

Wage Differentials in a Fast-Changing Environment: A Sectoral Analysis



PALESTINE
ECONOMIC
POLICY
RESEARCH
INSTITUTE

Cordaid 

2007



M A S

Palestine Economic Policy Research Institute

Wage Differentials in a Fast-Changing Environment: A Sectoral Analysis

2007

The Palestine Economic Policy Research Institute (MAS)

Founded in Jerusalem in 1994 as an independent, non-profit institution to contribute to the policy-making process by conducting economic and social policy research. MAS is governed by a Board of Trustees consisting of prominent academics, businessmen and distinguished personalities from Palestine and the Arab Countries.

Mission

MAS is dedicated to producing sound and innovative policy research, relevant to economic and social development in Palestine, with the aim of assisting policy-makers and fostering public participation in the formulation of economic and social policies.

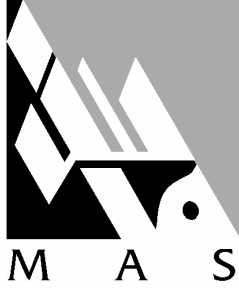
Strategic Objectives

- ♦ Promoting knowledge-based policy formulation by conducting economic and social policy research in accordance with the expressed priorities and needs of decision-makers.
- ♦ Evaluating economic and social policies and their impact at different levels for correction and review of existing policies.
- ♦ Providing a forum for free, open and democratic public debate among all stakeholders on the socio-economic policy-making process.
- ♦ Disseminating up-to-date socio-economic information and research results.
- ♦ Providing technical support and expert advice to PNA bodies, the private sector, and NGOs to enhance their engagement and participation in policy formulation.
- ♦ Strengthening economic and social policy research capabilities and resources in Palestine.

Board of Trustees

Ismail Al-Zabri (Chairman), Hassan Abu-Libdeh, Heba Handoussa, Maher El-Masri (Secretary), Muneeb Masri, Nabeel I. Kassis (Vice-Chairman), Rima Khalaf, Salam Fayad, Samer Khouri (Treasurer), Nabeel Kadoumi, George Abed, Ghania Malhis, Raja Khalidi, Samir Abdullah (Director General).

Copyright © 2007 Palestine Economic Policy Research Institute (MAS)
P.O. Box 19111, Jerusalem and P.O. Box 2426, Ramallah
Tel: ++972-2-2987053/4, Fax: ++972-2-2987055, e-mail: info@pal-econ.org
Web Site : <http://www.pal-econ.org>



Palestine Economic Policy Research Institute

Wage Differentials in a Fast-Changing Environment: A Sectoral Analysis

2007

Wage Differentials in a Fast-Changing Environment: A Sectoral Analysis

This study was prepared by Palestine Economic Policy Research Institute (MAS) research team, particularly by the following researchers:

Researchers: Awad Mataria, Researcher at MAS and Assistant Professor at BirZeit University
Sufian Barghouti, General Director of Economic Statistics Directorate at the Palestinian Central Bureau of Statistics.

Research Assistant: Wajeeh Amer, MAS.

Reviewers: Luay Shabaneh, President of the Palestinian Central Bureau of Statistics.
Dr. Yousef Daoud, Assistant Professor at BirZeit University.

Editorial Assistants: Laura Pereira
Jake Lomax

Layout: Lina Abdallah

Funding: This study was funded by **cordaid**.

Palestine Economic Policy Research Institute (MAS)
Jerusalem and Ramallah

©2007 MAS

FOREWORD

This study was conducted to assess wage differentials across the *public*, *private* and *non-governmental* sectors in the occupied Palestinian territory (oPt). The need for this study came in light of the current controversy regarding wage differentials between the public and the private sectors, where recent studies observed higher wages in the public sector compared to that in the private sector. This study aims to contribute solid arguments to the debate using appropriate empirical evidence.

The study is part of a series of studies conducted by the Palestine Economic Policy Research Institute (MAS) to understand and analyze the structure and performance of the non-governmental sector and its role in the Palestinian economy. The study was generously funded by Cordaid – Netherlands.

I would like to thank the three authors responsible for conducting the study, as well as all the organizations that cooperated in providing the necessary data and information.

Dr. Samir Abdullah
Director General

Table of Contents

1. Introduction	1
2. Methodology	7
2.1 Theoretical model	7
2.2 Econometric model	7
3. The Palestinian labor market	13
4. Results and Discussion	17
4.1 Sample Description	17
4.2 Wages Distribution	19
4.3 The Generalized Ordinal Logit Regression	22
4.4 Perceived differences as reported by NGO directors	28
5. Conclusion and Recommendations	33
References	37

List of Tables

Table 1: Variable Descriptions	10
Table 2: Average Daily Wages of Workers and Employees of the oPt, by Year and Place of Work, 1997-2006	16
Table 3: Percentage Distribution of Waged Employees in the oPt by Selected Characteristics: 1999, 2002, 2005 and 2006	18
Table 4: Distribution of daily wages of Employees in oPt	19
Table 5: Generalized Ordinal Logistic Regression on the Pooled data	22
Table 6: Generalized Ordinal Logistic Regression on the Pooled data from the four years – Adjusted for Potential Confounders	24
Table 7: Generalized Ordinal Logistic Regression for Each of the Four Years – Adjusted for Sector of Activity	26
Table 8: Generalized Ordinal Logistic Regression for Each of the Four Years – Adjusted for Sector of Activity	27
Table 9: Sample distribution according to their perceptions toward their wages compared with public sector employees.	29
Table 10: Distribution of the respondents according to their perceptions toward their wages compared with private sector employees	29
Table 11: Distribution of the responses on the reason behind the perceived negative wage differential in the NGO sector when compared to other sectors of the economy	30
Table 12: Distribution of responses reporting that wage levels in NGOs are below those of other sectors, with respect to their views on bridging this gap	31

List of Figures

Figure 1:	Distribution of Employees by sector, 2006	14
Figure 2:	Average Daily Wage in NIS for Workers and Employees of the Age 15 - 65 Years Old, Classified by Level of Education and Sector, 2006	15
Figure 3:	Cumulative distribution of daily wages as per sector	21

Executive Summary

Introduction:

All countries are concerned with wage differentials across their various economic sectors. Wages constitute the remunerations paid to employees and workers in the formal labor markets in exchange for service provision. In order to be an effective motivational tool, wages should be flexible enough to account for alterations in the general economic environment of the country. Wage differentials exist between the public and private sectors worldwide, though it varies from country to country as to which sector the differential favors. The public sector usually needs to compete with the private and the non-governmental (NGO) sectors in order to attract skilled professionals and experienced workers. Wage levels are generally found to depend on the characteristics of the workplace and on individual factors.

The Palestinian Labor Market is struggling at present with the unfavorable political and economic conditions found across the occupied Palestinian territory (oPt). Recently, as a result of the victory of Hamas in the latest Palestinian Legislative Council Elections, Israel has further strengthened its military and economic measures, and the international community has withheld aid previously provided to the public institutions. Therefore, the existence and movement of wage differentials across the different Palestinian economic sectors are of particular concern. Since its establishment, salaries and wages have constituted a major component of the budget of the Palestinian Authority. Preliminary observations indicate that the recent increase in wages in the public sector, as a result of the implementation of the new Civil Service Law, pushed public sector wage levels above their counterparts in the private sector. This does not give the full picture. In order to obtain a more meaningful comparison, wage comparisons between the public and private sectors of the economy should be based on “*statistically comparable counterparts*”, and must take into account uncertainties in reported values. Further, the importance of the NGO sector as an employer should be considered in the analysis.

This paper attempts to shed light on wage differentials and their determinants in the three main sectors of the Palestinian economy. The paper uses data from a series of four cross-sectional Labor Force Surveys conducted by the Palestinian Central Bureau of Statistics (PCBS) in the

OPT, in the years: 1999, 2002, 2005, and 2006. The different time-periods were intentionally selected to reflect major political, legal and economic changes that have taken place in the local context. In addition, the paper analyzes data from a recent survey, which addressed the perceptions of NGOs' directors about wage differentials between their respective organizations and other sectors of the economy, the direction of such differences and their variation over time.

Methodology:

It is generally suggested that the extra benefit associated with employment in one sector is equal to the wage differential between the sector of interest and other competing sectors. This study also takes into account that the extra benefit of one sector over another is dependent on the relative value of human capital and other workplace characteristics. "Daily Wages", analyzed as an ordinal variable, is estimated using a Generalized Ordinal Logistic Regression and a set of predictors. The wage data exclude workers in Israel, self-employed individuals and those performing unpaid activities.

Results and Discussion:

The results show that almost an equal number of individuals are employed by the public and private sectors (47.1% and 45%, respectively), compared to 7.9% of individuals employed by the NGO sector. The percentage of workers with daily wages less than 47.6 NIS constituted 34% of the study sample, whereas workers earning more than 99.5 NIS per day constituted 11.7%. Results demonstrate that low-paid jobs are more prevalent in the private sector than in the public and NGO sectors, with the latter being advantaged. As for high-paid employment, it is found that around 27.3% and 10.6% of all jobs in the NGO and private sectors, respectively, are remunerated at more than 99.5 NIS per day, compared to 10.2% of employments in public sector. However wages in the public sector vary less. This resulted in aggregate comparisons indicating that public sector employments are better paid on average than private sector employments ($p < 0.01$).

At the level of low-paid employment, the significant difference existing between the private and public sectors – favoring the public sector disappears when adjusting on the set of potential confounders; however, the employees of the NGO sector remain better off than their equivalents in the public sector. This general trend is confirmed when middle and high

paid employees are included in the analysis, with wages of NGO employees exceeding their equivalents in the private sector when middle-paid employees are included, and with wages of the private sector exceeding their equivalent in the NGO sector when highly-paid employees are included. Both sectors (NGO and private) remain consistently better off than the public sector.

The results from the disaggregate analysis demonstrate that wages in the NGO sector are higher than their equivalents in the private sector. The private sector, in turn, generally pays better than the public sector. The exception is with low-paid employees: here the results suggest that private sector wages were lower than those in the public sector. This same trend prevailed for the years 1999, 2002 and 2005. However, the situation in 2006 seemed to have changed. The results for 2006 suggest that public sector wages had increased to exceed those in the private sector, while wages in the NGO sector remained highest, except for the category of low-paid employments. When adjusted for the potential confounders, more consistent findings were evident. For all four years in question, private sector wages were found to be higher than their equivalents in the public sector, with employees in the NGO sector remaining the best paid. Calls for a reduction of real public sector wages based on public sector wages *seemingly* exceeding those in the private sector may therefore be damaging.

