Mincer, 1974) should be computed as age minus the years of schooling minus six. In 2004, Palestinian females have about three years more experience than the Turkish females while Palestinian males have about three years less experience than the Turkish males. Further, in Palestine females have more experience than males in both 2004 and 2008, while in Turkey females have less experience than males in both 2004 and 2008. The years of experience have declined in all samples from 2004 to 2008.

The measurement of experience used in this paper is potential experience. Recently, some writers find this unsatisfactory and suggest use of actual experience. Writers such as Regan et al. (2009) and Blau and Kahn (2013), show the importance of employing adequate measurements of the individuals' experience that take into account their real number of years of experience, the moment at which the individuals really began their work participation and their periods of their inactivity. The above authors also state that this real measurement of work experience is especially important for women, who habitually undergo interruptions in their working life. However, this paper uses potential experience rather than actual years of experience. This is done for two reasons. First, the date used in this study does not contain information on actual years of experience for both Palestine and Turkey. There is information only on the tenure on the last job for Palestine only. Second, there is a wide literature against use of actual years of experience in the Mincer equation estimations since that variable is endogenous while potential experience is not endogenous.

The next variable, outlined in Table 1, concerns real hourly wages. The real hourly wages are given in New Israeli Shekel for Palestine and in Turkish Lira for Turkey. The mean real hourly wages have increased substantially from 2004

TABLE 1 *Summary Statistics and Distribution of Education (%)*

	2004				
	Palestine			Turkey	
Variables	Total	Female	Male	Total	Female
Age	34.46	34.26	34.50	34.83	32.32
	(10.91)	(9.19)	(11.24)	(10.12)	(10.17)
Experience	16.81	14.64	17.27	20.43	17.53
	(11.22)	(10.18)	(11.37)	(11.30)	(11.81)
Experience sq.	408.30	317.80	427.81	545.56	446.62
	(501.30)	(405.00)	(517.71)	(530.53)	(532.64)
Mean hourly wage*	9.23	8.91	9.29	3.3	3.05
	(8.73)	(9.19)	(8.63)	(5.11)	(4.83)
Log hourly wage*	2.02	1.97	2.03	0.839	0.681
	(0.61)	(0.65)	(0.60)	(0.80)	(0.90)
Years of schooling	11.65	13.62	11.23	8.4	8.79
	(3.94)	(3.42)	(3.91)	(3.93)	(4.44)
Distribution of Education (%)					
Illiterate	0.77	0.93	0.73	3	6
Literate	5.02	2.82	5.50	3	34
Primary	16.14	5.51	18.43	37	29
Middle	25.29	11.87	28.19	14	11
High	15.60	8.43	17.14	20	21
Vochigh				8	6
Twoyear	13.02	28.01	9.79	5	6
University	21.15	39.74	17.14	11	16
Higher Diploma	0.41	0.62	0.36		
Master	2.60	2.07	2.71	1	1
Sum	100	100	100	100	100
No.of obs.	12,778	2,267	10,511	5,778	1,275

Notes: The categories of education are dummy variables given in percentage. Their standard sd=(m(1-m))1/2. "Master" category includes also Ph.D holders

* Turkish Lira (TL) for Turkey and New Israeli Shekel (NIS) for Palestine.

	2008					
	Palestine			Turkey		
Male	Total	Female	Male	Total	Female	Male
35.55	34.68	35.12	34.58	34.73	32.2	35.57
(10.00)	(10.62)	(9.46)	(10.86)	(10.52)	(10.03)	(10.53)
21.26	17.11	15.52	17.47	19.94	16.79	20.98
(11.02)	(11.11)	(10.57)	(11.19)	(11.57)	(11.56)	(11.38)
573.58	416.32	352.50	430.36	531.33	415.55	569.54
(526.63)	(473.16)	(432.16)	(480.61)	(526.89)	(496.33)	(531.12)
3.37	12.08	10.71	12.39	4.9	4.48	5.03
(5.18)	(16.20)	(12.35)	(16.19)	(5.52)	(4.97)	(5.68)
0.885	2.23	2.12	2.50	1.279	1.102	1.337
(0.76)	(0.69)	(0.69)	(0.69)	(0.79)	(0.93)	(0.73)
8.29	11.56	13.60	11.11	8.79	9.4	8.59
(3.76)	(3.81)	(3.63)	(3.71)	(3.89)	(4.20)	(3.76)
2	0.80	1.30	0.69	2	3	1
2	4.66	2.53	5.13	4	6	4
39	15.22	6.68	17.11	33	26	35
14	28.94	11.70	32.75	16	12	17
20	16.13	8.34	17.85	17	20	16
8				11	9	12
4	11.33	23.08	8.74	7	10	6
9	20.13	41.71	15.37	11	16	10
	0.34	0.79	0.24			
5	2.44	3.86	2.13	1	2	1
100	100	100	100	100	100	100
4,508	15,302	2,769	12,533	6,263	1,554	4,709

