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PUBLIC-PRIVATE WAGE DISPARITIES, EMPLOYMENT A ND LABOR MARKET SEGMENTATION IN TUNISIA

Ines Bouassida and Abdel-Rahmen El Lahga

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Send correspondence to:
Abdel Rahmen El Lahga
University of Tunis
rahmen.lahga@gmail.com

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Abstract

The dysfunction of the Tunisian labor market is exacerbated particularly by the segmentation between public and private sectors employment. These different segments differ in terms of returns to human capital, social protection and mobility, affecting career development and the wage structure in the economy. In this paper, we present the patterns of wage distribution in Tunisia across important socioeconomic groups and a detailed analysis of the wage gap between public and private sectors. Our results show particularly that while in the bottom of the wage distribution the positive wage gap between public and private sectors mainly attributable to the composition or characteristics of workers, the wage gap in the upper of the distribution is due to returns to characteristics effect. The public-sector wage premium explains the strong preference public positions.

JEL Classification: J1

Keywords: Wage, disparities, segmentation, employment, Tunisia

ملخص

يتفاقم العجز في سوق العمل التونسي بشكل خاص من جراء التفرقة بين العمالة في القطاعين العام والخاص. وتختلف هذه الشرائح المختلفة من حيث العائد على رأس المال البشري والحماية الاجتماعية والتنقل، مما يؤثر على التطور الوظيفي وهيكل الأجور في الاقتصاد. في هذه الورقة، نقدم أنماط توزيع الأجور في تونس عبر مجموعات اجتماعية اقتصـــادية مهمة، وتحليل مفصـــل للفجوة في الأجور بين القطاعين العام والخاص. وتظهر نتائجنا بشـــكل خاص أنه في حين أن الفجوة في الأجور بين القطاعين العام والخاص في الجزء الأخير من توزيع الأجور تعزى أســـاســـا إلى تكوين أو خصـــائص العمال، فإن الفجوة في الأجور في الجزء العلوي من التوزيع ترجع إلى العودة إلى تأثير الخصائص. ويوضح قسط الأجور في القطاع العام المواقف الأفضلية العامة.

1. Introduction

Studies in the forthcoming volume on *Labor Markets, Employment and Unemployment in Tunisia* (Assaad and Boughzala) clearly show that the main challenge faced by Tunisia is to create more and better employment opportunities for youth. Data from Labor Market Surveys (LFS), published by the National Institute of Statistics, show that job creation has not kept up with the rate of growth of the educated population. During the 2005-2014 period, the active population having completed primary school or less had negative annual growth of -1.7% on average, while the number of those with higher education grew by 8.3% annually. The number of women in the labor market increased by 3.1% annually, compared to 1% for men. While the size of the active labor market in Tunisia jumped from 3.4 million to 3.9 million between 2005 and 2014, the number of the employed went from 3 million to 3.4 million, leaving about half a million individuals unemployed.

In addition to persistent demographic pressures and changing workforce characteristics, as per other recently performed studies (for example, El Lahga et al. (2016); Boughzala (present volume)), it should be noted that labor market dysfunction is also exacerbated by the segmentation between: (i) public/private sectors, (ii) export-oriented and domestic sectors, and (iii) formal/informal employment. The different segments of the labor market differ in terms of wage condition, social protection and mobility, etc., affecting career development and the wage structure in the economy. For example, in Tunisia, many workers in informal or insecure jobs have difficulty exiting informal employment and sometimes have little choice but to alternate between informality and insecurity.

The goal of this paper is to evaluate the extent to which wage gaps between different segments of the labor market explain observed trends. More specifically, we study the characteristics of income distribution and wage disparities between the labor market segments and between different population groups (by gender, region, education level, etc.). Using usual measures of inequality, we decompose wage disparities between and within socioeconomic groups and labor market segments. We also analyze the effect of individual characteristics and activity sector throughout the wage distribution. Our results should contribute to better understanding of the main problems and challenges faced in the labor market and help policy makers to design the reforms needed for the creation of more and better-quality jobs.

The structure of this paper is as follows: section 2 proposes a brief description of employment trends in Tunisia and pays special attention to the characteristics of different segments of the labor market. Section 3 presents some evidence on labor market segmentation. Section 4 analyzes the wage distribution patterns. Section 5 examines wage disparities between different socioeconomic groups and different segments of the labor market. The main conclusions and recommendations are in section 6.

2. Overview of Employment in Tunisia

The analyses in this paper are based on data drawn from the National Population and Employment Survey (ENPE), produced by the National Institute of Statistics (INS) in 2013. This survey provides information on the labor market, employment, and on characteristics of about half a million individuals surveyed, among them 150,000 are active in the labor market. The ENPE 2013 survey provides sufficient observations on wages at the individual level (more than the TLMPS 14) and enables us to disaggregate our analysis and to decompose disparities by gender, region, governorates, and by labor market segmentations.

We present an overview of (trends of) labor market characteristics relating to employment in Tunisia using data from the ENPE 2013. For a more detailed analysis we refer the reader to the forthcoming edited volume by Assaad and Mongi. Also, for the analysis of labor market segmentation we use a subsample of panel data drawn from 2010-2011 ENPE conducted by the INS.

In 2013, the labor force participation rate was 52.9%, and 3.8 million persons were active in the labor market. It should be noted, however, that this aggregate rate hides large differences by gender. A closer look at the details of the statistics presented in Table 1 shows a labor force participation rate of 77.5% among men – similar to rates found throughout the MENA region – and just 29% among women.

Having already been affected by the global recession in 2009 and then by the revolution in late 2010, the labor market experienced major pressures; there was a decline in employment. The unemployment rate reached 16.3% in 2013, representing 626,000 unemployed persons (see El Lahga et al. 2016 for more details). The unemployment rate is much higher among women than men (respectively 23.2% as opposed to 13.6% in 2013). According to INS statistics for the period 2009 and 2013, women were disproportionately affected by job losses. The unemployment rate among women went from 18.8% in 2009 to 24% in 2013 (El Lahga et al., 2016). Moreover, the difficulties and lack of geographic mobility of women, and their preference for the public sector or access to family friendly jobs, may also explain the major gap between men and women in terms of unemployment rates.

Youth (between 15 and 29) are the most affected by unemployment; according to the ENPE survey data (2013), the youth unemployment rate was 33.5%, far above the national average. For these youth, the school to work transition is tending to take longer. These trends reflect major dysfunctionning of labor market intermediation institutions whose negative impacts are most relevant during periods of unemployment. The inefficient intermediation mechanisms through public intermediation agencies can also be seen by comparing unemployment across age groups (they appear to have a negative impact on youth unemployment, relatively speaking). According to the most recent survey in 2014, the unemployment rate differs markedly between those aged 25-29 and 30-34, at 28.3% and 17% respectively.

Figure 1 shows employment rates by gender and age groups. The employment-population ratio is 44.3%. However, we observe important disparities by gender and age groups: 90% of men aged 35 to 54 have a job, as compared to just 30% of women in this age group. The employment rate for the latter group decreases strongly with age. However, the low employment rate among women may not account for other forms of unremunerated labor, such as housework, caregiving, etc. Despite major progress in terms of legislation which promotes gender equality, the social norms and traditional role assigned to women in the family continue to hamper women's participation in the labor market. After marriage and/or maternity, women tend to end their active working life and to exit the labor market.

Figure 2 shows that the largest sectors in terms of their share of overall employment are education and public health services (18% of employment), construction (16%), agriculture (15%) and trade (12%). Women are mostly employed in the education and health sectors, where many positions are known to be more compatible with family life, notably due to flexibility in working hours. The textiles sector also employs a relatively higher proportion of women, as is commonly the case among low qualified female workers.

El Lahga et al. (2016) noted that, despite their importance in terms of employment and their job creation dynamics, these sectors have much lower productivity than other sectors such as finance and transportation. From the perspective of economic development, it is important to facilitate reallocation of employment within and between these sectors in order to enhance productivity, economic growth, wage remuneration and, in so doing, individual wellbeing. Public policies which aim to promote dynamism in job creation are just as important as policies which encourage business development.

In this paper, we consider three types of employment: (i) formal employment with open-ended contracts (permanent positions), (ii) formal employment with fixed-term contacts, and (iii) informal employment with no contract. The first two types of formal employment are covered by the social security system. Also, it is known that formal employment in the public sector in Tunisia tends to be more generous in terms of non-salary advantages compared to other jobs in the private sector.

Figure 3 shows that nearly 32% of wage employees are engaged in informal employment and only 15% have fixed-term contracts. Workers aged 15 to 24 are more affected by informality and job insecurity. Nearly 70% of youth work with no contract. By the age of 35, many workers seek stability and hope to get jobs with open-ended contracts. This observation is perfectly consistent with the preceding remarks on the inefficiency of intermediation on the labor market. It is also interesting to note that many wage workers over the age of 60 (nearly 60%) are employed outside of any contractual framework. In this age group comprised of retirees, most of whom receive pensions or social support, this type of contract is considered as an opportunity to escape fiscal control and to benefit from more flexible working hours.

As illustrated in Figure 4, young women aged 15 to 24 tend to enter the labor market through fixed-term contracts: 47% enter the labor market this way as compared to 19% among men. It is more common for men to accept informal employment (outside of any contractual framework). This goes with social norms wherein men support the family, i.e., are responsible for ensuring the income of the family. In such a situation, he is liable to accept any activity which can generate income.

Figure 5 presents the distribution of employment by contract type and area of residence, excluding self-employed workers in the sample. Rural areas are most affected by employment insecurity and informality: more than 62% of the wage workers are employed in the informal sector and just 11% of workers have a fixed-term contract. This situation results from a number of characteristics of the labor market in rural areas, such as sizeable demand in agriculture for low qualified season workers at low pay. These two factors are responsible for the job insecurity and the increase in informal employment in some segments of the labor market in recent years.

In general, weekly working hours range between 40 and 48 hours. According to ENPE survey data, more than 60% of workers are employed full time. A higher share of employed women than men work less than 40 hours per week (19% and 13%). Figure 6 also shows that 30% of men work more than 48 hours per week, as compared to 14% of women. It is surprising to see that women tend to work full time and do not opt for more flexible working hours. Similar to trends observed in developed countries, this can be explained by the inability of the Tunisian economy to offer jobs with flexible workloads which are more adapted to the needs and the roles played by women, which would attract more women into the labor market. Most often, women tend to seek jobs

which are compatible with social and cultural norms including their role in the family (domestic work, education of children, etc…).