The results from the survey of NGOs should be interpreted with caution due to the low response rate to many of the questions. Only 9.4% of the respondents to the NGO survey perceived that NGO salaries are higher than their equivalents in the public sector, while 38.1% of the respondents indicated the inverse. Similarly, NGO directors reported that NGO wages and salaries also lag behind their equivalents in the private sector, and only 6.1% of the directors reported that wages and salaries in the NGO sector were higher than their equivalent in the private sector. On the other hand, NGO directors broadly reported no positive expectations toward bridging the gap in wage differential in the near future.

Conclusion and Recommendations:

Results demonstrate that wages in the NGO sector were higher than the private sector equivalent, which, in turn, provides higher wages than the public sector. Decisions on wage levels in the public sector, in particular, have to be made in a context where any attempt to limit them will restrict the capacity of ministries to attract capable employees with sufficient

expertise, and may limit the motivation of public sector employees. Nevertheless, efforts should be made to improve government capacity to manage its scarce resources through linking employees' payments with their productivity.

The non-governmental sector has always played, and continues to play, a critical role in the economic and social development of the OPT. Under the current situation of political and economic impasse, which mainly impacts upon the public sector, it becomes especially important that the NGO sector understands the impact it may have in driving wage inflation, and that all parties assume greater responsibility for maintaining balanced financial incentives across the sectors of the economy, so that a corresponding balance of skilled individuals may be retained.

1. Introduction

All countries are concerned with the existence and extent of wage differentials across their different economic sectors. However, it becomes of vital importance in countries where the public sector absorbs a significant share of the waged workforce, as this impacts the level of wages and shapes employment policies not only in the public sector but, consequently, in all sectors of the economy. Any increase in the share of waged employment in the public sector culminates in inflated public expenditures and burdens the government's budget. In the case of developing countries, public resources continue to be extremely scarce and many governments seek to further limit these resources in order to encourage more efficient market policies through privatization. An assessment of the direction and extent of wage differentials across different sectors of the economy - and their determinants - would help to develop policies that enable all sectors to attract good quality employees, optimize their public expenditures and enhance the welfare of the population.

Wages constitute remunerations paid to workers in the organized/ formal labor markets in exchange for the services they provide. Here we will define organized/ formal labor markets as those characterized by contractual arrangements between workers and employers¹. In organized/ formal labor markets, wages are, theoretically, set to reflect the monetary value of the provided service. According to the laws of economics, the value of the service provided increases along with an increase in monetary exchange value. Therefore, wages generally indicate the level of productivity of an employee/ worker². In order to be an effective incentive, wages should be flexible enough to absorb fluctuations in the economic environment, accommodate for change in an individual's purchasing power, the general increase in the cost of living, or price inflation.

¹ http://www.adb.org/SocialProtection/appendix9_1.pdf (Accessed on 24 July 07).

² Although a slight distinction exists between an "employee" and a "worker", the two terms are used interchangeably here. In general, the majority of people in work are employees. One is classed as "employee" if she/ he works under a contract of employment (<http://www.direct.gov.uk/>; Accessed on 30 July 2007) – this in general includes: self-employed, waged-employed, unpaid family members or others (PCBS, 2006). 'Workers' is a broader category than 'employees' which excludes those who are 'self-employed'. A 'worker' is an individual who works for an employer, whether under a contract of employment or by any other contract where an individual undertakes to perform any kind of work or service. The following groups of people are likely to be workers but not employees: most agency workers, short term casual workers and some freelancers (<http://www.direct.gov.uk/>; Accessed on 30 July 2007).

A number of studies have addressed the structure of wages in private and public sectors of many developed and developing countries; e.g., Tansel (1999) on Turkey, Lokshin and Jovanovic (2003) on Yugoslavia, Melly (2003) on Germany, Hyder and Reilly (2005) on Pakistan, Leping (2005) on Estonia, Olarilaping (2005) on India, and Lucifora (2006) on France. These studies, amongst others, indicated that the primary reason for wage differentials in different sectors is the prevailing economic, political and institutional environment. Indeed, each sector has its own characteristics and goals that directly determine its wages. The public sector, for instance, is not governed by the pursuit of profit, as is the case of the private sector and part of the non-governmental sector. This goes some way towards explaining why the private and non-governmental sectors are usually concerned with revenue maximization and/ or cost minimization. This is also valid for the not-for-profit non-governmental sector, which – despite not being driven by profit – remains responsible for covering the costs of its activities. In addition to the factors mentioned above, the unique characteristics of the workplace and those of the worker also play a role in defining the level of wages. These include for instance, the level of education and level of experience.

In many countries, especially developing countries, the public sector needs to compete with the private and the non-governmental sectors in order to attract skilled and experienced workers. It is often the case that the minimum wage in the public sector is set in accordance with the equivalents in the private and the non-governmental sectors, with no ceiling (or floor) being taken into account. This is facilitated by the public sector being able to put extra burdens on other sectors by the medium of taxation. Much evidence points to the existence of wage differentials between the public and private sectors worldwide, with changing directions from one country to another depending on the country's political and economic policies. In some developing countries, like India (Olarilaping, 2005) and Pakistan (Hyder, 2005), empirical evidence suggests a favorable positioning for the public sector, with higher wages being associated with public employment. Similarly, other studies examining wage differentials in OECD countries, such as the studies in Turkey and Germany, show that the public sector usually offers higher wages than the private sector, explaining the need for market powers to enhance the productivity and improve the decision-making processes in the former. Disney (2001) and others, suggest that the existence of wage differentials between the public and private sectors is related to the powers of coercion which the public sector holds over the private sector: for example, the ability to organize general strikes. Evidence also suggests

that the favored situation of the public sector is sometimes partly associated with electoral objectives and the voting process (Disney, 2001). However, in countries like Estonia (Leping, 2005) and France (Lucifora, 2006), the differential is in favor of the private sector.

The existence of any wage differential across the different economic sectors in the oPt, and its direction, is of particular concern. Firstly, the territories are composed of two distinct territorial units: the West Bank and Gaza Strip, which are geographically separated by Israel. The Palestinian economy has endured numerous phases of de-development (Roy, 1995, 1999) due to its historical and geopolitical conditions. Since the occupation of the Palestinian land, Israel has used a variety of methods to influence the Palestinian economy and render it dependent on the Israeli economy. This has included a sieges and closures, the confiscation of land, the separation of people from their land, and the destruction of infrastructure - all leading to an increase in unemployment rates and in the number if individuals living under the poverty line. Indeed, over time, and also with the amounting burden of land and water confiscation, Palestinians became the 'elastic army of labor', which Israel could employ at cheap rates whenever it needed and discard when unnecessary. Consequently, the oPt has constantly suffered from hostile economic conditions as a result of its unstable political situation. Following the establishment of the PNA in 1994 after the signing of the Oslo Accords between the Palestinian Liberation Organization (PLO) and Israel, the oPt entered into an economic recovery phase which was reflected in the improvement of many economic indicators. For instance, the real GDP for the West Bank (excluding East Jerusalem) and Gaza Strip increased by 69% between 1994 and 1999 (MAS, 2001). The trend has, however, reversed after the visit of Ariel Sharon to al-Haram al-Sharif and the outbreak of the Second Palestinian Intifada in September of 2000. Consequently, in 2001, the real GDP for the oPt declined by 8.3% compared to the year 2000 (MAS, 2003). All the factors above have influenced the 'work culture' in the oPt, resulting in individuals being more willing to engage in any kind of work regardless of their qualifications or the nature of the work - for example, university graduates taking on unskilled employment.

Recently, as a result of the Hamas victory, in the Palestinian Legislative Council Elections, Israel has further tightened its military and economic controls, and the international community has withheld funds previously provided to the public institutions. The blockade extended to all public institutions, including ministries, which has caused an economic crisis

amongst the Palestinian civil service. The blockade was manifest in the suspension of international funding to PNA institutions. It is important to mention that several political attempts were made to improve the economic situation in the oPt and break the political and economic impasse. The latest attempts were the formulation of a national unity government, followed by an emergency government.

The PNA's salaries and wages constitute a major component its budget³. For instance, in December 2006, the Ministry of Finance reported that salaries and wages constituted 68.3% of the entire PNA budget³. Data from national Labor Force Surveys (LFSs) shows that employment in the public sector constitutes almost a quarter of all employments in the country⁴ - amounting to 23.7% in 2006. These indicators – especially with the current blockade – are a challenge for decision-makers as they must draw policy to keep the economy afloat and also deal with the incapacity of the local labor market to avoid total collapse. Decisions are made in an environment where a restraint on wages would diminish the motivation of government employees, limit their productivity, and increase their suffering, particularly given the high inflation rates of recent years. Moreover, any decision to limit wages in the public sector would restrict the capacity of ministries to maintain requisite levels of expertise amongst its workforce.

Preliminary observations of the Palestinian case indicate a recent increase in wages in the public sector (World Bank, 2007). In a 2007 report, the World Bank states that:

“After controlling for differences in age, the level of education, marital status and skills, workers in the public sector in the West Bank & Gaza on average earn a significant premium of around 15 percent over their private sector counterparts.” (World Bank, 2007 : 73).

The premium is mainly due to a series of large salary increases which took place in the public sector in 2004 and 2005 resulting from the new Civil Service Code. Indeed, this new law intended to maintain the purchasing power of public sector workers and aimed to achieve comparable levels of wages to those in the private sector. This was expected to help make the

³ Ministry of Finance, 'Report on Revenues, Expenditures and Financing Sources: January to December 2006', 21/2/2007, (Preliminary Findings). <http://www.mof.gov.ps/monthly-reports/2006/1to12-2006/2.htm> (last accessed 01/08/07).