deviations are not reported for brevity but may be computed from their reported means (m) as

to 2008 in both Palestine and Turkey in all samples. The variance of the wages in Palestine increased from 2004 to 2008 in all samples. In particular, the variance of mean hourly wage almost doubled for the total sample and the male sample with a smaller increase in the female sample. The variance of wages in Turkey in different samples exhibited slight increases or remained stable from 2004 to 2008. The coefficient of variation (the ratio of standard deviation to the mean) could be used as an alternative measure of dispersion. The coefficients of variation for the total sample are 0.32 in 2004 and 0.33 in 2008 in Palestine and 0.68 in 2004 and 0.48 in 2008 in Turkey, indicating a slight increase in dispersion in Palestine and slight decrease in dispersion in Turkey.

Table 1 also provides information on educational attainments in the two countries. Years of schooling increased by about 5-6 percent from 2004 to 2008 in both Palestine and Turkey. In 2004, the years of schooling is larger in Palestine than in Turkey by about one year. In 2008, years of schooling is also larger in Palestine than in Turkey by about one year in the total sample, by less than one year in the female sample, and by about a year and a half in the male sample. The last part of Table 1 gives the distribution of schooling levels and their evolution over 2004-2008. First, we note the differences between the two countries. The proportion of illiterate and literate (read and write only) individuals are larger in Palestine than in Turkey in all samples in both 2004 and 2008. At the other end of the distribution we observe that the proportions of university graduates are larger in Turkey than in Palestine in all samples in both 2004 and 2008. Next, we note the changes over time. The proportions of illiterate persons have declined in all samples in both Palestine and Turkey from 2004 to 2008. The proportions of literate individuals declined in all samples slightly in Palestine and increased slightly in Turkey from 2004 to 2008. The proportions of primary school graduates declined in all samples in both countries from 2004 to 2008. The proportions of middle school graduates increased in all samples in both countries from 2004 to 2008. The proportions of general high school graduates increased in Palestine, but decreased in Turkey over the same period. No data is collected on the status of vocational high school graduates in Palestine. Proportions of vocational high school graduates have increased in all samples in Turkey from 2004 to 2008. The proportions of those with an Associate degree (two year tertiary) either increased or remained stable during this period. The proportions of university graduates in Palestine have increased in all samples from 2004 to 2008 while in Turkey they remained stable in the total and female samples and increased in the male sample. In conclusion, we can say that there was an increase in educational attainments from 2004 to 2008 in both Palestine and Turkey.

5 Methodology

We employ Mincer's (1958, 1974) model of earnings, which is widely used in empirical labor economics to estimate returns to education. This approach has been used for both countries in previous research possibly with different specifications. The approach is unified here for comparative purposes. However, we do obtain estimates using Heckman's (1976) 2-step procedure to correct for biases that may arise due to self-selection.[5]

Mincer study specifies the following model:

$$\ln W = \beta_0 + \beta_1 S + \delta_1 X + \delta_2 X^2 + u \quad (1)$$

where W is wage, S is years of schooling, X is potential labor market experience, and u is a zero mean error term. β_1 is the rate of return to schooling, which is assumed to be the same for all education levels. The assumption of constant returns to schooling across different education levels is relaxed in the following specification.

$$\ln W = \beta_0 + \Sigma \beta_j E_j + \delta_1 X + \delta_2 X^2 + u \quad (2)$$

where Ei is the dummy variable indicating education level i. The lowest education level comprising of illiterate and read and write only (not a graduate) is the reference category. The other education levels are primary, middle (lower secondary), high school, vocational high school (only for Turkey) two-year

5 The human capital model suffers from three potential biases, endogeneity (Griliches 1977 and Card 1995), heterogeneity (Card 2001), and self-selection (Trostel, P., Walker, I., and Woolley, P. 2002). Because of the endogeneity problem the estimations presented in this paper may potentially be biased. This is a very important problem about which there is great deal of literature. However, it is not possible to provide estimates using instrumental variables for both countries. The reason for this is that although it may be possible to find variables that could be used as instruments in the case of Palestine, such variables could not be found in the case of Turkey. Therefore, a comparison of the estimation results put forward in this paper and of the instrumental variables estimates was not possible. Despite these limitations, there is no consensus on whether OLS biases the results upward or downward; as this paper documents for self-selection. This model is relevant to the Palestinian case simply because the returns to education are very low (compared to Turkey and otherwise). The potential reasons for this low returns to education can be found on the demand or supply sides of the labor market, other institutional and governance factors are also suggested by Oyelere (2008). It is of major interest to policymakers to pin-point those reasons as it has strong implications for future growth.