3. Preliminary Evidence on Labor Market Segmentation

Although an exhaustive analysis on the degree of labor market segmentation is beyond the scope of the present paper, in this section we will present some preliminary evidence on labor market segmentation in Tunisia. There is segmentation between public and private markets as well as informal and formal employment. Our results provide basic information for the analysis of wage disparities between different segments of the Tunisian labor market. There is an abundant literature on labor market segmentation, notably public/private sector segmentation. Many econometric approaches have been used to evaluate the extent to which labor markets are segmented (among others, Assaad, 1997, Field, 2009; Maloney, 1999, 2004; Pratap and Quintin, 2006; and Gunther and Launov, 2012).

In the present section, we use a relatively simple approach to evaluate the extent of labor market segmentation. We consider that the labor market is segmented if workers with the same characteristics are able to obtain formal employment due to inequality of opportunity, costs of searching for a job or any other obstacle. Thus, in a segmented labor market, one might expect lower mobility between segments, especially in going from informal to formal employment. We are aware of the limitations of our approach. A person may voluntarily choose to take a position in an informal job, either for non-wage benefits or because they have a comparative advantage in working in this sector and do not see a pathway to doing better elsewhere (outside of the informal sector). However, this type of argument is not well suited to the Tunisian context. Moreover, it is well known that in Tunisia, public sector jobs are more prized than private sector jobs, given the benefits they offer. The public service is synonymous with job security and is a source of social valorization.

We present different transition matrices using a panel of individuals surveyed through the National Population and Employment Surveys carried out in May 2010 and May 2011. The nature of this panel data enables us to estimate the probability of transition between different segments of the labor market. We consider three types of contractual situations (fixed-term contracts, open-ended contracts and no contract) and four sectors of activity (the public sector, the private formal sector, the private informal sector and self-employed workers). Tables 2 to 5 illustrate the probability of transition, estimated as the ratio of transition from one sector to another. It should be noted that the 2010-2011 period is not an appropriate point of reference to analyze transitions, due to social and political upheaval that took place. However, this was the best data we were able to obtain.

As shown in Table 2, workers in the private informal sector face many difficulties in exiting informality and transitioning into another situation: only nearly 7% of them managed to enter into the public service, only 12% were able to obtain employment in the private formal sector, 19% became own-account workers and 62% continued with the same informal job. There are sectors where the transition rate is much lower, such as 8% of workers in the formal private sector falling into informal employment and 9% managing to obtain a job in the public sector. To summarize, Table 2 illustrates the slow rate of mobility between the different segments of the labor market, compared to mobility rates estimated by Assaad and Krafft (2013) for Egypt and Tansel and Kan (2012) for Turkey. The diagonal elements of the matrix which reflect staying in the same labor market segment between 2010 and 2011 remain relatively high, with 86% remaining in the public sector, 74% in the private formal sector and 76% among self-employed workers.

The low mobility of informal private employment towards public employment or private informal employment is confirmed in Table 3: over the May 2010-May 2011 period, nearly 85% of workers with no contract remained in the same situation, only 11% obtained an open-ended contract and 3% obtained a fixed-term contract. The risk of falling into informality is relatively high: 13% of those with an open-ended contract moved into an informal situation (no contract). Among those with fixed-term contracts, 33% went into open-ended contracts and 25% into jobs with no contract.

Given the information we have, the transition matrices are by education level (see Table 4). The same trend is observed across all levels of education, in particular among university graduates who have a lower rate of going into the public sector.

Looking at the 25-54 age group, we observe the same trend as for mobility between sectors. This analysis confirms the public-private segmentation, and to a lesser extent the formal/informal segmentation of the labor market.

4. The Characteristics of the Wage Distribution

In order to better understand the structure of employment and wage characteristics, we consider six sub-groups of workers: those who work in the public administration or public enterprises, those who work in private enterprises, domestic work, street vendors, agricultural workers and workers in the construction sector. Figure 7 shows that in 2012, the average monthly wage was around 462 DT across all workers, with a significant difference between sexes: 470 DT for men and 443 DT for women, a difference of 6% among those active in the labor market in favour of men. It should be noted that this unconditional difference is most pronounced in the private sector where men earn 32% more than women on average. The same trend may be observed in many other activities (street vendors, agricultural workers and workers in the construction sector).

Employees in public administration or public enterprise are significantly better remunerated, with an average wage in the range of 690 DT, compared to 415 DT in the private sector, 333 DT in the construction sector and 232 DT in the agricultural sector.

Figure 8 also shows that workers in the education, health, transportation, telecommunications and banking and insurance sectors are the best paid and no major differences between genders were recorded. For example, in the transportation and telecommunications sectors women earn 602 DT per month compared to 604 among men. This may be explained by the fact that these sectors generally offer structured formal employment where the law is enforced.

The textiles sector, known for attracting mainly female workers, turns out to pay more to men: the average wage of an employee in the textiles sector is 444 DT as compared to 323 DT among women, a 37% difference in favour of men. This salary gap is probably due to the nature of positions that men and women tend to hold, with women most often assigned to tasks which do not require any qualification (low skilled workers). As for men, they more often hold managerial, strategic or technical positions (qualified workers).

In this section, we are interested in the returns to education in the labor market. Figure 9 confirms that women are disadvantaged in the labor market, compared to men. The gender wage gaps are strongly linked to level of education. While the wage gap between men and women is about 32% among the illiterate, the gap among university graduates is lower, at 19%.

Also, the results in Figure 9 show a positive return to education which holds for both sexes: among illiterate individuals the average wage is 285 DT, while among those with a high school diploma and above, it respectively reaches 511 DT and 830 DT. The results in Figure 9 represent the

distribution of wages by sex and level of education of the individual independently of any other characteristics or control (age, rural/urban residence, contract type) – this is an unconditional distribution.

Figure 10 indicates a positive and significant return to education which is independent of sector of activity, with the exception of persons engaged in domestic work and street vendors. Returns to education are higher among persons who work in public administration or public enterprise than among those who work in the private sector. Among university graduates in Tunisia, the public sector offers much higher and more attractive remuneration than other sectors. These trends explain, in part, why university-level graduates are willing to spend longer periods of unemployment waiting for a public sector job.

5. Wage Disparities

5.1. The wage distribution

All our results are based on monthly wage income rather than hourly wages, due to the high volatility of hours worked, especially in the informal sector. We believe that monthly income, as opposed to the hourly rate, gives a better idea about earning opportunities.

Table 6 presents some percentiles of the salary distribution. The average wage of workers at the middle of the income distribution (50^{th} percentile) is nearly 375 DT, a higher number than the monthly minimum wage of 320 DT in 2012. Workers at the 10^{th} percentile receive 180 DT per month, while higher salary workers (90^{th} percentile) receive 852 DT, five times higher than the 10^{th} percentile of wage income. The distribution of income between the 1^{st} and 5^{th} quartiles ranges between 270 and 600 DT.

At this stage, the question is to know how to evaluate the importance of the wage differential between and within socioeconomic groups. Table 7 presents the Gini index of income inequality by region, sex, level of education and by employment characteristics. According to the data of the ENPE survey (2013), the Gini index of monthly earnings for wage workers in Tunisia was 33.2, as compared to 35.7 when using data on consumption expenditures on non-durable goods, as estimated by the INS in the context of the 2010-2011 National Survey on Households Budget, Consumption and Standard of Living. It is somewhat unsurprising to observe that wage inequalities are smaller than consumption inequalities, considering that we expect consumption, which includes social and private transfers, to be less unequal than income generated by the labor market. However, it's important to note that self-employment income is not considered here and that could be what is contributing to more unequal consumption.

When we consider the different socioeconomic groups, the Gini index ranges from 25 for workers with only primary education and a fixed-term contract to 32 among male workers and workers in urban areas. The highest observed Gini index is among female workers (35).

Figure 11 shows the wage inequalities by governorates (administrative regions). Inequalities are higher in the poorer governorates. The highest wage inequality is in the Western governorates. The high wage inequalities can be explained by the strong dichotomy observed on local labor markets: in these regions, we generally observe formal employment in the public sector and informal employment especially in the agricultural sector. The grouping of governorates in terms of inequality is consistent with their grouping based on the regional development index estimated by the ministry of development.

5.2 Modeling the wage gaps between public and private sectors

This section aims to explore and examine in depth the wage differentials between the public and the private sector defined not just as the mean sectorial gap (OLS regression) but also as the wage differentials at various point of the monthly wage distribution (quantile regression) conditional on age, marital status, sex, education level, sectors of activity, contract type and region. The latter model developed by Koenker and Bassett (1978) allows us to study marginal effects at the lower and upper quantiles of the conditional return distribution and then may provide a more complete understanding of the wage gap than standard linear regression. More specifically, the quantile regression model estimates the τ^{th} quantile of logarithm of monthly wage conditional on various workers characteristics.

Considering two groups of worker, workers in public sector (pb) and workers in private sector (pv) whose socio-demographic and employment characteristics for each group are X_{pb} and X_{pv}, which denote the logarithm monthly wage of worker i belonging to group$g$, w_{ig} were $g \in \{pb, pv\}$, the conditional quantile regression $Q_\tau(w|X)$ can be expressed for each group as follows:

$$Q_\tau(w_g|X_g) = X_{ig}\beta_{g\tau} \quad \text{for each } \tau \in [0,1] \ and \ g \in \{pb, pv\}$$

As shown by Koenker and Bassett (1978), the coefficient vectors $\beta_{g\tau}$ can be estimated for the different τ^{th} quantile by minimizing the following expression

$$min \left[\sum_{ig: w_{ig} \geq x_{ig}\beta_{g\tau}} \tau |w_{ig} - x_{ig}\beta_{g\tau}| + \sum_{ig: w_{ig} < x_{ig}\beta_{g\tau}} (1-\tau) |w_{ig} - x_{ig}\beta_{g\tau}| \right]$$

These coefficients can be interpreted as the estimated returns to various characteristics at a given quantiles of logarithm wage distribution.