⁴ The Palestinian Central Bureau of Statistics, Labor Force Survey, 2006.

public sector more competitive *vis-à-vis* the private and the non-governmental sectors, and help it to attract good quality employees. However, as stated in the 2007 World Bank document, the assumption that public sector workers are underpaid would appear to be untrue when comparing the public and private sectors (World Bank, 2007: 73). However, comparisons between the public and private sectors in any economy should be based on comparing *statistically comparable counterparts* (Balnk, 1985; Borja, 2002). This is particularly valid in the case of Palestinian where huge discrepancies exist between the public and private sectors in the scope of available employment, the nature of the work practiced, and the modalities of remunerations. Hence, although adjustment on potential confounders (such as age, education, and others) is indispensable, it is no less important to also include wage comparisons between unique kinds of employment. A second consideration to be taken into account when analyzing wage differentials through surveys is the inaccuracies in reported values due to the nature of interviews. Uncertainties in reported values could be minimized using wage intervals rather than precise continuous values. Interval regression has been suggested when analyzing a category of wage variables where wages are reported in intervals rather than as a continuous variable (Böckerman, 2006). The above considerations should be taken into account to assess more accurately the existence and direction of wage differentials in the oPt.

Although many studies have addressed the issue of wage differentials across the public and private sectors in different countries, not enough efforts have been made in examining wage differentials between workers in these sectors and the non-governmental sector. This paper attempts to shed light on wage differentials and their determinants in the three main sectors of the Palestinian economy. Angrist (1995, 1996 and 1997) studied the impact of contextual changes, from both Palestinian and Israeli factors, on the returns on schooling level in the oPt. Daoud (2005) analyzed the gender gap in the specific case of the returns on schooling in the oPt. This paper departs from the analysis of the impact of schooling on wages, and analyzes other potential determinants instead. The main questions that remain to be answered are: whether any wage differentials exist between the public, private and non-governmental sectors in the Palestinian economy; and what the direction and determinants of these differentials are.

This paper uses data from a series of four cross-sectional Labor Force Surveys (LFSs) conducted by the PCBS in 1999, 2002, 2005, and 2006.

The different time-periods were intentionally selected to reflect the major political, legal and economic changes that have taken place in the oPt. 1999 represents a period of relative political stability accompanied by emergent economic growth that ensued following the Oslo Accords. 2002 witnessed a notable escalation of violence in the oPt that accompanied the outburst of the second *Intifada*, the installation of Israeli Army checkpoints and the erection of the Separation Wall, with their overwhelming negative impact on the functioning and performance of the Palestinian economy in general, and the Palestinian labor market in particular. 2005 saw the implementation of the new Civil Service act which introduced new rules to the arena of the labor market. 2006 saw major changes in the general economy of the country, following the financial and political sanctions imposed by the international community on the Hamas-led Palestinian Government.

In addition, the paper analyzes data from a recently conducted survey by the Palestine Economic Policy Research Institute (MAS), in cooperation with PCBS. Part of the survey addressed the perceptions of directors of Non-Governmental Organizations (NGO) about the existence, if any, of wage differentials between their organizations and other sectors of the economy. The NGO directors were also asked about the direction of such differences and how they perceived past variations. The survey was conducted to provide some qualitative responses and a better understanding of potential wage differentials. The survey included all operating organizations classified as NGOs in the oPt in 2006. Collating the analysis of empirical economic data and opinions on perceived disparities should help build a broad picture of this issue in the Palestinian economy. The inclusion of the NGO survey in the paper was also important because this paper is produced as part of a larger research project aiming at investigating and understanding the employment at the NGO sector. The next section summarizes the research methodology. Following the development of a theoretical model of wage determinants, the section describes the utilized econometric estimation techniques and their appropriateness. This is followed by a general description of the two datasets used in the study. Section three describes the present structure of the Palestinian labor market. Section four presents and discusses the study's findings, before concluding with some remarks and recommendations.

2. Methodology

2.1 Theoretical model

The conceptual foundation for our analysis is based on considering a person's choice of one sector of employment over another. Although a number of factors may play role in defining the perceived pros and cons of certain employments – such as, job security, flexible working hours, working environment, and others – Van der Gaag and Vijverberg (1988) suggest that the perceived benefit of an employment sector is equal to the wage differential between that sector and other competing sectors. There may also exist some dependence on human capital, represented by the individual's own characteristics (e.g., age, gender, education, experience, etc.), and some economic and contextual characteristics of a workplace, like locality, economic activity, profession, etc. Formally, this could be represented by the following equation, where: W represents the individual's wage associated with a particular job, H represents the individual's characteristics, and WP represents the characteristics of the Work Place.

$$W = W(H, WP)$$

2.2 Econometric model

The variable of interest in our analysis is 'Daily Wages', which is reported in the Palestinian LFSs as an ordinal variable of four incremental categories. The use of 'daily', instead of 'weekly', 'monthly' or 'yearly', wages allows for an adjustment for the number of working days. At the data collection level, individuals are requested to report either their daily wage, or any other mode of remuneration, weekly or monthly, in addition to the number of working days, from which a daily wage is then calculated. Daily wages are originally calculated as a continuous variable, however, they are then recoded in an ordinal scale to account for potential uncertainties in the reported responses. Given its ordinal feature, an Ordinary Least Square estimator could not be used to describe and quantify the variations in daily wages across the board. An alternative approach consists of using a multinomial logistic regression. This treats the dependent variable as categorical measurement scale, hence, with no credit being given to its ordinal characteristic, implying loss of substantial amounts of information. Ordinal Logistic Regression has been recommended (Williams, 2006) as a suitable estimation technique to

assess the relation between an ordinal dependent variable and a set of predictors. The ordinal regression is an extension of the binary logistic model, used to fit a relationship between a dichotomous dependent variable and a set of predictors. In a binary logistic model, the natural logarithm of the odds of an event happening – e.g., the log of the ratio of the number of individuals who experience an event to the number of those who do not, which is also known as the logit of the event – is specified as a linear combination of a set of predictors. The coefficients in the binary logistic regression model tell how much the logit changes, based on the values of the predictor variables. In an ordinal regression, instead of modeling the probability of an individual event, one considers the probability of that event and those before it, therefore enabling a system of regression equations - representing the likelihood of different possible shifts between the various modalities of the dependent variable - to be estimated.

The ‘event’ of concern in our analysis is represented by the fact of belonging to a particular wage category or lower. Since the ‘Daily Wage’ variable is reported in four incremental categories, the likelihood of the following three events is modeled:

Let θ represent the event of belonging to category K or lower on the ‘Daily Wage’ variable, then:

$\theta_1 = \text{probability (belonging to category 1) / probability (belonging to category 2 or 3 or 4)}$

$\theta_2 = \text{probability (belonging to category 1 or 2) / probability (belonging to category 3 or 4)}$

$\theta_3 = \text{probability (belonging to category 1 or 2 or 3) / probability (belonging to category 4)}$

In Ordinal Logistic Regression, the natural logarithm of the different odds is specified as a linear combination of a set of predictors, thereby the following system of logits can be estimated:

$$\text{Ln}(\theta_i) = \alpha - \beta X$$

The minus sign before the coefficients for the predictor variables is used instead of the customary plus sign so that larger coefficients indicate an association with larger scores of the dependent variable (i.e. higher wages). Hence, a positive coefficient for a dichotomous factor (Z) means that higher wages are more likely for the category of interest ($Z=1$) compared to the category of reference ($Z=0$). A negative coefficient tells

of lower wages and is more likely in the category of interest. For a continuous variable, a positive coefficient means that as the values of the independent variables increase, the likelihood of higher wages also increases. One can also calculate $e^{-\beta}$, which represents the ratio of the odds for lower to higher scores as associated with different predictors.

A restrictive postulation that enables the analysis, and the presentation of the results, consists of assuming that the different probabilities across the modalities of the independent variable are constant in the formulas above: $\theta_1 = \theta_2 = \theta_3$. This culminates into a special case known as Proportional Ordinal Logistic Regression. The use of a Proportional Ordinal Logistic Regression is justifiable in case the lines representing the cumulative distribution of the dependent variable, as segregated by the modalities of the independent variable, are proven to be parallel. A Likelihood Ratio (LR) test can be used to assess the plausibility of the proportionality assumption for each of the potential predictors. The more general situation that releases this assumption is known as the Generalized Ordinal Logistic Regression. In the present analysis, the 'event' of concern is represented by the fact of belonging to a particular wage category, or lower. The list of predictors includes a set of human capital characteristics and other characteristics of the workplace.

i. Variables and Data preparation

This paper uses data from four LFSs conducted by PCBS in the years 1999, 2002, 2005 and 2006. The data was acquired from PCBS and prepared for the purposes of the present study. The study's population consists of all waged adult individuals working in the public, private and NGO sectors of the oPt. This excludes workers in Israel and in settlements, self-employed individuals and those performing unpaid activities. The analysis is restricted to individuals aged 15 to 65 years old, and excludes individuals with missing or unknown wage information. The dependent variable in the different subsequent analysis is the 'Daily Wage' variable was provided by PCBS and fits into four categories of an ordinal nature: less than 47.6 NIS, 47.6-67.1 NIS, 67.1-99.5 NIS, and more than 99.5 NIS per day⁵. Several recodes of the set of independent variables were held to guarantee appropriate inter-group comparisons. *Table 1* presents a description of the dependent and the list of independent variables used in the analyses.

⁵ The cut-off points represent the average values used in the four surveys which were noted to increase from one year to another. For each of the years, the cut-off points represented the four quartiles of the wage distribution.