tertiary, university, higher diploma (only for Palestine) and Masters and Ph.D. degree holders. No information was collected on the vocational high school graduates in Palestine. A higher diploma category comparable to that in Palestine does not exist in Turkey. Other variables are defined as in Equation (1). Equations (1) and (2) are estimated by including a control variable called "urban" in the tables. It indicates whether or not the individual is located in an urban area.[6] Equations (1) and (2) are first estimated by OLS. However, these equations are observed only for the sample of wage earners, which is not random. As a result the estimates are likely to be biased. Therefore, we also provide the selectivity corrected estimates. The literature suggests that selectivity is particularly important for women (Schultz, 1988; 1993 and 1995). Women's labor force participation is very low in Palestine (Daoud, 1999) and in Turkey (Tansel, 2002). We specify a probit wage earner relationship, which is explained by education, experience, urban and identifying variables.[7] The Heckman two-step estimation procedure is used to estimate the probit selection equation and the wage equation with Inverse Mills Ratio. We do not report the first stage probit estimates in order to save space.

6 Estimation Results

In this section we discuss the estimation results in three sub-sections. We first discuss the results with years of schooling, next with education levels and finally by sector of employment. We present both the OLS estimation results and the results with selection correction in order to have an idea about the magnitude of selection bias. The complete estimates of the models considered underlying the tables in this section are presented in the IZA Working Paper version of this paper (Tansel and Daoud, 2011).

6.1 *Estimation Results with Years of Schooling*

OLS estimates of returns to education by gender are provided in Table 2. The numbers in these tables are the coefficients on the years of schooling variable in the Equation (1) estimate that are given in Appendix Table A1 of the working paper Tansel and Daoud (2011). All coefficient estimates are statistically

6 Any locality with 49,000 residents and electricity, water, a health care center, a high school, or post office is classified as urban.

7 The identifying variables in the case of Turkey are individual unearned income, unearned income of the other household members and the amount of land owned (Schultz, 1990 and 1991). The identifying variables in the case of Paestine are number of children less than six, household size, a divorced or widowed dummy, and an employed in Israel or settlement dummy.

significant. The goodness of fit of the regression planes is better for Turkey than for Palestine. The coefficient of determination is around 30% in 2004 for Turkey and increased over time to about 35% in 2008 while the coefficient of determination for Palestine decreased over time during the same period. While the coefficients of determination are about the same for the female and male samples for Turkey, they are substantially larger for the female samples than for the male samples for Palestine. These results imply that years of schooling and experience explain wages better in Turkey than in Palestine, and they explain wages better in the female samples than in the male samples in Palestine. The estimated returns to an additional year of schooling are lower in Palestine than in Turkey. They are 5.4% and 4.1% in 2004 and 2008 respectively in Palestine and 11.7% and 11.8% in 2004 and 2008 respectively in Turkey. Thus, returns to education in Turkey are about 2-3 times higher than in Palestine. However, returns to education for Palestinian females are somewhat closer to those for Turkish females with 10-11% versus about 14% respectively.

The overall trend in returns to education is downward in Palestine between 2004 and 2008. The mean hourly wage has risen during this period. The proportion of the better educated as well as the years of schooling has also increased (see Table 1). In contrast, the overall trend in returns to education is upward in Turkey between 2004 and 2008. Both the mean hourly wage and the proportion of the better educated as well as the years of schooling has increased in Turkey during this period.

In both Palestine and Turkey the returns to education for females are larger than those for males. There is a large gender gap in Palestine in the order of 6-7 percentage points while the gender gap in Turkey is in the order of about 3 percentage points. The gender gap has increased somewhat from 2004 to 2008 in both countries.

TABLE 2 *OLS estimates of Returns to Education by Gender (percent)*

Year	All		Female		Male	
	Coefficient	t-Ratio	Coefficient	t-Ratio	Coefficient	t-Ratio
			Palestine			
2004	5.4	38.8	11.1	25.3	5	33.3
2008	4.1	26.7	10.5	24	3.6	20.9
Turkey						
2004	11.7	50.12	13.7	28.5	10.9	41.01
2008	11.8	51.4	14.1	25.1	10.9	45