For a further exploration of the sectorial wage gap, we complete our analysis by examining the source of differences in the observed wage distribution. In particular, we show whether these changes can be explained by sectorial differences in the distribution of observable characteristics or endowments (age, education, marital status, etc.) ("effect of characteristics") or are due to differing coefficients between workers in public and private sector (returns of these characteristics) and can be interpreted as discrimination or behaviour differences ("effect of coefficients"). To do this, we follow the approach proposed by Machado and Mata (2005) and later developed by Chernozhukov et al. (2013). The procedure combines both the quantile regression technique and the bootstrap approach in order to decompose changes in sectorial wage gap at various points of the distribution and thus to estimate counterfactual unconditional wage distribution. Then wage difference between public and private sector workers at the τ^{th} quantile can be expressed as

$$Q_\tau(w_{pb}) - Q_\tau(w_{pv}) = \left[Q_\tau(\widetilde{w}_{pb}) - Q_\tau(\widetilde{w}_{cf})\right] + \left[Q_\tau(\widetilde{w}_{cf}) - Q_\tau(\widetilde{w}_{pv})\right]$$

Where the first term on the right-hand side of the equation is the effect of characteristics and the second term in brackets is the effect of coefficients and $Q_\tau(\widetilde{w}_{cf})$ denotes the counterfactual quantiles distribution and which is obtained by assuming that workers in the public sector hold their labor market characteristics but they are remunerated as their private sector counterparts.

Before reporting and discussing our estimation and decomposition results, we start by plotting the Kernel densities (a non-parametric data smoothing technics) of the logarithm of monthly wage. in the public sector and private sector. Figure 12 shows a significant difference between the two

distributions. The majority of the distribution in the public sector is to the right of that in the private sector. Moreover, the wage distribution in the public sector is more pointed and less dispersed than in the private sector. It turns out that wages are clearly higher and less variable in the public sector than in the private sector. The trend is the same regardless of gender.

The disparities mentioned above, such as those illustrated in Figure 12, are largely due to differences in characteristics of workers between sectors. As shown in Table A1 of annex 1, workers in the public sector are young and have higher educational attainment. We also showed the important differences in terms of sectors of activity. The largest areas of activity are terms of employment in the public sector are social and community services. In the private sector, the most important sectors of activity are the textiles sector and the construction sector.

Figure 13 presents the wage gap for the whole sample by gender and education level. The upper left panel illustrates the total salary gap (on average) and the different levels of the wage distribution. The gap clearly varies considerably across the distribution, following an inverse U form. It increases monotonically up to the median wage, and then decreases at the upper-end of the wage distribution from the 80^{th} percentile. The upper right panel presents the wage gap between public and private sector for men and women. The wage gap is higher among women than men except at the upper-end of the distribution (82percentile). This tendency could be explained by the fact that women in the public sector are better off than men, as seen through their higher public/private sector wage gap which favors them in the public sector.

Accounting for the importance of the education level in determining income, we explore the wage gaps between the two sectors by level of education. The lower panel of Figure 13 shows huge differences in the size of the sectoral wage gaps by education level. The gap is still in favor of the public sector, but it is higher for workers with a low level of education compared to university graduates. This suggests that workers in the public sector who are not highly educated tend to be better off than similar individuals in the private sector. The minimum wage is enforced, which is not always the case in the private sector. Given that the results show major heterogeneity by characteristic, we proceed with a multivariate analysis of sectoral wage gaps.

Table 8 summarizes the estimates from the conditional quantile regressions for the public sector and private sector (see Annex 4.2 for a technical presentation). We focus our discussion on the results for the 10^{th}, 25^{th}, 50^{th}, 75^{th} and 90^{th} percentiles of the wage distribution. The results show that the correlation between wages and socioeconomic variables differ by sector and percentile of the distribution. We confirm, after controlling for observable characteristics of workers, that there is a large wage gap linked to gender which favors men. This gap tends to be larger in the private sector than in the public sector. Our results also confirm the positive effect of age (related to years of experience) on wages, although this effect is smaller at higher percentiles. Returns to education are generally larger in the public sector than in the private sector. They also increase with level of education, in accordance with human capital theory. The results also show significant differences between sectors of activity. For private sector, compared to health and teaching sectors, all other sectors with the exception of agriculture and social services had positive gaps. For public sector, textile and commerce sectors also display a negative gap.

Also, we found a degree of heterogeneity between regions of the country. It was no surprise that wage gaps between the regions are smaller in the public sector than in the private sector, which was particularly the case in the Grand Tunis region. This result is expected, given that the Grand Tunis region is the largest economic hub in the country.

Finally, we divide the total wage gap into "characteristics effect" and "coefficients effect". The results of this decomposition are presented in Figure 14, with 95% confidence intervals (dotted lines). Table A2 in the annex summarizes the results of a selection of points on the wage distribution. As we noted previously, the total wage gap has an inverse U shape. Figure 14 shows that at the 10^{th} and 30^{th} percentiles, the wage gap is entirely attributable to a "characteristics effect" rather than a "coefficients effect". In effect, the returns to characteristics of workers serves to reduce the wage gap, as indicated by the price effect, which is negative. This result is not consistent with the idea that higher wages in the public sector, in particular at the bottom of the income distribution, specifically result from the wage system in place in the public sector. We find that the wage gap at the lower end of the distribution is entirely attributable to the differences in characteristics of workers in the private sector. This "composition effect" declines along the distribution, although it remains the main factor behind the wage gap.

6. Conclusion

The purpose of this paper is to contribute to the current debate on the structure of employment and characteristics of the wage distribution in Tunisia and to analyze wage disparities according to wage gaps by sex, education, age groups, geographic areas, sectors of activity and contract type, etc.

Using a simple approach based on transition matrices, we showed that there is weak mobility between the labor market segments, and also that there are barriers which prevent workers who work in informality and job insecurity from leaving these jobs. Those who work without contracts or who had a fixed-term contract face enormous difficulties leaving such work, and continue to alternate between informal and insecure jobs.

The analysis of the unconditional wage distribution shows a significant difference between the public and private sectors. Employees in the public service/administration, notably those in the education and health sectors, as well as workers in the transportation, telecommunications, and banking and insurance sectors, are remunerated better. These sectors generally offer formal and structured jobs. Moreover, the results show that the returns to education are highest among persons who work in these sectors. The public sector has overall higher remuneration than in the private sector, which can partly explain the strong preference for these jobs (in addition to more job stability for workers in the public sector).

The multivariate analysis of wages in the public and private sectors, based on regression results from the unconditional quintiles and the Recentered Influence Functions (RIF), show that the wage gaps associated with gender, education level and regions are more important in the private sector than in the public sector. In order to refine our results, we decomposed this gap by percentile across the distribution of composition and price effects. In the lower percentiles of the distribution (10^{th} and 20^{th} percentiles), the wage gap between the two sectors is entirely attributable to the composition effect or the effect of characteristics of workers while in the higher percentiles the gap is more so due to the price effect.

Dysfunction in the labor market in Tunisia, as reflected by significant differences in remuneration, working conditions, security, and other non-wage benefits between the public and private sectors is not without effect on careers, social cohesion, productivity and thus development. Moreover, the public sector is unable to absorb all those seeking work. Thus, Tunisia today finds itself faced with multiple challenges of creating more jobs (while being attentive to their quality), attracting more job seekers into the labor market (especially women) and promoting the private sector.

Our analysis suggests that it should be important to:

- Review and propose employment policy reforms in order to improve the functioning of intermediation mechanisms in the labor market such as by strengthening technical and human capacity at the National Agency for Employment and Independent Work (ANETI), thereby improving matching and flexibility of jobs which are adapted to the specificities of the Tunisian labor market.
- Ensure that existing legislation is respected, enforce the minimum wage and facilitate reallocations of workers between the public and private sectors, and between high productivity sectors, through incentives.
- Promote social dialogue: In January 2013, major representatives of labor (UGTT), employers (UTICA) and the government went ahead with signing an agreement which aimed to modify norms of social and economic engagement and to create new opportunities, with the goal of promoting social cohesion. By cohesion we mean, among other things, equitable access to quality jobs, equality between genders and accountability with respect to corruption and equality of opportunity. This requires a national consensus through inclusive social dialogue, which may to improved productivity, create more jobs and f higher- quality jobs and improve the wellbeing of citizens.
- We can also highlight the need to launch social dialogue on regulations in the labor market, with a view to promoting the protection of workers, protecting vulnerable groups, encouraging civic participation and valuing women's contributions and potential in society. Since the wellbeing of the population partly results from different interactions between government interventions, each policy approach should account for the others.

References

Assaad, R. (1997). 'Kinship Ties, Social Networks, and Segmented Labor Markets: Evidence from the Construction Sector in Egypt'. *Journal of Development Economics*, 52, pp: 1–30.

Assaad, R., and Boughzala, M. (eds.) (forthcoming). *Labor Markets, Employment and Unemployment in Tunisia*. Oxford University Press and Economic Research Forum.

Assaad, R. and C. Krafft. (2013). 'The Structure and Evolution of Employment in Egypt: 1998-2012', Economic Research Forum (ERF), Working Paper No: 805.

Aydın, E., M. Hisarciklilar, and lkkaracan. (2010). "Formal versus Informal Labor Market Segmentation in Turkey in the course of Market Liberalization", *Topics in Middle Eastern and North African Economies*, 12, pp: 1-43.

Bourguignon, F. (1979). "Decomposable Income Inequality Measures". *Econometrica* 47(4), pp: 901-920.

Chernozhukov, V., Fernandez-Val, I., Melly, B. (2013). "Inference on Counterfactual distributions", *Econometrica*, 81(6), pp: 2205-2268

Elbers, C., P. F. Lanjouw, J. A. Mistiaen and B. Ozler. (2008). "Reinterpreting between-group inequality". *Journal of Economic Inequality*, 6, pp: 231–245.

El Lahga A., Marouani, M. A. and R. Ben Ayed Mouelhi. (2016). "Tunisia: Jobs to combat high youth unemployment", Chapter 7 in Betcherman and Rama (eds.) *Jobs for Development: Challenges and Solutions in Different Country Settings*, Oxford University Press, 336 p.

Fields, G. (2009). "Segmented labor market models in developing countries". In Kincaid, H. and Ross, D., (eds), *The Oxford Handbook of Philosophy of Economics*. Oxford University Press.

Gunther, I. and Launov, A. (2012). "Informal employment in developing countries: Opportunity or last resort?" *Journal of Development Economics*, 97(1).

Koenker, R., Bassett, G. (1978). "Regression Quantiles." *Econometrica*, 46(1), pp: 33-50.

Machado, J., Mata, J. (2005). "Counterfactual Decomposition of Changes in Wage Distributions Using Quantile Regression." *Journal of Applied Econometrics*, 20, pp: 445-465.