Table 1: Variable Descriptions

Variable	Description
Daily Wage	Daily Wage expressed in four categories. a) less than 47.6 NIS, b) 47.6-67.1 NIS, c) 67.1-99.5 NIS, and d) more than 99.5 NIS.
Year	The year in which the survey was conducted.
Gender	The gender of the worker.
Age	Age of the worker at the time of the survey: a) 15-24 b) 25-34 c) 35-44 d) 45-54 e) 55-65
Schooling	Number of years of education: a) 0 b) 1-11 c) 12 d) 13+
Experience	Number of months of experience: a) 1-12 b) 13-36 c) 37-60 d) 61-120 e) 121+
Sector	Sector of work: a) Public b) NGOs c) Private
Profession	Type of Occupation: a) Administrative b) Technical c) Service
Industry	Economic activity: a) Agriculture b) Manufacturing c) Construction d) Commerce, Hotels and Restaurants e) Transport f. Services
Locality	Locality of work: a) Urban b) Rural c) Camp

In addition, analysis was pursued on selected variables resulting from a recent survey about the perception of wage differentials by the directors of NGOs – i.e. the perceived differential between their respective organizations and other sectors of the economy, with regard to equivalence in employment (in terms of type of profession and level of experience). The questionnaire also addressed the perceived magnitude of difference and how it had varied over time. More details on the questionnaire and the characteristics of the study sample are provided elsewhere.⁶

ii. Analysis

Univariate analysis is used to describe the distribution of the wage variable over the entire study population. This is followed by a series of bivariate analyses attempting to assess the correlations between the ‘Daily Wages’ variable and the potential explanatory variables. Student t-test and Chi-2 are used where appropriate to assess

⁶ See NGO mapping 2006 held by MAS and PCBS.

significant inter-group differences – *please note that results from the bivariate analyses are not reported in the present paper*. Multivariate analysis is then conducted using the Generalized Ordinal Logistic Regression to assess the relation between the categories of wage and the set of independent variables, to ascertain the presence of significant differences between the different economic sectors, and the direction of difference. The appropriateness of the constrained Proportional Ordinal Logistic Regression is first tested for each of the independent variables, and retained where appropriate. Descriptive analyses were conducted using SPSS release 13 for Windows[®], and econometric analyses were pursued using STATA package version 9.1 for Windows[®].

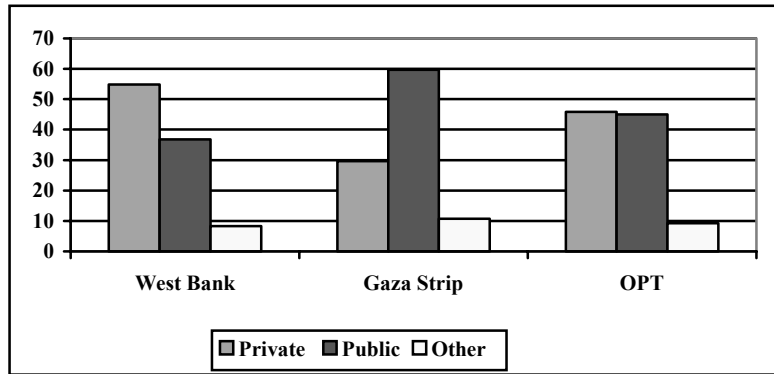
Recent econometric and statistical packages, including STATA, allow in their design to assess the relation between an ordinal dependent variable and a set of predictors, while testing the appropriateness of the proportionality assumption. The `gologit2` function, with `autofit` specification, as proposed by Richard Williams (2006), goes in this direction. The `autofit` specification allows for the assessment of the appropriateness of proportional and non-proportional specifications of a set of predictors - based on a built-in statistical test of proportionality, which is conducted on each of the independent variables (i.e. a Likelihood Ratio test). The analysis passes through an iterative process where it first estimates a totally unconstrained model, and then conducts a series of Wald tests on each independent variable individually to see whether its coefficients differ across the different logit equations - i.e. to find out whether the independent variable meet the proportionality assumption. If the Wald test is statistically insignificant for one or more of the variables, the variable with the least significance value is constrained to have equal effects across the logit equations. The model is then re-estimated with constraint, and the process is repeated until there is no more variable that meets the proportionality assumption. Results from the above analysis are presented in *Section 4*, after a general description of the structure and composition of the Palestinian labor market.

3. The Palestinian labor market

The Palestinian labor market has been going through severe crisis since the year 2000 as result of various Israeli measures to compromise the Palestinians' capacity to uphold their own economy. Starting from September 2000 onwards, unemployment levels have continued to escalate, mainly due to the inability of Palestinian workers to work in Israel, thereby changing the size and composition of the class of workers in terms of sector and profession. For instance, in the year 2006, the percentage of Palestinian workers in Israel and settlements reached 9.6% of all Palestinian workforce, compared to 22.1% prior to the outbreak of the second Palestinian Intifada, and almost one-third of the entire labor force during the 1980s. Indeed, current Israeli policies aim to completely free the Israeli labor market of Palestinian workers by 2008 (Adiv, 2005) and replace them with workers from Eastern Europe and Asia. On the other hand, various Israeli policies played an essential role in undermining the performance of the Palestinian labor market. These included closures and siege of Palestinian localities, through the installation of hundreds of checkpoints and the establishment of a Separation Wall that assisted in separating Palestinians from each other, and from the land they cultivate, and imposing restrictions on the movement of people and goods. These measures undermine the Palestinians' capacity to market their own products in Palestinian towns and to export them to the world - thereby destroying the infrastructure of the emerging Palestinian economy and damaging its productivity.

In 2006, Palestinian laborers who depend on wages for their livelihood reached 55.9% of the total workforce in the oPt - 50.4% in the West Bank (WB), and 69.6% in the Gaza Strip (GS). More than four-fifths of waged-employment consists of male employees (81.8%) and the public sector alone employs 45% of all waged-workforce (i.e. those in public, private and non-governmental sectors). The GS has a higher dependency on wages coming from the public sector than the WB, with 59.7% of the waged workforce in the public sector being in the GS, and 36.8% in the WB. *Figure 1* below illustrates that non-governmental organizations such as international institutions, including UN institutions, employ less than 10% of the workforce.

Figure 1: Distribution of Employees by sector, 2006

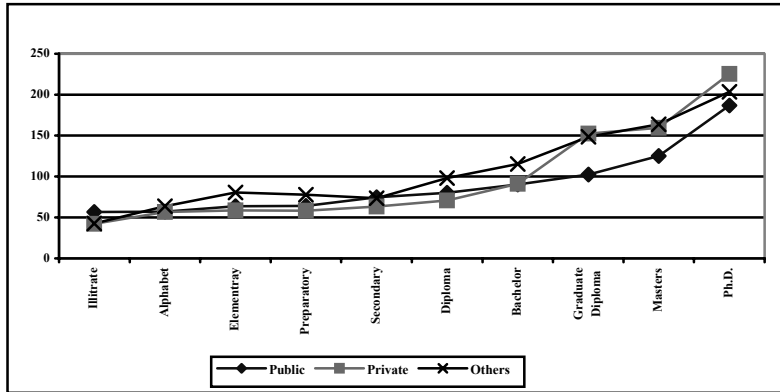


Source: PCBS, labor force survey, 2006.

The percentage of full-time employment in the year 2006 amounted to 68.5% of the total workforce (66.8% amongst males and 76.7% amongst females), which is much lower than in 1999, when full-time employment reached 82.8% (82.6% amongst males and 83.9% amongst females).

In 2006, the average daily wage in the oPt reached 75.2 NIS – 78.6 NIS in the WB and 69.9 NIS in Gaza. Additionally, the wages of males were higher than those of females - the average daily wage for males was 75.8 NIS, and 72.2 NIS for females. *Figure 2* clearly shows that wages increase with education level in all three sectors of the economy. (The third sector excludes public and private employment, and includes NGOs and other international organizations.) This indicates the importance of education in raising the level of wages in all sectors. *Figure 2* also shows that wages are similar for the private and public sectors for employees with primary level education and lower. The wage gap starts to increase with the level of education attained by the employee - with wage levels exhibiting higher increases in the private sector for the same level of education. Consequently, this shows that workers exceeding secondary levels of education obtain higher average wages in the private sector than their counterparts working in the public sector.

Figure 2: Average Daily Wage in NIS for Workers and Employees of the Age 15 - 65 Years Old, Classified by Level of Education and Sector, 2006



Wages in the oPt are characterized by high levels of instability due to the overall fast-changing economic situation induced by a series of crises in the Palestinian labor market. The latest crisis was the almost complete cut in payments of wages to governmental employees, and impact this had on the overall performance of the Palestinian economy, especially the private sector. Nevertheless, there has also been a notable rise in wage levels in the last few years, with daily wages increasing from 65.3 NIS in 2003 to 75.2 NIS in 2006, an average annual increase of 5.1%. A significant increase was in the public sector, where the average annual increase reached 9.7% compared to 1.8% in the private sector, and 2.1% in the third sector. The increase in wages in the public sector stemmed mainly from wage adjustment made in 2004. *Table 2* summarizes the average daily wages of Palestinians working in the WB, GS, Israel and Israeli settlements, and their variation over time.

The increase in public sector wages was not significant for workers exceeding secondary level education when compared to other sectors. For employees with higher education, wages remained at a lower level than their peers in the private and third sectors. The outcome of the average annual increase in the public sector predominantly affected workers with primary education levels who follow military/ security careers.

Table 2: Average Daily Wages of Workers and Employees of the oPt, by Year and Place of Work, 1997-2006.

Year	West Bank	Gaza Strip	Israel and Settlements
1997	51.7	43.6	91.5
1998	57.6	47.5	100
1999	66.2	51.4	105.8
2000	69.5	53.3	110.4
2001	69.3	54.4	107.2
2002	71.4	54.9	117.3
2003	72.7	53.2	125.1
2004	72.6	58.2	126.7
2005	73.7	61.9	126.9
2006	77.1	68.9	131.6

Source: PCBS, Labor Force Survey – several years.

4. Results and Discussion

This section presents a description of the study sample and results from the analysis conducted with the datasets issued from the four LFSs and the NGOs survey.

4.1 Sample Description

Table 3 shows that almost an equal number of individuals are employed by the public and private sectors - 47.1% and 45%, respectively - and only 7.9% are in the NGO sector. There is a large discrepancy between male and female workers, with the male workforce constituting around 82% of the study sample. The majority of workers were aged between 25 – 44 years (constituting 60.1% of the study sample), and only 4.7% of workers are 55 – 65 years old. As for the workers' level of education, the results suggest that while the percentage of individuals with 1-11 years of schooling was about 44.1%, around 4.6% of the study sample are illiterate⁷. Those with only secondary education make up 9.4% of the study sample and 41.9% have higher education qualifications. As for the employee's level of experience, results suggest that the percentage of workers with a less than one year experience reached 22.7%. The percentage of persons with 3-5 years experience was 16.3%, and the percentage with 10 years or over reached 17.6%. Finally, results show that most of the workforce is concentrated in the service sector, which accounts for 63.7%. Given that a sub-sample of respondents is purposively repeated in the different LFSs – so as to constitute a small panel used for specific investigations – the aggregated sample does not constitute a real random sample, and its descriptive data should be interpreted in relation to the range of values estimated for each of the survey's years.