Selectivity corrected estimates of returns to education by gender are reported in Table 3. For Palestine the selectivity corrected estimates are lower than the OLS estimates, while for Turkey the selectivity corrected estimates are higher than the OLS estimates. Thus, the selectivity bias is negative for Palestine and positive for Turkey. We also note that the change in returns to education due to selection correction is minimal for men but rather large for women. This is due to the higher labor force participation of men than for women. This leads to an OLS overestimation by a large amount in Palestine. Evidently, this problem is not as severe for Turkey as it is for Palestine. As noted earlier, the labor force participation rates in Palestine are 14 percent for females and 66 percent for males in 2010 (Palestinian Central Bureau of Statistics, 2010) while for Turkey they are 28 percent for females and 71 for males in 2010 (TURKSTAT, 2010). The above mentioned result is also evident by the observation of Appendix Table A2 of the working paper Tansel and Daoud (2011). The coefficient estimates of lambda are statistically significant in all samples in Palestine while only in some samples in Turkey. Finally, the selectivity corrected estimates for Palestine reveal a declining trend over time (similar to the OLS estimates) except in the female sample, while for Turkey they reveal a declining trend in contrast to OLS estimates.

In the context of the Mincer model with self-selection, Arrazola and Hevia (2008) show that other complementary measurements of returns to education may be of interest. As a complement to the work presented in Table 3 we also present three estimates in Table 3A. These three estimates are suggested by Arrazola and Hevia. As explained by Arrazola and Hevia, B_1 measures the mean effect of a variation in the years of education on potential wages. It is the same as the selectivity corrected estimates reported in Table 3, which the literature widely focuses on. B_2 measures the mean effect of variation in the years of education on wages for the population of individuals who are in wage-employment. B_3 is a new return measure in the years of education on the wages actually earned. These three measures are reported in Table 3A and they supply some relevant information on returns to education in Palestine and Turkey. We can say the following about these estimates: In general the estimates for B_2 and B_3 are lower than the estimates for B_1. Furthermore, the estimates for 2008 are lower than for 2004, and the estimates for females are higher than for males. These conclusions support the estimates presented in Table 3 discussed in the previous paragraph.

We now turn to a discussion of the returns to experience. The discussion will follow the OLS results in the Appendix Table A1 and Table A2 of the working paper Tansel and Daoud (2011). The returns to experience are lower in

TABLE 3 *Selectivity Corrected Estimates of Returns to Education by Gender (percent)*

Year	All		Female		Male	
	Coefficient	t-Ratio	Coefficient	t-Ratio	Coefficient	t-Ratio
Palestine						
2004	4.7	27.1	6.1	6.98	4.9	27.7
2008	3.3	16.2	6.9	9.9	3.8	17.1
Turkey						
2004	12.2	29.64	15.1	10.36	11.24	37.1
2008	9.96	24.7	14.4	9.8	10.3	37.9

Notes: 1) The estimates are the coefficients of the "Years of Schooling" in the OLS Mincer Wage Equation estimates given in the Appendix tables of the working paper Tansel and Daoud (2011). 2) All coefficient estimates are statistically significant at five percent level or better.

TABLE 3A *Three measures of returns to education based on Arrazola and Hevia (2008) estimates for Palestine and Turkey*

Palestine	2004			2008		
	All	Female	Male	All	Female	Male
B_1	4.7	6.1	4.9	3.3	6.9	3.8
B_2	4.7	4.1	4.5	3.1	5.1	3.9
B_3	4.6	0.7	0.6	1.6	0.2	3.3

Turkey	2004			2008		
	All	Female	Male	All	Female	Male
B_1	12.2	15.1	11.2	9.9	14.4	10.3
B_2	11.9	13.8	10.8	8.6	13.1	10.1
B_3	11.3	6.3	6.1	6.7	5.5	5.0

In the probit regression, dummy variables were set to zero except for urban dwellers
B_2 was obtained from salaried individuals only.
B_3 was also estimated using salaried individuals because not restricting the sample to positive wages gave the same results as restricting the sample to salaried individuals.