Maloney, W. (1999). "Does Informality Imply Segmentation in Urban Labor Markets? Evidence from Sectoral Transitions in Mexico", *World Bank Economic Review*, 13(3), pp: 275-302.

Maloney, W. F. (2004). "Informality revisited." *World Development*, 32 (7), pp: 1159-1178.

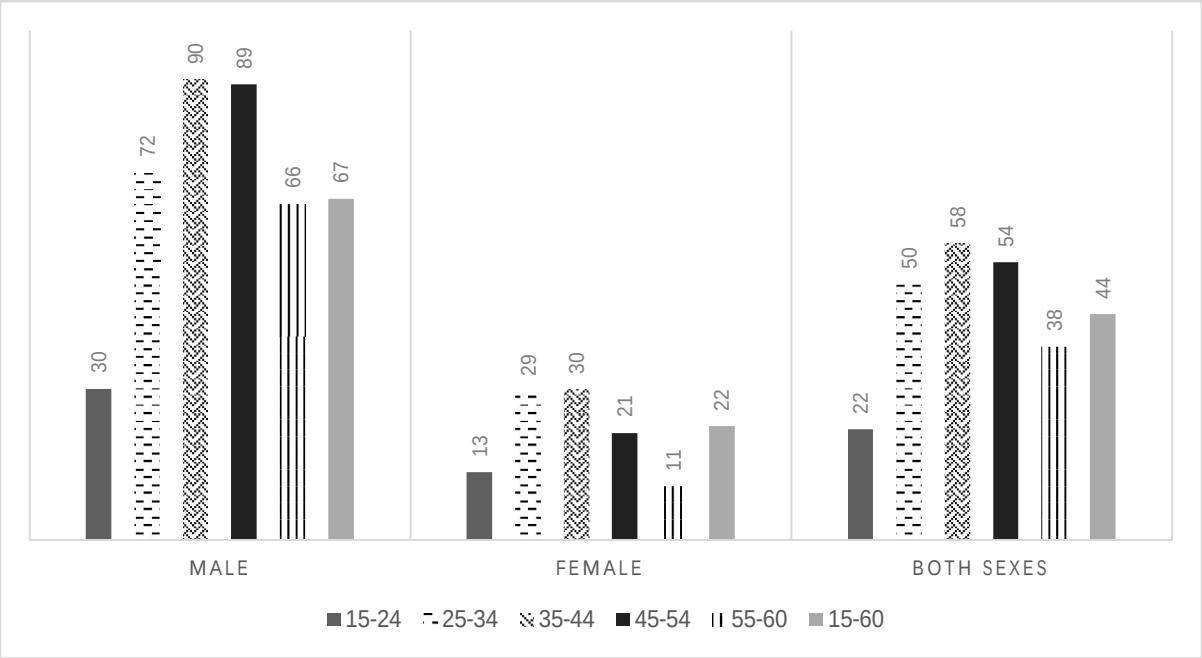
Mookherjee, D. and Shorrocks, A. (1982). "A Decompositions Analysis of the Trend in UK Income Inequality." *The Economic Journal*, 92(368), pp: 886-902.

Oaxaca, R. (1973). "Male-female wage differentials in urban labor markets". *International Economic Review 14*: pp: 693-709.

Pratap, S. and Quintin, E. (2006). "Are labor markets segmented in developing countries? A semiparametric approach". *European Economic Review*, 50(7): pp: 1817-1841.

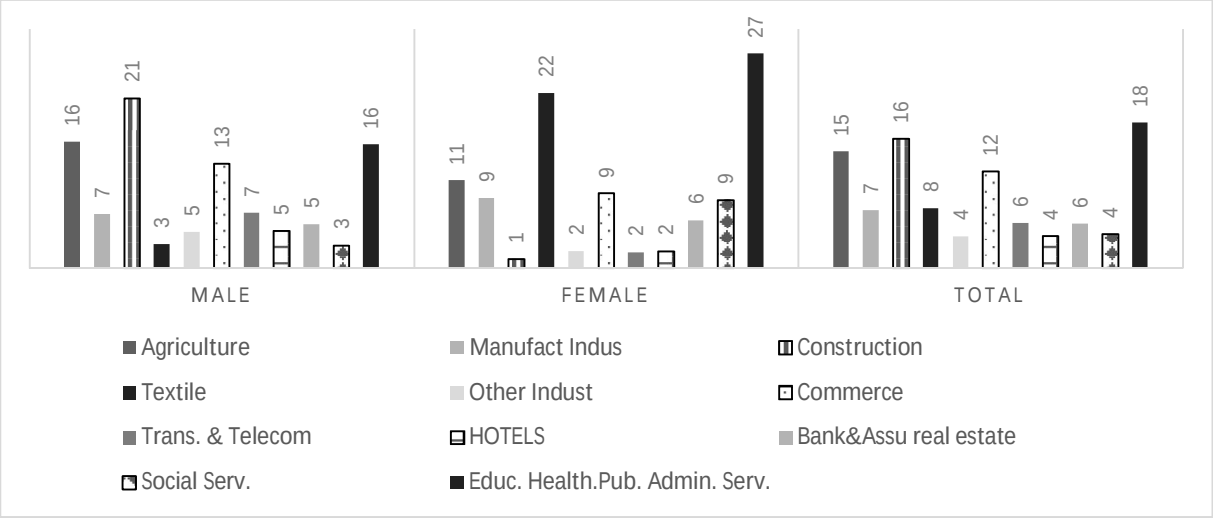
Tansel, A. and E. O. Kan. (2012). "Labor Mobility across the Formal/Informal Divide in Turkey: Evidence from Individual Level Data," Bonn, Germany, IZA Discussion Paper No. 6271