⁷ The adjective illiterate is used to describe those reportedly not having accomplished any schooling year.

Table 3: Percentage Distribution of Waged Employees in the oPt by Selected Characteristics: 1999, 2002, 2005 and 2006.

<i>Variable name</i>	Year				
	1999	2002	2005	2006	All Years
Sector					
Public sector	40.1	51.8	47.9	48.6	47.1
NGO sector	6.4	9.7	7.5	8.1	7.9
Private sector	53.5	38.6	44.6	43.4	45.0
Gender					
Male	83.5	81.5	81.7	81.4	82.0
Female	16.5	18.5	18.3	18.6	18.0
Age					
15-24 yrs	28.4	19.5	19.9	20.2	22.0
25-34 yrs	34.5	33.4	34.8	33.8	34.1
35-44 yrs	22.2	27.5	26.6	27.3	26.0
45-54 yrs	11.1	14.3	13.7	13.9	13.2
55-65 yrs	3.8	5.4	4.9	4.7	4.7
Schooling					
0 schooling yrs	16	0.9	0.7	0.7	4.6
1-11 schooling yrs	47.2	40	45.3	44.2	44.1
12 schooling yrs	0.7	13.6	11.3	11.9	9.4
+13 schooling yrs	36.1	45.5	42.7	43.3	41.9
Experience					
≤1 yr	25.4	18.5	23.3	23.7	22.7
1-3 yrs	27.2	24.2	17.4	17.7	21.6
3-5 yrs	19.9	18.1	14.6	12.5	16.3
5-10 yrs	12.5	22.5	26.4	25.6	21.8
+10 yrs	15	16.7	18.4	20.5	17.6
Profession					
Administrative	38.1	49	45.8	44.6	44.4
Technical	40.3	34	34.6	36.2	36.3
Service	21.6	17	19.6	19.2	19.3
Economic activity					
Agriculture	3.1	2.7	3.4	3.5	3.2
Industry	17.5	11.2	12	11.3	13.0
Building & Construction	12.9	7.1	8.9	7.9	9.2
Commerce	8.1	6.5	8.3	8.7	7.9
Transportation & communication	3.4	2.4	3.1	3.2	3.0
Service	55	70.2	64.3	65.4	63.7
Locality					
Urban	46.5	49.0	46.6	44.7	46.7
Rural	30.0	25.8	30.1	32.0	29.5
Camp	23.5	25.2	23.4	23.3	23.8
Total	14452	8816	13012	13080	49360

4.2 Wages Distribution

Table 4 describes the distribution of daily wages as a set of economic and demographic indicators. Given that different cut-off points were used in the various surveys to regroup individuals into four categories, the mean values of the different cut-off points was estimated and used to categorize the different levels of daily wages. The four categories of daily wages are: less than 47.6 NIS, 47.4 to 67.1 NIS, 67.1 to 99.5 NIS, and more than 99.5 NIS.

Table 4: Distribution of daily wages of Employees in oPt

Variable name	Year				Total
	Less than 47.6 NIS	47.6-67.1 NIS	67.1-99.5 NIS	More than 99.5 NIS	
Sector					
Public sector	6269 (27.3%)	7806 (34.0%)	6527 (28.5%)	2340 (10.2%)	22942 (100%)
NGO sector	758 (19.9%)	643 (16.9%)	1366 (35.9%)	1041 (27.3%)	3808 (100%)
Private sector	9776 (43.2%)	5186 (22.9%)	5253 (23.2%)	2395 (10.6%)	22610 (100%)
Gender					
Male	13488 (33.3%)	11122 (27.4%)	10954 (27%)	4976 (12.3%)	40540 (100%)
Female	3315 (37.6%)	2513 (28.5%)	2192 (24.9%)	800 (9.1%)	8820 (100%)
Age					
15-24 yrs	6442 (58.2%)	2758 (24.9%)	1583 (14.3%)	277 (2.5%)	11060 (100%)
25-34 yrs	5617 (33.3%)	5524 (32.7%)	4497 (26.6%)	1241 (7.4%)	16879 (100%)
35-44 yrs	3017 (23.8%)	3586 (28.3%)	4142 (32.7%)	1923 (15.2%)	12668 (100%)
45-54 yrs	1165 (18.0%)	1388 (21.4%)	2250 (34.7%)	1676 (25.9%)	6479 (100%)
+55 yrs	562 (24.7%)	379 (16.7%)	674 (29.6%)	659 (29%)	2274 (100%)
Schooling					
Illiterate	1305 (50.5%)	66.3 (25.7%)	495 (19.2%)	120 (4.6%)	2583 (100%)
1-11 schooling yrs	10543 (47.9%)	5901 (26.8%)	4389 (19.9%)	1177 (5.3%)	22010 (100%)
12 yrs	1650 (38.1%)	1235 (28.5%)	1001 (23.1%)	449 (10.4%)	4335 (100%)
+13 yr	3305 (16.2%)	5836 (28.6%)	7261 (35.5%)	4030 (19.7%)	20432 (100%)
Experience					
≤1 yr	6864 (60%)	2643 (23.1%)	1518 (13.3%)	410 (3.6%)	11435 (100%)
1-3 yrs	4626 (43.5%)	3361 (1.6%)	2027 (19.1%)	624 (5.9%)	10638 (100%)
3-5 yrs	2463 (30.8%)	2749 (34.4%)	2105 (26.3%)	672 (8.4%)	7989 (100%)
5-10 yrs	1951 (18.5%)	3190 (30.2%)	3897 (36.9%)	1530 (14.5%)	10568 (100%)
+10 yrs	895 (10.3%)	1690 (19.4%)	3598 (41.2%)	2540 (29.1%)	8723 (100%)
Profession					
Administrative	3659 (16.9%)	5951 (27.5%)	7662 (35.5%)	4337 (20.1%)	21609 (100%)
Technical	8020 (44.4%)	5167 (28.6%)	3718 (20.6%)	1161 (6.4%)	18066 (100%)
Service	5124 (52.9%)	2517 (26.0%)	1766 (18.2%)	278 (2.9%)	9685 (100%)

Variable name	Year				Total
	Less than 47.6 NIS	47.6-67.1 NIS	67.1-99.5 NIS	More than 99.5 NIS	
Economic activity					
Agriculture	1253 (79.1%)	261 (16.5%)	58 (3.7%)	12 (0.8%)	1584 (100%)
Industry	3095 (47.4%)	1551 (23.7%)	1415 (21.7%)	474 (7.3%)	6535 (100%)
Building & Construction	1221 (26.1%)	1278 (27.3%)	1683 (35.9%)	500 (10.7%)	4682 (100%)
Commerce	2037 (51.4%)	947 (23.9%)	714 (18%)	265 (6.7%)	3963 (100%)
Transportation & communication	577 (37.7%)	407 (26.6%)	380 (24.8%)	168 (11%)	1532 (100%)
Service	8620 (27.7%)	9191 (29.6%)	8896 (28.6%)	4357 (14%)	31064 (100%)
Local					
Urban	7892 (34.4%)	6199 (27%)	5845 (25.5%)	2996 (13.1%)	22932 (100%)
Rural	4384 (29.8%)	4179 (28.4%)	4486 (30.5%)	1661 (11.3%)	14710 (100%)
Camp	4516 (38.6%)	3254 (27.8%)	2808 (24%)	1114 (9.5%)	11692 (100%)
Total	16803 (34.0%)	13635 (27.6%)	13146(26.6%)	5776 (11.7%)	49360 (100%)

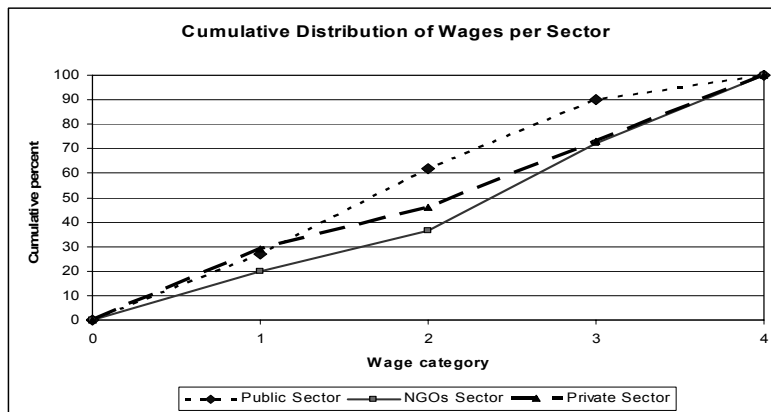
The percentage of workers with daily wages of less than 47.6 NIS constituted 34%, whereas workers with daily wages ranging from 47.4 to 67.1 NIS constituted 27.6%. Workers whose daily wage bracket falls in the range of 67.1 to 99.5 NIS constituted 26.7%, and workers earning a daily wage that exceeds 99.5 NIS per day constituted 11.7% of the study sample.

Considering the sector of activity, the percentage of workers earning less than 47.6 NIS a day in the public, private, and NGO sectors were, 27.3%, 43.2%, and 19.9%, respectively. In contrast, the percentage of workers exceeding a daily wage of 99.5 NIS in the same sectors reached 10.2%, 10.6%, and 27.3%, respectively. This indicates that the private sector contains a larger portion of low-paid employment and it is in the NGO sector that holds the highest level of high-paid employment. Results also show that 33.3% of male workers earn less than 47.6 NIS a day, while 12.3% of males earn more than 99.5 NIS a day. More than a third of female workers earn less than 47.6 NIS a day, while 9.1% of females earn more than 99.5 NIS a day. Regarding the years of schooling, the percentage of workers who did not undergo any years of schooling and receive a daily wage of less than 47.6 NIS, is 50.5%; and the percentage of workers with secondary education who earn more than 99.5 NIS a day, is 19.7%.

It is worth noting that a high percentage of workers in the study sample fall under the second or third category of wages – that is to say, their wages range from 47.6 to 99.5 NIS per day. The same also applies when considering an individual’s age, experience, and economic activity.