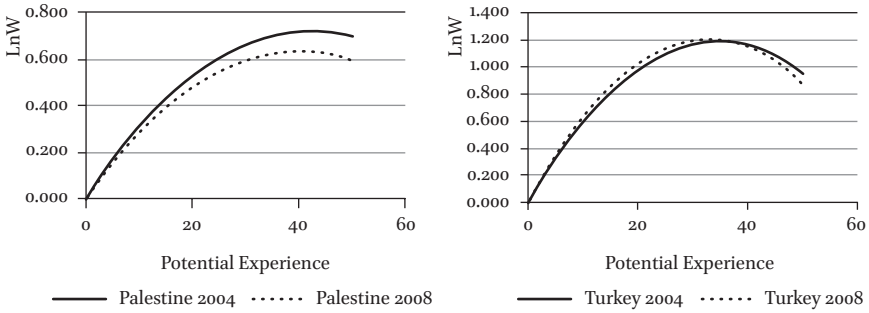

FIGURE 1 *Wage and Experience Profiles in Palestine and Turkey*

Palestine than in Turkey. The coefficient of experience is positive and around two percent in the female and three percent in the male sample in Palestine while they are four-five percent in the female and about eight percent in the male sample in Turkey. The coefficient estimate on the quadratic term in experience is negative in both countries. Thus, the wage-experience profiles are concave in both countries as it is shown in Figure 1, which is drawn on the assumption of zero for the constant, years of schooling and urban. These profiles are more concave in Turkey than in Palestine, suggesting larger marginal returns to experience in Turkey than in Palestine. The returns to experience have increased in the female sample and decreased in the male sample over time from 2004 to 2008 in Palestine, while they have increased in all samples over time in Turkey.

We now comment on the coefficient estimate on urban dummy. This coefficient is statistically significant in the female and male samples in 2004 and in the total and male samples in 2008. The estimates imply that female urban dwellers receive on average 7.4 percent more than rural and refugee camp dwellers in 2004 while the coefficient is not statistically significant in 2008. In contrast, male urban dwellers receive on average 3.2 percent in 2004 and 6.7 percent in 2008 less than rural and refugee camp dwellers. Thus, while females have an urban premium males do not. This is because females residing in urban centers tend to be employed by NGOs, international organizations, or foreign governments—unlike the rural and refugee camp dwellers. A comparison of the estimates for Turkey shows that the urban premium is much larger for Turkey than for Palestine. The coefficient estimates are positive and statistically significant in all samples for Turkey. The urban premium is about 11 percent in both 2004 and 2008. Female urban dwellers receive on average 18 percent in 2004 and 20 percent in 2008 more than rural dwellers, while male urban dwellers receive on average 10 percent more in both years.

6.2 *Estimation Results with Education Levels*

In this section we report the estimates based on Equation (2), which allows returns to education to differ by level of education. The OLS estimates for the total, female, and male samples are reported in Table 4. The corresponding

TABLE 4 *OLS Estimates of Returns to Education by Level of Education (percent)*

Year	Primary	Middle	High	Voc. High	Two-Year	University	Higher Diploma	Masters
Total Sample								
Palestine								
2004	2.9	1.6	0.97		6.67	10.15	7.45	14.33
2008	1.94	0.8	1.23		2.73	7.95	-1.8	10.23
Turkey								
2004	8.58	6.77	12	17	9.1	16.63		16.83
2008	4.78	8.17	9.43	12.27	14.35	19.9		14.1
Female Sample								
Palestine								
2004	4.92	2.47	5.77		14.43	17.3	2.15	13.83
2008	-0.18	0.8	6.97		14.6	18.25	0.75	10.5
Turkey								
2004	2.76	12.07	14.57	21.4	9.2	17.98		18.03
2008	-1	11.73	11.37	12.16	20.9	22.55		14.57
Male Sample								
Palestine								
2004	2.34	1.87	0.63		6.47	9.6	8.7	14.23
2008	1.68	0.7	1.17		2.27	7.15	-4	9.67
Turkey								
2004	8.9	5.4	11.47	16.1	8.55	16.1		14.17
2008	5.38	6.33	9.3	12.17	13.25	18.65		14.47

Notes:
1)—indicates that no observation is available.
2) Returns to the two-year tertiary level are computed over the vocational high school level.
3) Returns to the university level are computed over the general high school level for Turkey and general high for Palestine.
4) The Masters category includes those who are masters degree and Ph.D. degree holders. In the returns computation it is assumed that on the average it takes three years for these degrees over a university degree.
5) All estimates are statistically significant at five percent level or better.

TABLE 5 *Selectivity Corrected Estimates of Returns to Education by Level of Education (percent)*

Year	Primary	Middle	High	Voc. High	Two-Year	University	Higher Diploma	Master
Total Sample								
Palestine								
2004	1.64	0.23	-0.23		8.2	10.33	11.5	13.6
2008	0.36	0.97	1.57		1.43	6.63	-6.85	7.07
Turkey								
2004	8.76	6.9	12.2	17.47	9.3	16.93		17.03
2008	2.14	7.03	8	8.63	10.8	14.1		10.5
Female Sample								
Palestine								
2004	5.72	-4.07	0.43		8.4	13.28	11.15	9.2
2008	1.5	0.6	2.31		9.67	13.95	-7.15	8.33
Turkey								
2004	2.82	12.5	15.3	22.67	11	19.78		18.77
2008	-1.71	10.13	9.67	9.9	17	19.95		12.47
Male Sample								
Palestine								
2004	2.54	0.4	-0.03		5.4	10.15	11.65	14.43
2008	1.34	1.03	2.13		2.07	6.98	-4.95	6.4
Turkey								
2004	9.08	5	12.1	17.53	8.8	16.58		16.63
2008	4.24	7.43	8.63	9.73	11.45	17.18		11.63

Notes: See notes to the Table 4.

selectivity corrected estimates are reported in Table 5. All of the estimates[8] are obtained from the wage equation estimates provided in Appendix Tables A3-1 through A4-2 of the working paper Tansel and Daoud (2011).