Figure 1: Employment-to-Population Ratio, by Sex and Age Group



Source: Authors' compilation using 2013 ENPE data

Figure 2: Employment by Sector and Sex



Source: Authors' compilation using 2013 ENPE data

Figure 3: Employment by Type of Contract and Age Group Excluding Self

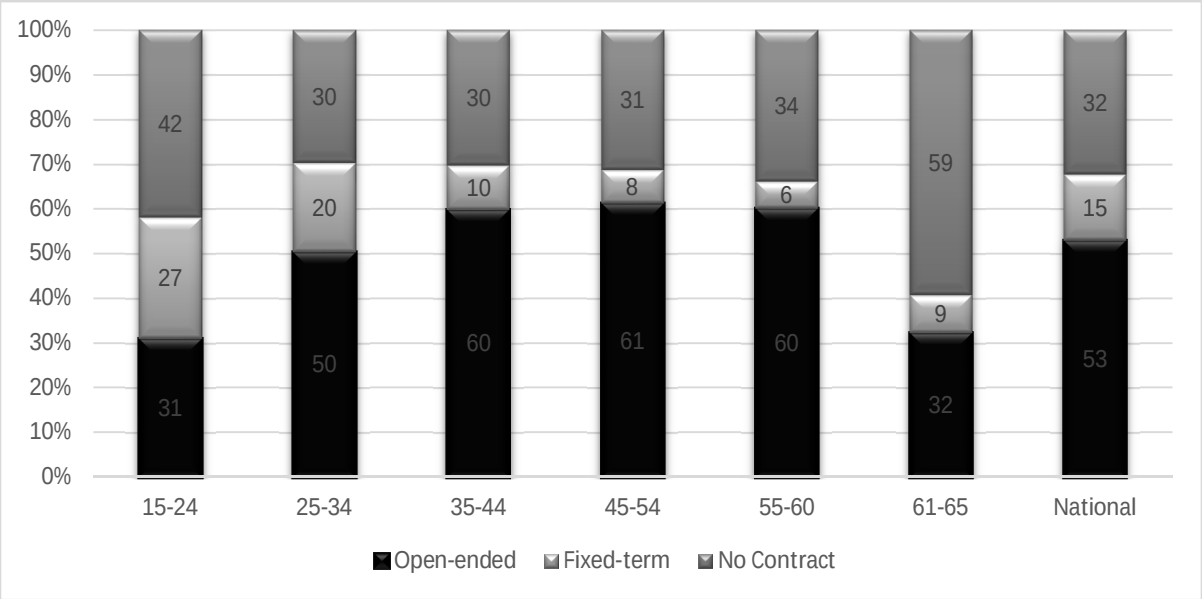


Figure 4: Employment by Type of Contract, Gender, and Age Group Exclude Self

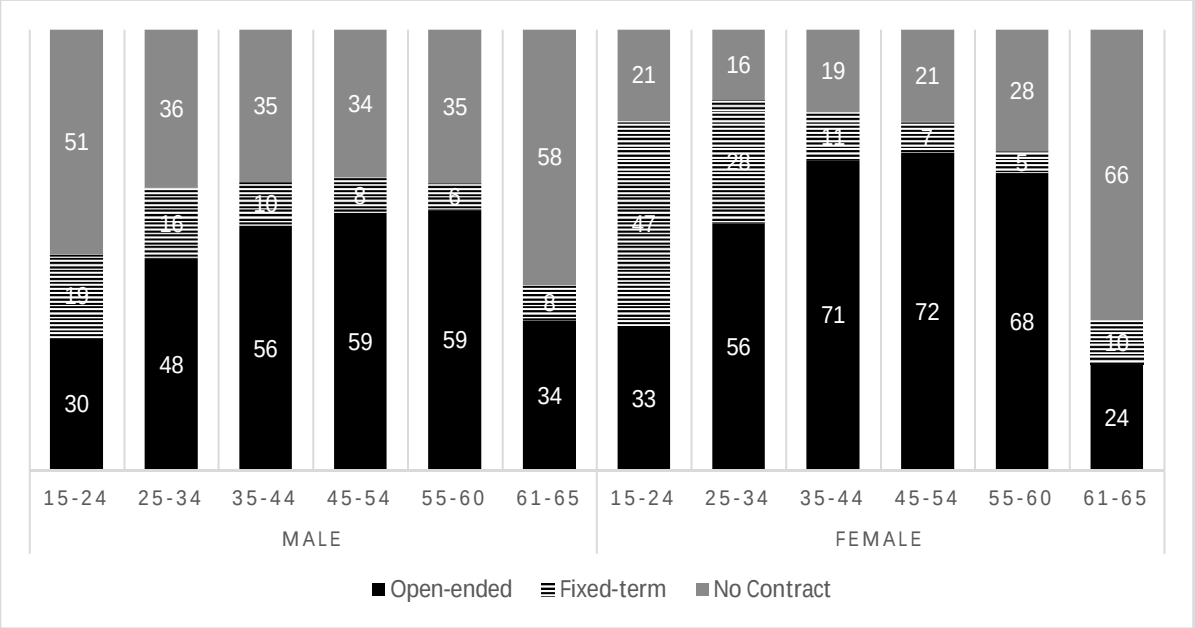
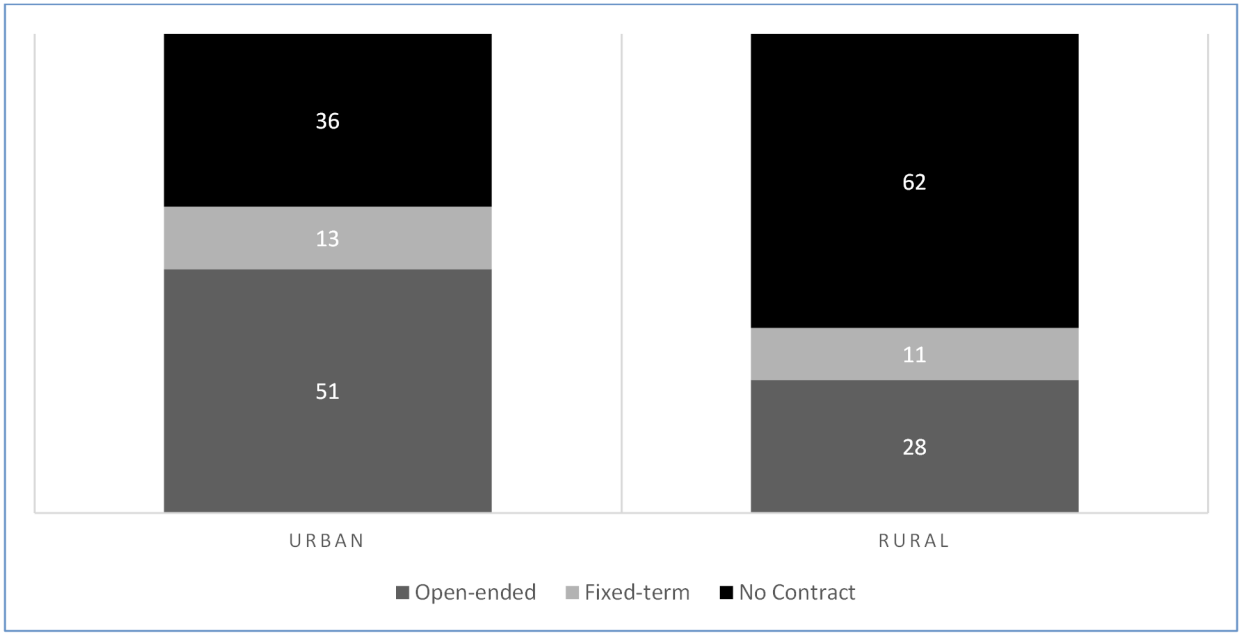
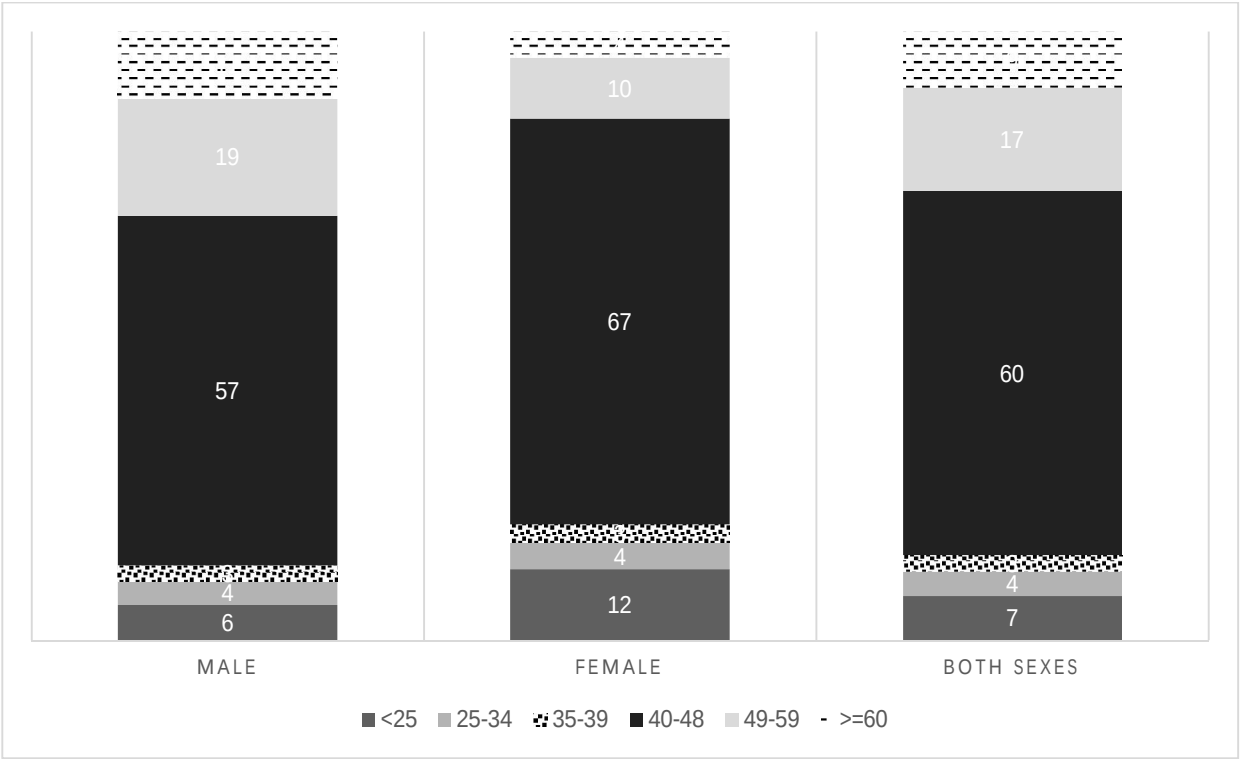


Figure 5: Employment by Type of Contract and Area Excluding Self



Source: Authors' compilation using 2013 ENPE data

Figure 6: Employment by Hours of Work Per Week and Sex



Source: Authors' compilation using 2013 ENPE data

Figure 7: Wages/earnings by Occupation and Sex

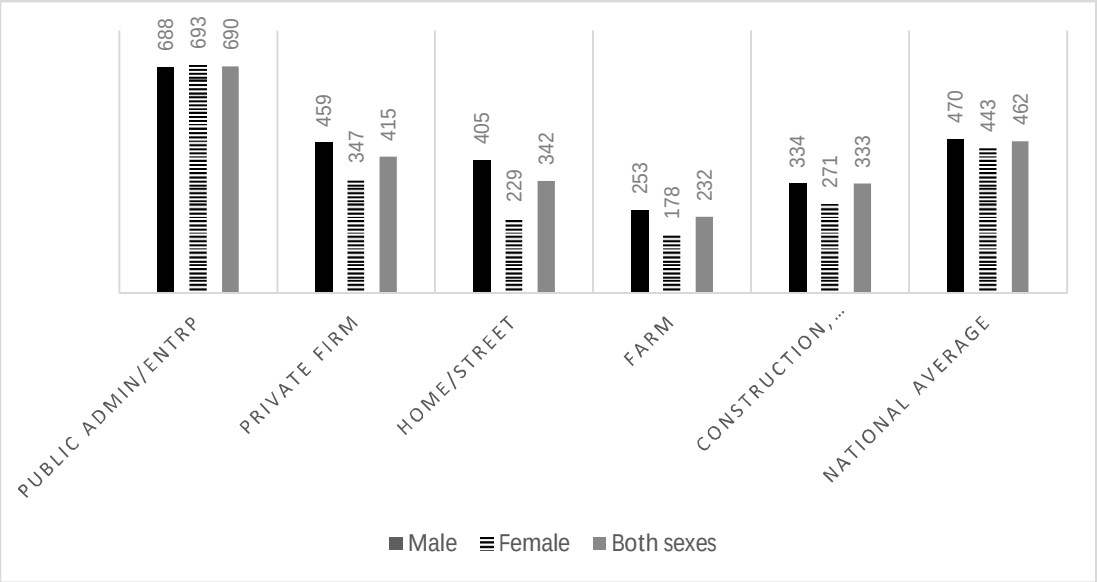
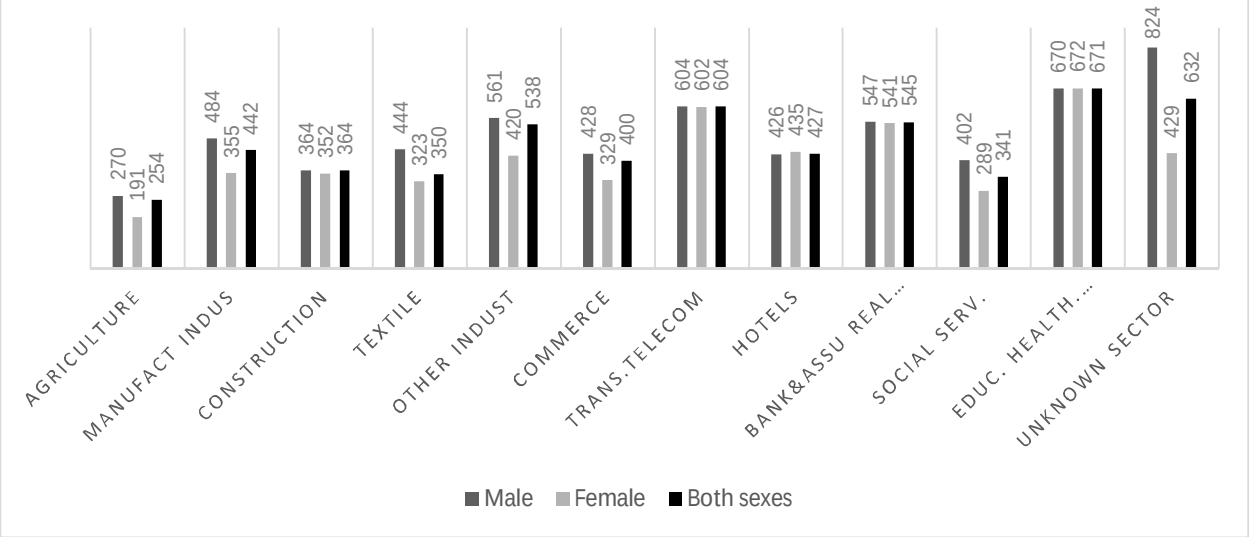
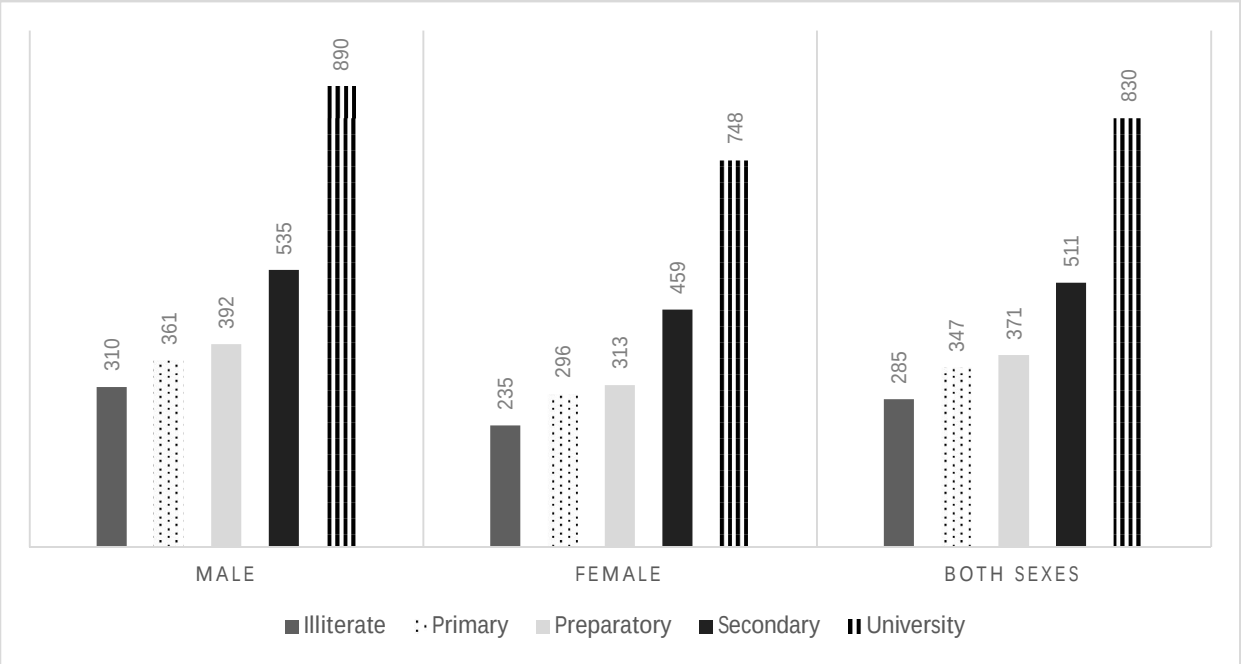