Figure 4 represents the cumulative distribution of daily wages as segregated by the three main sectors of the economy - public, private and NGO. A simple examination of the three curves suggests that low-payment employment is more prevalent in the private sector than in the public and the NGO sectors, with the latter being the most advantaged. Indeed, while around 29% of employment in the private sector is remunerated by less than 47.6 NIS per day, the public sector is only slightly lower with 27%, and the NGO sector is the lowest with about 20%. However, in high-paid employment, it is the public sector that gets left behind, with only 10.2% of its workers earning more than 99.5 NIS, while the same remuneration accounts for around 27.3% of the NGO sector and 10.6% of private sector. Nevertheless, wages in the public sector undergo lesser fluctuations when compared to those in the private sector. While around 62.5% of jobs in the public sector have daily remunerations between 47.6 and 99.5 NIS, only 46.1% of private jobs are similarly paid. This observation resulted in aggregate comparisons indicating that public sector employment is better paid on average than those in the private sector ($p < 0.01$). This aggregate comparison does not take into account human capital and workplace characteristics in each employment, which has been accounted for by using the ordinal logistic regression in Table 4.

Figure 3: Cumulative distribution of daily wages as per sector



4.3 The Generalized Ordinal Logit Regression

Table 5 presents the pooled regression results from the four years on the type of sector, taking the public sector as the reference group for comparison. Results suggest general concordance with the descriptive analysis presented above. It is demonstrated that, at the level of low-income jobs, wages in the private sector are ranked lower than their equivalents in the public sector, and wages in the NGO sector are higher than those in the public sector. This trend, however, varies when considering both low *and* high paying positions where the NGO sector takes the lead and is followed by the private sector and then the public sector – all results hold a level of accuracy to 0.001. As with the descriptive analysis above, these results remain generic as they do not take into account differences in the human capital and other contextual workplace determinants that might play role in defining wages in the different sectors. These differences are taken into consideration in the analysis below.

Table 5: Generalized Ordinal Logistic Regression on the Pooled data

	Coefficient 1 [#]	Coefficient 2 [#]	Coefficient 3 [#]
Sector (ref. Groups: public)			
NGO	0.3785	1.0171	1.2314
Private	-0.6765	-1.0941	0.2159
No. of observations	49,360		
Probability > chi2	<0.0001		
Pseudo R2	0.020		
Log pseudo-likelihood	-64,498.34		

[#] The different coefficients represent different groups of comparisons: Coefficient 1 represents comparing income group 1 to income groups 2, 3 & 4; Coefficient 2 represents comparing income group 1 & 2 to income groups 3 & 4; Coefficient 3 represents comparing income group 1, 2 & 3 to income groups 4. In a proportional ordinal logistic regression, all three coefficients are equal.

* Results are deemed accurate to 0.001 degree.

Adjusting on the set of confounders in *Table 1* reveals that the significant difference between the private and public sectors – for the benefit of the public sector – disappears ($p = 0.176$) when low-paid employment is compared to high-paid employment. The NGO sector employees remain better off than their equivalents in the public sector. This general trend is confirmed when middle and high paid employment are included in the analysis. The wages of NGO employees exceed their equivalents in the

private sector when middle-paid employment is included, and wages of the private sector exceed their equivalent in the NGO sector when highly-paid employment is included. Both sectors remain consistently better off than the public sector in these wage categories.

It is worth noting that, with adjustment for the above-mentioned confounders, wages are found to be generally increasing with time, although females consistently remain less well-paid than their male counterparts, and older employees are paid more than younger ones. As for the impact of education, measured through the number of schooling years, it is found that those having university education are better paid than those with only a high-school diploma, who are, in turn, better paid than illiterate workers. Although insignificant, these results suggest that illiterate employees might be better paid than some who completed some level of schooling. A worker's experience and seniority were also found to be positively associated with daily wage. Considering the nature of professions: employees with administrative jobs are better paid than those performing technical activities, who are in turn better paid than service workers ($p < 0.01$). As for type of economic activity, the results suggest that jobs in 'Building & Construction' are better paid than those in 'Services' and 'Transportation & Communication', followed by the 'Industry' and 'Commerce' sectors. This might be attributed to the level of risk associated with jobs in the different sectors. Finally, results suggest that employment in rural areas is better paid than those in urban areas, which are in turn better paid than those in refugee camps.

In order to assess variations in wage differentials over time, the above analysis is repeated for each of the surveys alone. The results in Table 7 demonstrate that wages in the NGO sector are higher than their equivalents in the private sector, which was in general better placed than the public sector. The exception is with low-paid employment where the results suggest that wages in the private sector are lower than wages in the public sector. This same trend prevailed for the years 1999, 2002 and 2005. However, the situation in 2006 seems to have changed. The results for the year 2006 suggest that, compared to the public sector, wages of the private sector are lower than those of the public sector; and wages in the NGO sector are higher than those in the public sector, except in the category of low-paid employment. This same trend appeared in the average-paid employment in 2005. Although indicative, these results remain generic as they do not take into account the various potential confounders expressed by human capital determinants and workplace characteristics, where were taken into account in *Table 7*.

Table 6: Generalized Ordinal Logistic Regression on the Pooled data from the four years – Adjusted for Potential Confounders

Variable name	Aggregate result – with adjustment on confounders					
	Coefficient 1 [#]		Coefficient 2 [#]		Coefficient 3 [#]	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Constant	-1.3182	<0.001	-3.9682	<0.001	-6.5854	<0.001
Sector (ref. group: Public)						
NGO sector	0.6321	<0.001	1.5115	<0.001	1.6928	<0.001
Private sector	-0.0615	0.176	1.0004	<0.001	1.7130	<0.001
Year (ref. group: Year 1999)						
Year 2002	-0.1009	0.007	0.1565	<0.001	0.6445	<0.001
Year 2005	0.2876	<0.001	0.3519	<0.001	0.5695	<0.001
Year 2006	0.2172	<0.001	0.4594	<0.001	1.0727	<0.001
Gender (Ref. group: Male)						
Female	-1.1799	<0.001	-1.0117	<0.001	-1.1179	<0.001
Age (Ref. group: 15-24 yrs)						
25-34 yrs	0.4376	<0.001	0.3969	<0.001	0.6202	<0.001
35-44 yrs	0.6141	<0.001	0.5695	<0.001	1.0285	<0.001
45-54 yrs	0.7735	<0.001	0.9043	<0.001	1.5987	<0.001
55-65 yrs	0.3788	<0.001	0.9229	<0.001	1.8497	<0.001
Schooling (Ref. group: 0 schooling years)						
1-11 schooling yrs*	-0.0160	0.763	-0.0160	0.763	-0.0160	0.763
12 yrs*	0.2537	<0.001	0.2537	<0.001	0.2537	<0.001
+13 yr	1.1708	<0.001	0.9918	<0.001	0.8833	<0.001
Experience (Ref. group: ≤1 yr)						
1-3 yrs	0.6248	<0.001	0.4745	<0.001	0.3947	<0.001
3-5 yrs	1.1080	<0.001	0.9616	<0.001	0.7869	<0.001
5-10 yrs	1.6152	<0.001	1.4407	<0.001	1.0606	<0.001
+10 yrs	2.1245	<0.001	2.0298	<0.001	1.5902	<0.001
Profession (Ref. group: Administrative)						
Technical*	-0.9144	<0.001	-0.9144	<0.001	-0.9144	<0.001
Service	-1.3511	<0.001	-1.5443	<0.001	-1.8840	<0.001
Economic activity (Ref. group: Agriculture)						
Industry	1.0758	<0.001	1.4897	<0.001	1.3623	<0.001
Building & Construction	2.3000	<0.001	2.6271	<0.001	2.1322	<0.001
Commerce	0.9151	<0.001	1.3730	<0.001	1.3490	<0.001
Transportation & communication	1.1313	<0.001	1.5948	<0.001	1.4221	<0.001
Service	0.8234	<0.001	1.4928	<0.001	1.5381	<0.001
Local (Ref. group: Urban)						
Rural	0.3563	<0.001	0.2534	<0.001	-0.0132	0.748
Camp	-0.2970	<0.001	-0.3483	<0.001	-0.4590	<0.001

No. of observations	49,237*
Probability > chi2	<0.0001
Pseudo R ²	0.1919
Log pseudo-likelihood	-53,151.002

- #: The different coefficients represent different groups of comparisons: Coefficient 1 represents comparing income group 1 to income groups 2, 3 & 4; Coefficient 2 represents comparing income group 1 & 2 to income groups 3 & 4; Coefficient 3 represents comparing income group 1, 2 & 3 to income groups 4. In a proportional ordinal logistic regression, all three coefficients are equal.
- *: A proportional ordinal logit is assumed based on a LR test of parallel lines.
- *: The total number of observations entered into the analysis is less than total number of 49,360 due to missing data on some of the variables.