The returns to education increase by the level of education in both Palestine and Turkey, indicating the convexity of the returns structure. These estimates also give an idea about whether or not degrees matter—the so-called sheep

8 The returns to education figures in the tables of this paper were derived by taking the difference between the estimates for successive levels of education and divided by the number of years between the levels.

skin effects. We present the estimates for Palestine and Turkey with two minor differences. In Palestine, the labor force survey does not indicate whether an individual has a vocational high school degree or not, while in Turkey this is known. Also, the Palestinian educational system allows for a one-year program beyond the bachelor's degree leading to a Higher Diploma, which is not the case in Turkey. The base group is the "illiterates and the read and write only" in both Palestine and Turkey. The goodness of fit of the wage equations are better for Turkey than for Palestine, as indicated by the coefficients of determination. The coefficients of determination have decreased somewhat in Palestine and increased somewhat in Turkey from 2004 to 2008. The goodness of fit of the female wage equations are substantially better than that of the male wage equations in Palestine.

An inspection of the tables indicates the nonlinear structure of the returns to education in both Palestine and Turkey in both 2004 and 2008. Considering the total sample, we observe that the returns to education are lower in Palestine than in Turkey at all levels of education, especially at the lower levels of education. Returns to education have declined from 2004 to 2008 at all levels except the high school level in Palestine. However, there is a mixed pattern in Turkey: returns to education declined at the primary, high school, vocational high school, and master levels while they increased at the middle school, two-year tertiary, and university levels over time from 2004 to 2008.

We now turn to the inspection of returns to education for the female and the male samples. Returns to education are substantially higher in Turkey than in Palestine for both females and males. However, the returns at the two-year tertiary and the university levels for females are similar to each other in Palestine and Turkey. Returns to females are substantially higher than those to males in both years in both Palestine and Turkey. Returns in Palestine for both females (except at the high school level) and males decline from 2004 to 2008. While in Turkey they decline at all levels except at the two-year tertiary and the university levels for both females and males.

We now compare the OLS and selectivity corrected estimates of the returns to education. In Palestine in 2004 and 2008, the OLS estimates are larger than the selectivity corrected estimates in most of the samples except at the higher diploma level. This is especially true for the female sample. In Turkey, in 2004 selectivity corrected estimates are larger than the OLS estimates in all of the samples except in the male sample at the middle school level. In contrast, in 2008 the OLS estimates are larger than the selectivity corrected estimates in all of the samples except in the male sample at the middle school level.

Returns to high school and the vocational high school both have declined from 2004 to 2008 for both females and males in Turkey. A comparison of the

high school and vocational high school returns indicate that returns to vocational high school are higher than the returns to general high school in all of the samples in both 2004 and 2008. The differential is larger in 2004 than in 2008. The result of higher returns to vocational than to general high schools is consistent with previous studies for Turkey reported by Tansel (1994; 1996; 2001; 2002; 1996; 2005 and 2008; 2011). However, it is contrary to the results reported for many countries by Psacharopoulos, (1985; 1994) and Psacharopoulos and Patrinos (2004). This result is driven by the fact that there is a large group of general high school graduates as compared to vocational high school graduates. General high schools prepare students for the university education and many more students choose general high schools with the hope of entering university. Over time the governments have tried, albeit not successfully, to increase the number of students choosing vocational high schools.

The estimates of the wage equations with education levels are given in the Appendix tables of the working paper Tansel and Daoud (2011). We can observe the returns to experience and urban location. However, these estimates are similar to the cases discussed for the wage equations with years of schooling in Section 6.1 Therefore, these results will not be elaborated further here.