Figure 8: Wages/earnings by Sector and Sex



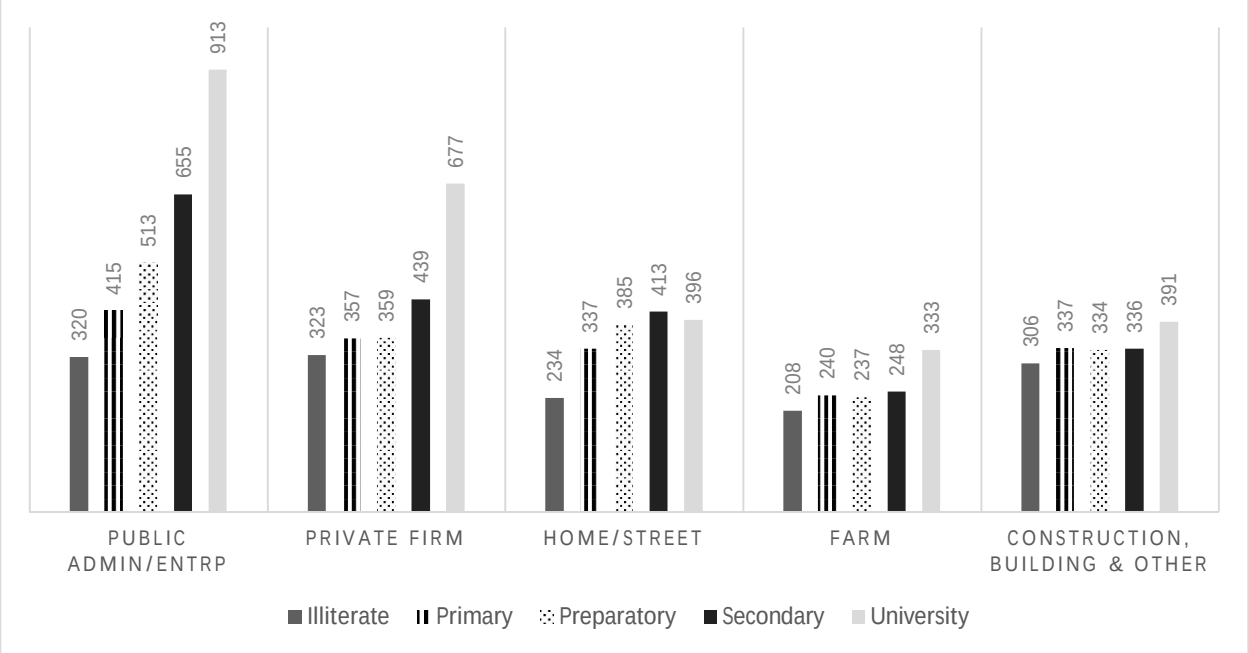
Source: Authors' compilation using 2013 ENPE data

Figure 9: Wages/earnings by Educational Attainment and Sex



Source: Authors' compilation using 2013 ENPE data

Figure 10: Wages/earnings by Educational Attainment and Occupation



Source: Authors' compilation using 2013 ENPE data

Figure 11: Wage Inequality by Region

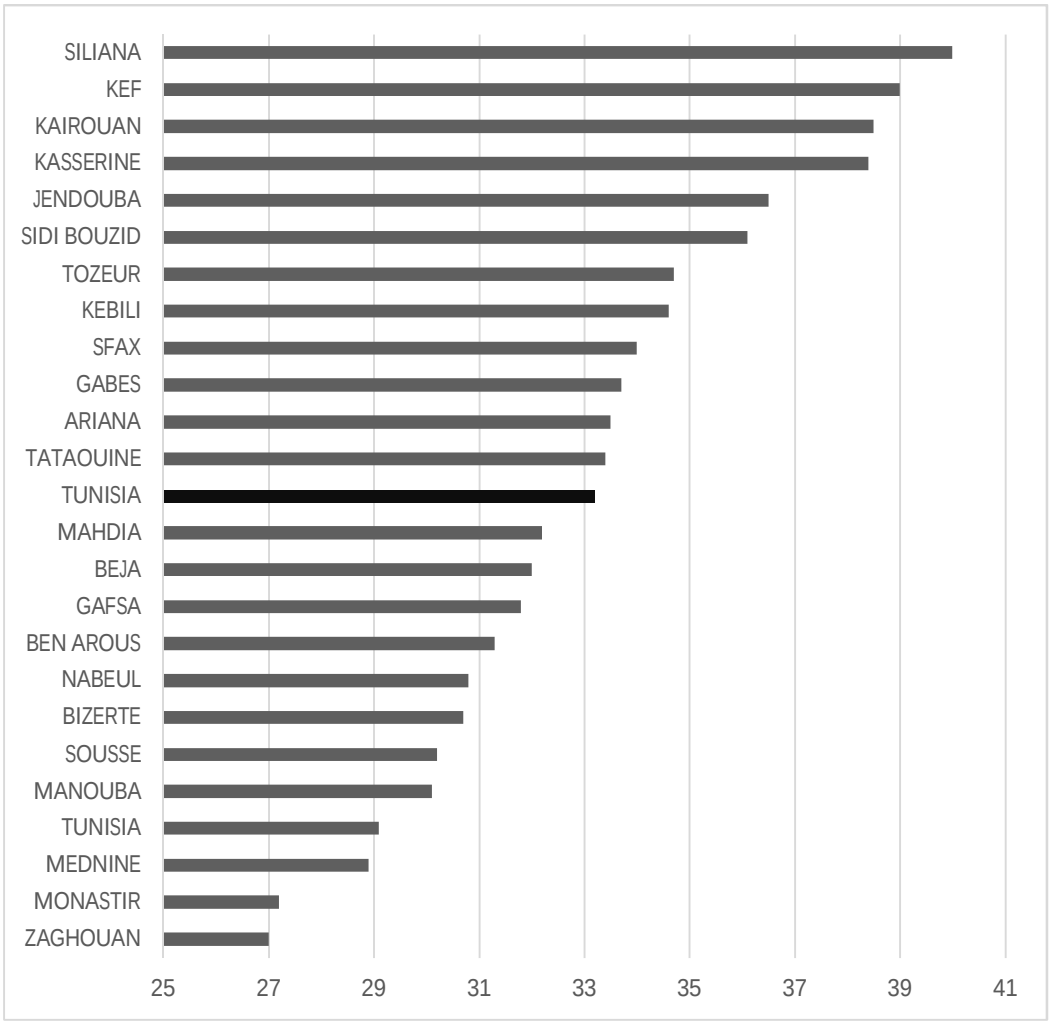
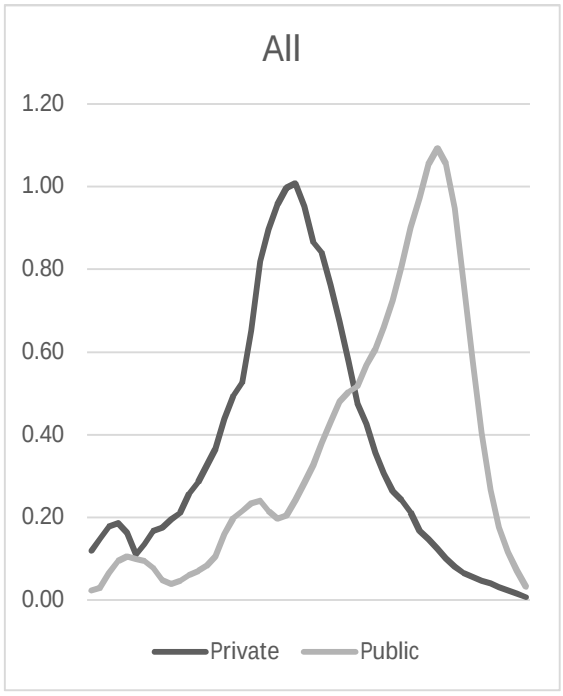
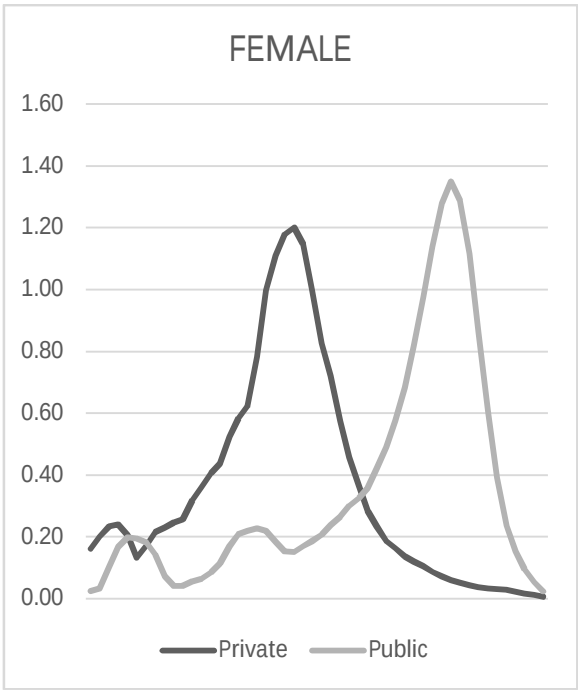
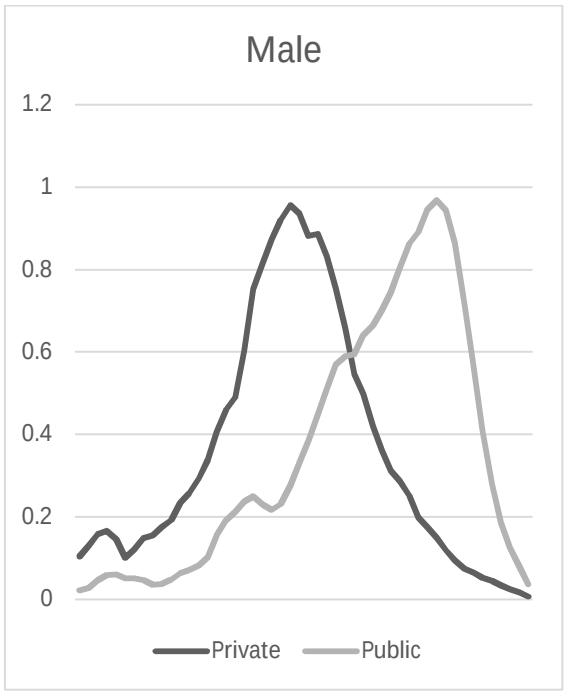