Table 7: Generalized Ordinal Logistic Regression for Each of the Four Years – Adjusted for Sector of Activity

Variable name	Disaggregate result – without adjustment on confounders					
	Coefficient 1 [#]		Coefficient 2 [#]		Coefficient 3 [#]	
YEAR 1999	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>
Constant	0.5400	<0.001	-1.1383	<0.001	-3.0464	<0.001
Sector (ref. group: Public)						
NGO sector	0.9578	<0.001	1.5831	<0.001	1.6403	<0.001
Private sector	-0.1865	<0.001	0.5173	<0.001	0.5554	<0.001
<i>No. of observations: 14,452 Probability > chi2 = <0.0001 Pseudo R² = 0.021</i> <i>Log pseudo-likelihood = -17,887.14</i>						
YEAR 2002	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>
Constant	0.6723	<0.001	-0.7276	<0.001	-2.4648	<0.001
Sector (ref. group: Public)						
NGO sector	0.7367	<0.001	1.2584	<0.001	1.6015	<0.001
Private sector	-0.2088	<0.001	0.4382	<0.001	0.9862	<0.001
<i>No. of observations: 8,816 Probability > chi2 = <0.0001 Pseudo R² = 0.0249</i> <i>Log pseudo-likelihood = -11,537.79</i>						
YEAR 2005	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>
Constant	1.2899	<0.001	-0.2061	<0.001	-2.0483	<0.001
Sector (ref. group: Public)						
NGO sector	0.2559	0.009	0.9125	<0.001	1.1836	<0.001
Private sector	-0.8638	<0.001	-0.3468	<0.001	0.0195	0.770
<i>No. of observations: 13,012 Probability > chi2 = <0.0001 Pseudo R² = 0.023</i> <i>Log pseudo-likelihood = -17,039.485</i>						
YEAR 2006	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>	<i>Coefficient</i>	<i>P-value</i>
Constant	1.5500	<0.001	0.0130	0.639	-1.6590	<0.001
Sector (ref. group: Public)						
NGO sector	-0.3889	<0.001	0.5303	<0.001	0.9324	<0.001
Private sector	-1.4334	<0.001	-0.7341	<0.001	-0.0382	0.506
<i>No. of observations: 13,080 Probability > chi2 = <0.0001 Pseudo R² = 0.045</i> <i>Log pseudo-likelihood = -17,044.15</i>						

For an easier presentation of the coefficients of the independent variables that do not meet the condition of proportionality, the median values of the three coefficients of each of the independent variables are presented along with their associated p-value in *Table 8*. The variables with an asterisk indicate a violation of the proportionality assumption. Adjustment for the different potential confounders resulted in more consistent findings where, wages in the NGO sector are higher than wages in the private sector, and both are higher than their equivalents in the public sector (for the years of

the four surveys). Females were consistently found to be lower paid than males in all four surveys, even after adjusting on potential confounders, indicating a possible gender bias. The results suggest that individual daily wages increase with age up to the age group 45 – 54 years, and decreases after 55 years. The results suggest that wages increase with the level of education and experience. As for the type of profession, the results suggest that administrative jobs are more highly paid than jobs of a technical nature, which in turn are better paid than services. Considering the type of economic activity, it is clear that employees in the sector of ‘Building & Construction’ are best paid, followed by those in the sector of ‘Transportation & Communication’. Employees in the service sector are in general found to be the least paid in almost all the surveys. As with the analysis conducted on the aggregate data, results indicate that employees in rural areas are better paid than those in urban areas, who are better paid than those working in refugee camps.

Table 8: Generalized Ordinal Logistic Regression for Each of the Four Years – Adjusted for Sector of Activity

Variable name Survey Year	Disaggregate result – with adjustment on confounders							
	1999		2002		2005		2006	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Constant	-3.5533	<0.001	-5.3378	<0.001	-4.5647	<0.001	-3.9979	<0.001
Sector (ref. group: Public)								
NGO sector	1.9104	<0.001	2.0681	<0.001	1.4488	<0.001	0.9653	<0.001
Private sector [#]	1.5133	<0.001	1.7679	<0.001	0.7378	<0.001	0.3399	<0.001
Gender (Ref. group: Male)								
Female	-1.2728*	<0.001	-1.1147*	<0.001	-1.0688*	<0.001	-0.9644*	<0.001
Age (Ref. group: 15-24 yrs)								
25-34 yrs	0.5198	<0.001	0.4842*	<0.001	0.4681	<0.001	0.4677	<0.001
35-44 yrs	1.0008	<0.001	0.8067*	<0.001	0.6300	<0.001	0.4198	<0.001
45-54 yrs	1.3242	<0.001	1.2556	<0.001	1.0629*	<0.001	0.7202*	<0.001
+55 yrs	1.1480	<0.001	1.7299	<0.001	0.9395	<0.001	0.5231	<0.001
Schooling (Ref. group: Illiterate)								
1-11 schooling yrs	-0.0584*	0.308	1.0704	0.001	1.3866*	<0.001	1.1547*	<0.001
12 yrs	-0.6123*	0.014	1.1829*	<0.001	1.7547*	<0.001	1.4840*	<0.001
+13 yr	0.8846	<0.001	2.1768*	<0.001	2.5204	<0.001	2.1937	<0.001
Experience (Ref. group: ≤1 yr)								
1-3 yrs	0.3298*	<0.001	0.5668*	<0.001	0.7045	<0.001	0.6669	<0.001
3-5 yrs	0.8932	<0.001	1.0313*	<0.001	1.1891	<0.001	1.2178	<0.001
5-10 yrs	0.8782	<0.001	1.4787*	<0.001	1.6843	<0.001	1.6941	<0.001
+10 yrs	1.4764	<0.001	1.8733*	<0.001	2.3562	<0.001	2.4764	<0.001
Profession (Ref. group: Administrative)								

Variable name \ Survey Year	Disaggregate result – with adjustment on confounders							
	1999		2002		2005		2006	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Technical	-0.8269*	<0.001	-1.1716*	<0.001	-1.1160	<0.001	-0.9740	<0.001
Service	-1.4228	<0.001	-1.5139	<0.001	-1.6450	<0.001	-1.8558	<0.001
Economic activity (Ref. group: Agriculture)								
Industry	0.9373*	<0.001	1.5608*	<0.001	1.0599*	<0.001	0.9157*	<0.001
Building & Construction	2.3079	<0.001	2.8828*	<0.001	1.7962	<0.001	1.7040	<0.001
Commerce	1.0565*	<0.001	1.2151*	<0.001	1.0901	<0.001	0.9960	0.002
Transportation & communication	1.2520*	<0.001	1.5696*	<0.001	0.9496*	0.108	0.8268*	<0.001
Service	-0.8274	<0.001	1.4890	<0.001	0.9404*	0.096	0.9281*	<0.001
Local (Ref. group: Urban)								
Rural [†]	0.3722	<0.001	0.09021*	0.120	0.2244	<0.001	0.2026	<0.001
Camp	-0.4051*	<0.001	-0.4583*	<0.001	-0.4579	<0.001	-0.2338	<0.001
No. of observations	14,452		8,783		13,012		13,080	
Probability > chi2	<0.0001		<0.0001		<0.0001		<0.0001	
Pseudo R²	0.1824		0.2095		0.2112		0.2256	
Log pseudo-likelihood	-14,931.35		-9,319.28		-13,754.99		-13,818.64	

*: ^A proportional ordinal logit is assumed based on a LR test of parallel lines.

#: At the level of low remunerating jobs, wages in the private sector are ranked lower than their equivalent in the public sector for the years 2005 and 2006. A similar result is obtained with regard to wages at the NGO sector for the year 2006.

†: Compared to urban jobs, the data for the years 2002, 2005 and 2006, suggests that wages of rural jobs are lower ranked when high remunerating jobs are included in the analysis

4.4 Perceived differences as reported by NGO directors

Only 9.4% of the respondents to the NGO survey perceived that NGO salaries are higher than their equivalents in the public sector, while 38.1% of the respondents indicated the opposite (see Table 9). This finding is not inline with the fact that wages in the NGO sector are higher than that in other sectors. These results should, however, be interpreted with caution due to the low response rate – up to 40% of the respondents did not answer this question.

Table 9: Sample distribution according to their perceptions toward their wages compared with public sector employees.

Item	Frequency	Percentage
Wages are higher than in the public sector	130	9.4
Wages are lower than in the public sector	529	38.1
No difference	189	13.6
No response	540	38.9
Total	1388	100.0

Similarly, NGO directors reported that wage levels in their NGOs are behind that of their equivalents in the private sector, and only 6.1% of the directors regard wages in their sector as higher than their equivalent in the private sector (see *Table 10*).

Table 10: Distribution of the respondents according to their perceptions toward their wages compared with private sector employees.

Item	Frequency	Percentage
Wages are more than in the private sector	84	6.1
Wages are less than in the private sector	494	35.6
No difference	268	19.3
No response	542	39.0
Total	1388	100.0

When questioned about the reasons behind the perceived negative difference in wages in the NGO sector, compared to the other sectors of the economy, NGO directors generally agreed with the following reasons, to varying extents (see *Table 11*):

1. **The possibility that most employment opportunities in NGO are for short periods of time:** The answers were rather unclear, with only 12.5% of the total number of respondents answering the question, and 5.5% supporting this as a main reason for the wage differential between NGOs and different economic sectors.

2. **The possibility that working in NGOs requires a higher level of skills and experience:** Results indicate that 8.3% of the respondents who answered this question believe this to be true, while 4.2% of them disagree, with the majority having not answered the question.
3. **The nature of NGOs as non-profit institutions:** Results reveal that two-thirds of those who answered the question believe the non-profit characteristic of NGOs gives a perception of a negative wage differential between NGOs and other sectors of the economy - with NGO wages being lower than those in other sectors.
4. **The fact that many NGOs are connected to international headquarters:** According to the perceptions of those who answered the question, there are no significant impacts from this factor on wage differentials in the local market - only 5% of the respondents reported that they believe that having international headquarters has an impact on the payroll of local offices.
5. **The over-funding capacities of the NGOs:** Results demonstrate a general tendency to reject this as a factor but the financial siege imposed on the oPt at the time of the survey may have had an undue influence on the responses.
6. **The internal policies within the NGO management structure (e.g. work incentives):** This was examined to determine whether there is a need to introduce better incentive schemes in NGOs in order to improve employee productivity. Results showed that only 7.6% of those who answered the question agreed with this need, and 4.8% disagreed.

Table 11: Distribution of the responses on the reason behind the perceived negative wage differential in the NGO sector when compared to other sectors of the economy.

Reason	Agree (%)	Disagree (%)	Non-response (%)	Total
Short life of employment in NGOs	77 (5.5%)	97 (7.0%)	1214 (87.5%)	1388 (100%)
Level of skills needed for employment in NGOs	115 (8.3%)	58 (4.2%)	1215 (87.5%)	1388 (100%)
Non-profit nature of NGOs	107 (7.7%)	65 (4.7%)	1216 (87.6%)	1388 (100%)
Comparison to international headquarters	70 (5.0%)	103 (7.4%)	1215 (87.5%)	1388 (100%)
Abundance of funds available for NGOs	49 (3.5%)	123 (8.9%)	1216 (87.6%)	1388 (100%)
Active incentive systems in the NGOs	106 (7.6%)	66 (4.8%)	1216 (87.6%)	1388 (100%)

On the other hand, NGO directors reported that in general, there are no positive expectations in bridging the gap in wage differential in the near future. Indeed, only 1.5% of the participants reported that the gap may have a decreasing trend. However, it was unclear whether this decrease would come from an increase in the level of wages in the NGO sector or a decrease in the level of wages in other sectors. The latter may be due to the downturn in the Palestinian economy due to the measures imposed by the Israeli occupation. *Table 12* summarizes the responses to this specific question.