6.3 *Returns to Education by Sector of Work*

In this section we consider whether there are differences in returns to education across various sectors of work, including public and private. The sectors

TABLE 6 *Distribution of Wage Earners by Sector of Work, Turkey (percent)*

	2004					
	Palestine			Turkey		
Variables	Total	Female	Male	Total	Female	Male
Public Adm.	42.3	44.7	41.8	16.7	18.6	16.2
SOE				7.5	4.3	8.4
Other*	9.3	19.4	7.1			
Formal PS.	44.9	34.8	47.1	38.0	32.9	39.5
Informal PS.	3.6	1.1	4.1	37.7	44.2	35.9
Sum	100	100	100	100	100	100
No. of Obs.	12,778	2,267	10,511	5,668	1,254	4,414

Notes: "Public Adm." is public administration sector. "SOE" is state owned enterprises. "Formal PS"
* this category includes NGO's, UNRWA, and Foreign and international employers.

considered in Palestine include public administration, "other," and formal and informal private sectors. The "other" category includes NGO's, UNRWA, and foreign and international employers. The sectors considered in Turkey include public administration, State Owned Enterprises (SOE), and formal and informal private sectors. Formal sector employees are covered by a social security scheme, while informal sector employees are not covered by any scheme. Table 6 gives the distribution of wage earners by sector of work. In Palestine those wage earners who work in the informal private sector constitute the smallest group. Their proportion in total has increased from 3.8 to 4.3 percent from 2004 to 2008. There are more males in this category than females. The formal private sector is the largest group in Palestine. The second largest group is the category of public administration worker. Their proportion has decreased from 42 to 31 percent from 2004 to 2008 for the total sample. There are many more females in this category than males. In contrast, the public administration sector in Turkey is less than half as large as the one in Palestine with its proportion in total equal to 17 percent in 2004 and declining b slightly in 2008.

The informal private sector is very small in Palestine. The proportions of wage earners in this category are less than 5 percent. The proportion of females is noticeably low with 1.2 percent in 2004 and 0.9 percent in 2008. In contrast, informal private sector is also one of the largest categories in Turkey with proportions equal to 38, 44 and 36 percents in the total, female and male samples in 2004. These proportions declined somewhat in 2008. We note that although

2008					
Palestine			Turkey		
Total	Female	Male	Total	Female	Male
37.8	43.7	36.5	15.5	16.8	15.1
			7.2	6.1	7.6
6.6	15.5	4.7			
51.7	39.9	54.4	44.1	36.4	46.7
3.8	0.8	4.5	33.2	40.7	30.7
100	100	100	100	100	100
15295	2769	12526	6,204	1,542	4,662

is formal private sector. "Informal PS" is informal private sector;

the informal private sector is getting smaller over time in Turkey, there are many more women in the informal private sector than men. SOE workers in Turkey are mostly blue collar workers and constitute less than 10 percent of the total in both years.

This discussion of the sectoral distribution of wage earners indicates that the Palestinian labor market is dominated by the formal private sector and by the public sector. In the public administration sector wages are likely to be set administratively by level of education and tenure unlike the private sector where wages are determined by productivity. As a result, the Palestinian labor market can be considered rigid with small variation in wages. In contrast, the Turkish labor market is dominated by the formal and informal private sectors. Together they account almost 75 percent of the wage earners. In these two sectors, especially in the informal private sector, wages are likely to be determined by productivity, and employment practices are flexible. The formal private sector has also achieved some degree of flexibility since after the 2003 new labor code.

TABLE 7 *OLS Estimates Returns to Education by Sector of Work and Gender (percent)*

	Palestine					
	All		**Female**		**Male**	
	Coefficient	**t-Ratio**	**Coefficient**	**t-Ratio**	**Coefficient**	**t-Ratio**
Public Administration						
2004	7.5	49.1	7.7	11	7.3	44.9
2008	7.2	31.8	7.7	11.7	6.9	27.5
Other						
2004	4.6	8.5	7.5	6.7	4.6	7.4
2008	7.6	13.8	10.7	8.6	6.9	10.6
SOE						
2004						
2008						
Formal Private Sector						
2004	4.5	17.4	8.9	11.5	4.6	16.8
2008	2.9	11.6	8.1	11.1	2.9	10.8
Informal Private Sector						
2004	2.1	1.7	6.5	1.4	1.6	1.2
2008	2.3	1.8	-7.5	-1.5	2.3	1.7

Notes: The coefficient estimates are the coefficients of the "Years of Schooling" in the Mincerian

With the aim of investigating the effects of different types of labor market structures, we estimated separate wage equations for each sector of work and presented them in the Appendix Tables 5, 6 and 7 of the working paper Tansel and Daoud (2011) for the total, female and male samples respectively. First, we considered only the estimation of Equation (1) with years of schooling because estimation with levels of education combined with sectors of work led to too few observations in several cells. Second, we provided only the OLS estimates for both countries to maintain comparability since we could not find suitable instruments that would explain sector selection in the case of Palestine, although sector selection is addressed and found to be significant for Turkey in Tansel (2005 and 2008). The resulting returns to education (the coefficient of the years of schooling) by sector of work are presented in Table 7. The underlying wage equation estimates in the Appendix tables of the working paper Tansel and Daoud (2011) indicate that the goodness of fit of the equations is better for Turkey than in Palestine. The goodness of fit of the Palestinian wage equations in 2004 is better than those in 2008. In particular, the coefficients of