Figure 12: Wage Kernel Density Estimates

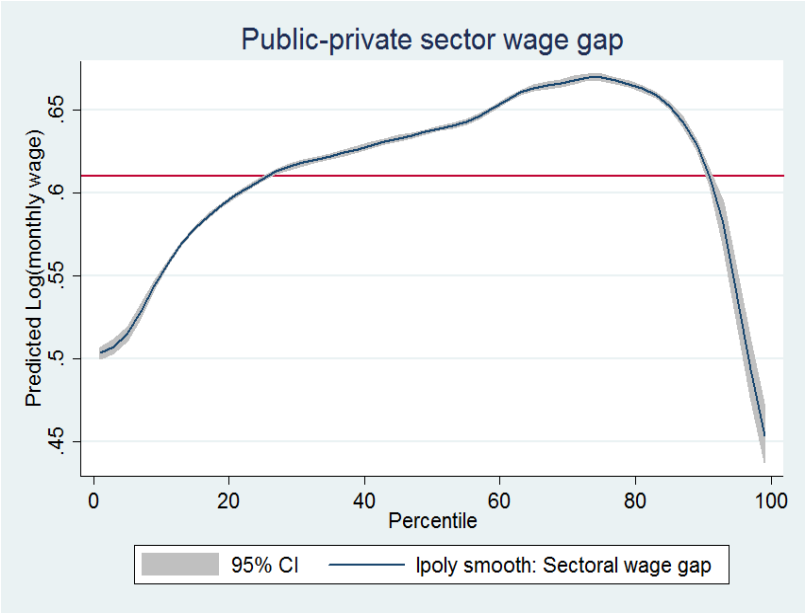


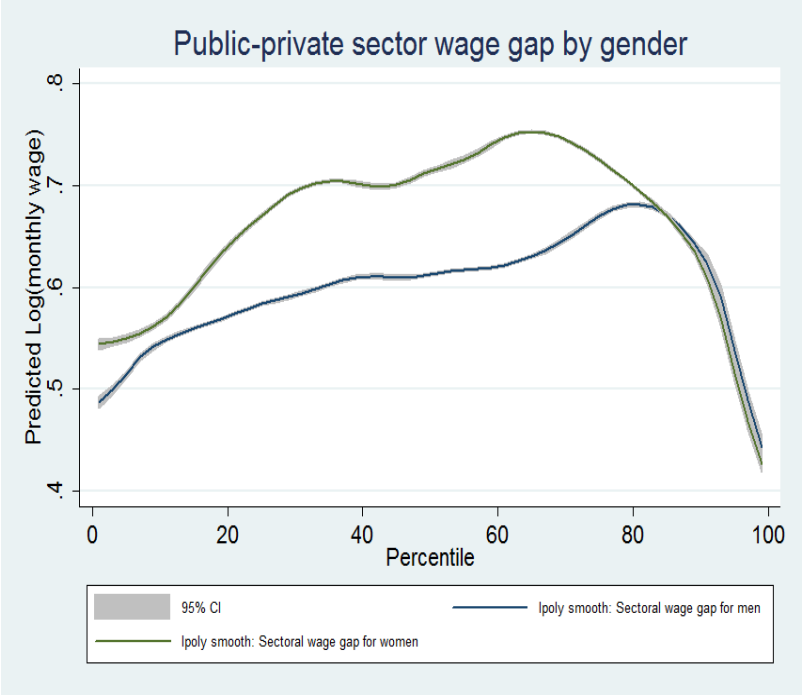




Source: Authors' compilation using 2013 ENPE data

Figure 13: Public Private Wage Gap by Gender, and Education





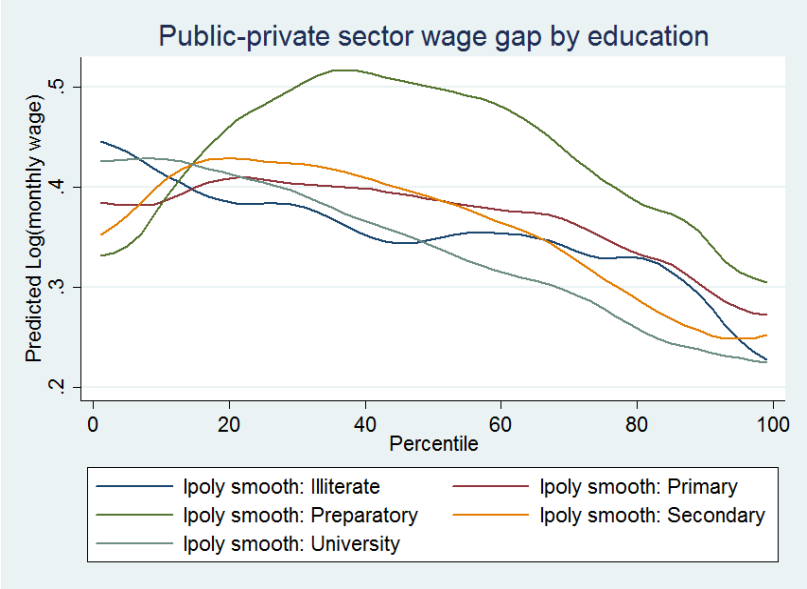


Figure 14: Decomposition of the Public-Private Sector Wage

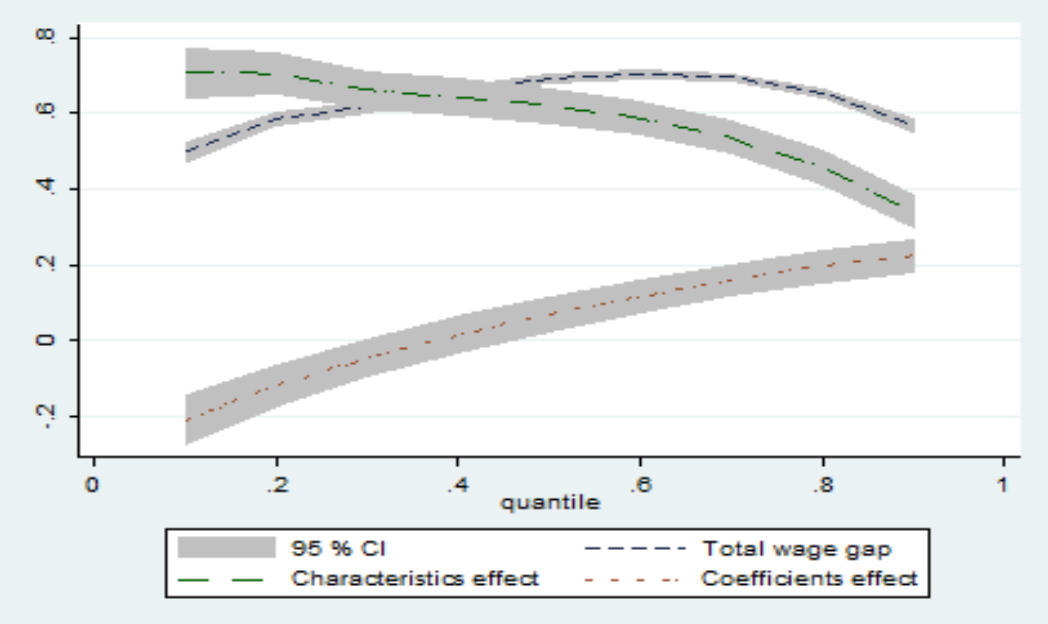


Table 1: Key Labor Market Indicators by Sex

	Male	Female	Total
Working-age population ('000s)	3 576	3 683	7 260
Labor force ('000s)	2 771	1 071	3 841
Labor force participation rate (%)	77.5	29.1	52.9
Employment ('000s)	2 393	822	3 215
Employment-to-population ratio (%)	66.9	22.3	44.3
Unemployment ('000s)	377.9	248.7	626.6
Unemployment rate (%)	13.6	23.2	16.3
Youth unemployment ('000s)	261.5	176.7	438.2
Youth unemployment rate (%)	30.1	40.3	33.5

Source: INS. based on labor survey data.