Table 12: Distribution of responses reporting that wage levels in NGOs are below those of other sectors, with respect to their views on bridging this gap

Item	Frequency	Percentage
Increasing	35	2.5
Decreasing	21	1.5
No change	45	3.3
No response	1287	92.7
Total	1388	100.0

5. Conclusion and Recommendations

Results demonstrate that wages in the NGO sector are higher than their equivalents in the private sector, which, in turn, offers higher wages than the public sector. Although this general trend prevailed during the years of 1999, 2002 and 2005, an inverse trend arose in 2006, when wages in the public sector exceeded those in the private sector, with the NGO sector staying in the lead. However, the former trend prevails over the latter when the analysis is conducted on data which represents the four time periods together - e.g. wages in the public sector are on aggregate, lower than those in the private sector. Although a shift in the trend appears to have taken place in 2006, such result should be interpreted with caution as other confounders must be adjusted to provide robust and conceptually sound empirical results. This needs to follow from an identification of potential wage determinants and to incorporate the different regression specifications. Adjustment for the different potential confounders resulted in more consistent findings where, for the all four survey years, wages in the NGO sector are higher than their equivalents in the private and public sectors.

Decisions on the wage levels of the public sector are made in a context where any attempt to limit them would restrict the ministry's capacity to attract capable employees with sufficient expertise, and would limit the motivation of the employees. Nevertheless, efforts should be made to improve the government's capacity to manage its scarce resources through introducing schemes such as performance-related pay, and taking into account what is being practiced in other sectors of the economy. Wages in the public sector are still, however, uniquely defined based on the academic qualification of the employee and her/ his experience. Here, the educational level of the employee determines her/ his basic salary, to which a certain percentage is added to reflect the number of years of experience. This approach is being utilized due to the absence of an alternative mechanism which is capable of accurately assessing the exact level of productivity. However, other measures of productivity are being utilized in the private and the non-governmental sectors in order to determine remunerations based on rules of efficiency.

The development of a 'good' fiscal system that is well-enforced would help the government to raise the necessary resources needed to cover its spending on wages – so long as wages are on evidence-based policies. In

the meanwhile, incentives should be made for the private and non-governmental sectors to become more involved in the provision of public services so as to absorb some of the burden currently shouldered by the public sector. The public sector could improve the overall situation by passing a labor law to invigorate business activity and increase labor absorption in the organized private sector, without undermining the required move towards greater equitability in salaries across sectors.

Adjusting for survey year, sex, age, education, experience, profession, working sector and living locality, the results from an ordinal logit regression reveal that wages in the public sector are consistently lower than their equivalents in the private sector, for both individual survey years and for the merged data file. Comparisons with the NGO sector were, however, less conclusive. When data from the different surveys are merged together, ordinal logit regression results demonstrate that wages in the NGO sector surpass their equivalents in the private sector, both before and after adjustment on the above-mentioned potential confounders. However, this result is undermined when data is segregated by the survey year, when results either become insignificant while preserving the trend, or demonstrate an inverse trend. The simple ordinal logit regression – i.e. regression with no adjustment on potential confounders – suggests that no significant difference existed between wages in the NGO sector and the private sector for the year of 1999, while in 2002, 2005 and 2006, such results favor the NGO sector. When adjusting for the potential confounders, this advantage in the NGO sector only persisted during 2005 and 2006.

The non-governmental sector has always played a critical role in the economic and social development of the oPt. Under the current political and economic impasse, in which the public sector is most adversely affected, there is a dire need for the non-governmental sector to assume more social responsibilities without negatively impacting the public sector by ‘poaching’ its employees through financial incentives. Serious attempts should be made by both sectors to reconcile their efforts and formulate common policies. In the same vain, international developmental organizations should also take into account the need to build a sustainable Palestinian economy and consider self imposed policies to limit the ‘brain drain’ from the public sector - usually as a result of higher wages and other financial incentives.

Results suggest that daily wages increase with an individual’s age. This remains true for both aggregate and disaggregate analyses. The age group

55 – 65 was the reference group in the regression and individuals belonging to this age category were generally found to be earning the most compared to younger groups. However, the age group 45 – 54 years is better placed in the 1999 and 2006 surveys. This might be more comprehensible if one takes into account the difficulties in movement for elderly people, in particular following the outbreak of the Second *Intifada* and the numerous restrictions which ensued. The majority of workers were found to be in the age range of 25 – 44 years (60.1% of the study sample), compared to only 4.7% of workers belonging to the age group 55 – 65 years. This reflects the burden on the 25 – 44 year olds, who represent 23.1% of the Palestinian population in the oPt. In assuming the needs of both the younger and older population (55 – 65 year olds represent 28.1% of the total Palestinian population living in the oPt), and considering the lack of social security benefits, there is an urgent need to identify what factor, besides age, tends to leave an individual unemployed. One would expect that the general circumstances of occupation, which constrain the social development of the Palestinian population, would play a role, but further investigation into what are known as ‘discouraged workers’ is needed in order for more robust conclusions to be made.

As with age, an individual’s wages were found to increase alongside their years of education. Considering the type of profession, it is found that individuals working in administration earn more than technical people and those occupying service positions. A general trend was found where employees of rural areas gain more than those working in urban areas and refugee camps.

It is worth noting that the analysis above is based on reported wages that are directly earned by workers. Indeed, a number of non-pecuniary factors may render public sector jobs preferable over jobs in the private sector. These factors include, job security, work difficulty, working hours and various fringe benefits. Non-pecuniary aspects of public sector jobs are difficult to come by in the private sector. Given these non-pecuniary benefits, workers may prefer the public sector even if its wages are lower than those in the private sector. Future research work should attempt to incorporate total compensations and the above mentioned non-pecuniary factors into the analysis to avoid potential bias (Tansel, 2004). This bias is sometimes caused by the differences between compensation policies in different sectors and the intrinsic characteristics in the sectors under investigation.

Finally, some of the study results should be interpreted with caution, such as the workers' experience. Indeed, in the local context, the experience attributed to an employee is not always proportional to her/ his level of seniority. This is because the international community attributes more experience to some employees more than others due to political considerations.

References

- Adiv, A. (2005). "Hidden in the Disengagement Plane: No Palestinian Workers by 2008." Challenge #92. <http://www.workersadvicecenter.org/They-Always-Return-big.htm>. Accessed on 28 July 2007.
- Angrist, J. (1995). "The economic returns to schooling in the West Bank and Gaza Strip." American Economic Review, 85(5): 1065–1087.
- Angrist, J. (1996). "Short run demand for Palestinian labor." Journal of Labor Economics, 14(3): 425–453.
- Angrist, J. (1997). "The Palestinian labor market: from Gulf War to autonomy." The Harvard Refugee Project, Unpublished paper.
- Blank, R. (1985). "An Analysis of Workers' Choice between Employment in the Public and Private Sectors". Industrial and Labor Relations Review, 38 (2): 211-224.
- Böckerman, P. and Ilmakunnas, P. (2006). "Do job disamenities raise wages or ruin job satisfaction?" International Journal of Manpower, 27(3): 290-302.
- Borja, G. (2002). "The Wage Structure and The Sorting of Workers into The Public Sector." National Bureau of Economic Research – Working Paper 9313. <http://www.nber.org/papers/w9313> (Accessed on 05 Aug 2007).
- Daoud, Y. (2005). "Gender gap in returns to schooling in Palestine." Economics of Education Review, 24, 633-649.
- Elena Glinskaya and Michael Lokshin. (2005). "Wage Differential between the Public and Private Sectors in India" Mimeo, World Bank, Washington DC.
- Hyder, A. and Reilly B. (2005). "The public Sector Pay Gap in Pakistan: A Quantile Regression Analysis" PRUS Working Paper no.33.
- Leping, K. (2005). "Public- Privet Sector Wage Differential in Estonia: Evidence Form Quantile Regression", Faculty of Economics and Business Administration, University of Tartu.
- Lucifora, C. and Meurs, D. (2006). "The Public Sector Pay Gap in France, Great Britain and Italy", Review of Income and Wealth, 52(1): 43-59.
- Lokshin, M and B. Javanovic. (2001). "Public-Private Sector Employment Choice and Wage Differential in Yugoslavia", World Bank, Washington DC.
- MAS (2001), Palestine Economic Policy Research Institute, Economic Monitor No. 8 – special issue 1994-2000.
- MAS (2003), Palestine Economic Policy Research Institute, Economic Monitor No. 10.
- Melly, B. (2002). "Public-Private Sector Wage Differentials in Germany: Evidence from Quantile Regression". SIAW, University of St. Gallen, Switzerland.

- Palestinian Central Bureau of Statistics (2006), Guidebook of Statistical Definitions and Glossary, Ramallah - Palestine.
- Roy, S. (1995). "The Gaza Strip: The Political Economy of De-Development". Institute for Palestine Studies – 2nd Edition, Beirut – Lebanon.
- Roy, S. (1999). "De-Development Revisited: The Palestinian Economy and Society Since Oslo". *Journal of Palestine Studies*, 28 (3), pp. 64-82.
- Tansel, A. (1999). "Public-Private Employment Choice, Wage Differentials and Gender in Turkey" Economic Growth Center, Yale University Discussion Paper No 797.
- Tansel, A. and Tasçi, M. (2004). "Determinants of Unemployment Duration for Men and Women in Turkey," IZA Discussion Papers 1258, Institute for the Study of Labor (IZA).
- Van der Gaag, J. and Vijverberg, W. (1988). "A switching regression model for wage determinants in the public and private sectors of a developing country." *Review of Economics and Statistics* 70, 244-252.
- Williams, R. (2006). "Generalized Ordered Logit/ Partial Proportional Odds Models for Ordinal Dependent Variables." *The Stata Journal* 6(1):58-82. A pre-publication version is available at:
<http://www.nd.edu/~rwilliam/gologit2/gologit2.pdf>
- World Bank (2007). "Public Expenditure Review: From Crisis to Greater Fiscal Independence." Document of the World Bank - Report No. 38207-WBG, Vol II.