Turkey					
All		**Female**		**Male**	
Coefficient	**t-Ratio**	**Coefficient**	**t-Ratio**	**Coefficient**	**t-Ratio**
6.2	11.2	6.4	4.6	6.1	10
9	15.9	11.8	9.4	8.3	13.1
4.9	4.2	4.5	1.6	5.5	4.5
7	6.8	8.1	4.5	6.5	5.8
9.4	20.6	8.8	8.5	9.7	19.3
7.6	17.9	7.2	5.5	7.9	18.6
7.4	12.1	8	6.4	6.4	8.9
5.4	9.6	4.8	4	5.1	8.1

wage equations given in Appendix tables of the working paper Tansel and Daoud (2011).

determination for the informal sector in the total and male samples in 2004 and 2008 are rather low, only around five percent.

All of the estimates of the returns to education provided in Table 7 are statistically significant except those for Palestine in the informal private sector in the female sample in both 2004 and 2008 and in the male sample in 2004. We first consider the returns to education estimates for Palestine. In the public administration the returns are around 7-8 percent in both years. In the "other" sector the returns have increased from 2004 to 2008. The highest returns are observed in the "other" sector for females with about 11 percent in 2008. In the formal private sector the returns have declined from 2004 to 2008. The returns for females are higher than for males. They are particularly low for males in 2008 with around 3 percent. The lowest returns are observed in the informal private sector with around 2 percent in the total and male samples in both years. The overall pattern indicates somewhat higher returns in public administration and "other" sectors than in the private sectors—as expected.

The results for Turkey in Table 7 indicate the following pattern. Returns in public administration increase from around 6 percent in 2004 to 8-12 percent in 2008. Returns in the SOEs are around 5-6 percent in 2004 and increase to 7-8 percent 2008. While the returns in the public administration and the SOEs increased from 2004 to 2008, the returns in the formal and informal private sectors decreased over the same period. The lowest returns are observed in the SOEs in 2004 and in the informal private sector in 2008. In comparing the results for Palestine and Turkey we note that the returns in Palestine in the formal and informal sectors are lower than in Turkey in both years. This is an expected result since the labor market in Turkey could be considered to be dominated by the private sector while the labor market in Palestine could be considered to be dominated by the public and international sectors.

7 Conclusion

This study exposes a comparative treatment of the private returns to education in Palestine and Turkey over the period 2004 to 2008. In estimations, we used comparable data, similar definitions and same methodology for both countries. We carried out our comparisons at three levels: First, by estimating the average returns to education; second, by estimating the returns to education at different levels of schooling; third by estimating the returns by different sectors of employment. Our salient conclusions are as follows. The educational systems of the two countries are comparable with selection taking

place via national university entrance examinations after the completion of high school. This could provide one explanation for the high returns observed in both countries at the two-year tertiary and the university levels. In both countries the returns increase with the level of education, except in Turkey at the Masters level. This implies a convex structure for the returns to education, implying nonlinearity in both countries. This could also be a result of the labor markets giving more importance to diplomas than productivity. Returns to education are higher for females than for males in both countries. However, the gender gap is larger in Palestine than in Turkey. The selectivity corrected return estimates are lower than the OLS estimates in Palestine, while they are higher than the OLS estimates in Turkey. The returns decrease somewhat from 2004 to 2008 in Palestine, while they show an increasing trend in Turkey over the same period. Finally, we find that the returns are higher in the formal and informal private sectors in Turkey than in Palestine, as expected since the labor market in Palestine could be considered to be more rigid than the one in Turkey, as indicated by its dominance by the government sector and international organizations.

These results could be useful to policy makers in addressing human capital policy in Palestine and Turkey. The study recommends the following:

- Based on the level of returns to education, the governments are encouraged to gear more resources towards female education for two reasons: first to reduce the gender gap and second it is a more attractive investment. There are also potential gains from increased female schooling; previous work suggests that schooling increases the probability of participation and hence growth.
- The low returns in Palestine (compared to Turkey) could signal a dangerous path for future generations. Every effort is needed to reduce labor market rigidities in order to make investment in education an attractive option.
- The convexity of returns to education tends to signify the importance of higher education. Although enrollment ratios tend to drop for the tertiary education (largely due to cost and resource limitations), some balancing is required in the public financing of lower education and higher education.
- The observed asymmetry in correcting for self-selection casts doubt on the robustness of the results (despite the presumed explanation of labor force participation). It is expected that correction for the other biases, as well as an explanation of the determinants of the return itself, would greatly enhance the outcome of similar studies.

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