Table 2: Transition Matrix between Sectors

Transition Probability: Pij (Sector)

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.86**	0.07	0.03	0.04
Formal private	0.09	**0.74**	0.08	0.09
Informal private	0.07	0.12	**0.62**	0.19
Self-employment	0.03	0.09	0.12	**0.76**

Table 3: Transition Matrix between Contract Types

Transition Probability : Pij (Contact type)

Contract 2010\Contract 2011	Fixed-term	Open-ended	No contract
Fixed-term	**0.42**	0.33	0.25
Open-ended	0.07	**0.79**	0.13
No contract	0.03	0.11	**0.85**

Table 4: Transition Matrix between Sectors by Education Level

Transition Probability : Pij (Sector) for illiterate

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.7**	0.05	0.16	0.09
Formalprivate	0.11	**0.6**	0.13	0.16
Informal private	0.08	0.05	**0.63**	0.25
Self-employment	0.03	0.04	0.11	**0.83**

Transition Probability : Pij (Sector) for primary

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.75**	0.09	0.1	0.06
Formalprivate	0.09	**0.67**	0.12	0.12
Informal private	0.06	0.09	**0.64**	0.21
Self-employment	0.03	0.06	0.15	**0.76**

Transition Probability : Pij (Sector) for secondary

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.88**	0.06	0.01	0.04
Formalprivate	0.1	**0.69**	0.13	0.08
Informal private	0.09	0.14	**0.61**	0.15
Self-employment	0.04	0.09	0.13	**0.74**

Transition Probability : Pij (Sector) for university

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.9**	-	-	-
Formalprivate	-	-	-	-
Informal private	-	-	-	-
Self-employment	-	-	-	-

**Empty cell denotes very low number of observation

Table 5: Transition Matrix between Sectors - Age Category [25-54]

Transition Probability : Pij (Sector) age category [25-54]

Sector 2010\Sector 2011	Public	Formal private	Informal private	Self-employment
Public	**0.86**	0.06	0.04	0.04
Formalprivate	0.1	**0.69**	0.11	0.1
Informal private	0.07	0.1	**0.64**	0.19
Self-employment	0.05	0.08	0.15	**0.73**

Table 6: Wage Distribution Per Percentile

Percentile	p10	p25	p50	p75	p90	Mean
	180	270	375	600	852.5	462
Percentile ratios	p90/p10	p90/p50	p10/p50	p75/p25	p75/p50	p25/p50
	4.7	2.3	0.5	2.2	1.6	0.7

Table 7: Wage Inequality

Group	Gini
Whole country	**33.2**
Gender	
Male	32.4
Female	35
Urban / rural	
Urban	32.1
Rural	30.8
Education	
Illiterate	27.2
Primary	25.1
Preparatory	27
Secondary	28.7
University	24.9
Formal/informal	
Informal	29.1
Formal	31.9
Public/private	
Private	28.8
Public	27.2
Contract type	
Fixed-term	25.3
Open-ended	30.5
No Contract	29.1

Table 8

	PUBLIC						PRIVATE					
	OLS	0.10	0.25	0.50	0.75	0.90	OLS	0.10	0.25	0.50	0.75	0.90
Female	-0.0779***	-0.0714***	-0.0683***	-0.0502***	-0.0420***	-0.0680***	-0.2020***	-0.1990***	-0.2087***	-0.1927***	-0.1849***	-0.1830***
	(0.0059)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0003)	(0.0057)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Age	0.0225***	0.0312***	0.0252***	0.0167***	0.0123***	0.0181***	0.0294***	0.0489***	0.0366***	0.0275***	0.0206***	0.0152***
	(0.0024)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0014)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0001)
Age sq	-0.0002***	-0.0003***	-0.0002***	-0.0001***	-0.0001***	-0.0001***	-0.0003***	-0.0005***	-0.0004***	-0.0003***	-0.0002***	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Married	0.0990***	0.1054***	0.0800***	0.0764***	0.0641***	0.0584***	0.1082***	0.1267***	0.1117***	0.0786***	0.0854***	0.1215***
	(0.0077)	(0.0005)	(0.0003)	(0.0003)	(0.0003)	(0.0004)	(0.0056)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Primary	0.1377***	0.1290***	0.1375***	0.1163***	0.1636***	0.1566***	0.0994***	0.1013***	0.0885***	0.1013***	0.1049***	0.1143***
	(0.0159)	(0.0010)	(0.0007)	(0.0006)	(0.0006)	(0.0009)	(0.0082)	(0.0005)	(0.0004)	(0.0003)	(0.0003)	(0.0004)
Preparatory	0.3295***	0.3553***	0.3233***	0.2831***	0.3822***	0.3977***	0.1773***	0.1865***	0.1670***	0.1740***	0.1750***	0.1719***
	(0.0174)	(0.0011)	(0.0007)	(0.0006)	(0.0007)	(0.0010)	(0.0094)	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0004)
Secondary	0.5576***	0.5988***	0.5631***	0.5503***	0.6146***	0.5826***	0.2658***	0.2410***	0.2210***	0.2391***	0.2862***	0.3258***
	(0.0156)	(0.0010)	(0.0007)	(0.0005)	(0.0006)	(0.0009)	(0.0095)	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0004)
University	0.9160***	1.0354***	0.9310***	0.8561***	0.8834***	0.9006***	0.6308***	0.4721***	0.4776***	0.5960***	0.7328***	0.8350***
	(0.0156)	(0.0010)	(0.0007)	(0.0005)	(0.0006)	(0.0009)	(0.0115)	(0.0007)	(0.0005)	(0.0004)	(0.0004)	(0.0005)
Agriculture	-0.1088***	-0.1866***	-0.2012***	-0.1339***	-0.1043***	-0.1096***	-0.0717***	-0.0840***	-0.0964***	-0.0779***	-0.0716***	-0.0528***
	(0.0216)	(0.0014)	(0.0010)	(0.0008)	(0.0009)	(0.0013)	(0.0148)	(0.0009)	(0.0006)	(0.0005)	(0.0005)	(0.0007)
Manufact. Industry	0.1923***	0.0707***	0.1277***	0.1667***	0.2337***	0.2867***	0.2278***	0.3430***	0.2709***	0.2264***	0.1577***	0.1582***
	(0.0195)	(0.0012)	(0.0009)	(0.0007)	(0.0008)	(0.0011)	(0.0143)	(0.0008)	(0.0006)	(0.0004)	(0.0005)	(0.0006)
Construction	0.1320***	0.1168***	0.1268***	0.1152***	0.1096***	0.1548***	0.1636***	0.0877***	0.1481***	0.1867***	0.1987***	0.2390***
	(0.0407)	(0.0027)	(0.0019)	(0.0015)	(0.0017)	(0.0025)	(0.0140)	(0.0008)	(0.0006)	(0.0004)	(0.0005)	(0.0006)
Textile	-0.1069	-0.1834***	-0.1990***	-0.1404***	-0.1551***	-0.1010***	0.2022***	0.3477***	0.2612***	0.1964***	0.1155***	0.0888***
	(0.0733)	(0.0044)	(0.0030)	(0.0025)	(0.0028)	(0.0040)	(0.0144)	(0.0008)	(0.0006)	(0.0004)	(0.0005)	(0.0006)
Other Industry	0.1861***	0.0791***	0.0914***	0.1668***	0.2463***	0.3000***	0.1967***	0.2328***	0.1979***	0.1886***	0.1522***	0.1962***
	(0.0144)	(0.0009)	(0.0006)	(0.0005)	(0.0006)	(0.0008)	(0.0164)	(0.0009)	(0.0007)	(0.0005)	(0.0006)	(0.0007)
Commerce	-0.0535	-0.1509***	-0.0850***	-0.0622***	-0.0020*	0.0496***	0.0904***	0.1036***	0.1208***	0.1040***	0.0642***	0.0654***
	(0.0333)	(0.0018)	(0.0013)	(0.0010)	(0.0012)	(0.0017)	(0.0148)	(0.0009)	(0.0006)	(0.0005)	(0.0005)	(0.0007)
Transport-Telecom	0.1368***	0.0599***	0.0567***	0.1084***	0.1837***	0.2420***	0.2823***	0.2928***	0.2713***	0.3017***	0.2880***	0.3515***
	(0.0114)	(0.0006)	(0.0004)	(0.0004)	(0.0004)	(0.0006)	(0.0173)	(0.0010)	(0.0007)	(0.0005)	(0.0006)	(0.0008)
Hotels	-0.0079	0.0724***	-0.0518***	-0.0894***	-0.0148***	0.0244***	0.2094***	0.3045***	0.2352***	0.2132***	0.1579***	0.1668***
	(0.0486)	(0.0028)	(0.0019)	(0.0016)	(0.0018)	(0.0026)	(0.0156)	(0.0009)	(0.0006)	(0.0005)	(0.0005)	(0.0007)
Bank & Insurance	0.1745***	0.1215***	0.1171***	0.1633***	0.2186***	0.3002***	0.1964***	0.1638***	0.1827***	0.1926***	0.1892***	0.2478***
	(0.0231)	(0.0011)	(0.0008)	(0.0006)	(0.0007)	(0.0010)	(0.0161)	(0.0009)	(0.0006)	(0.0005)	(0.0006)	(0.0007)
Social Services	-0.1373***	-0.1639***	-0.1373***	-0.1149***	-0.0968***	-0.0971***	-0.1018***	-0.1000***	-0.1258***	-0.0774***	-0.0983***	-0.0945***
	(0.0133)	(0.0008)	(0.0005)	(0.0004)	(0.0005)	(0.0007)	(0.0167)	(0.0009)	(0.0007)	(0.0005)	(0.0006)	(0.0007)
Fixed-term	-0.7096***	-1.0889***	-1.0437***	-0.7093***	-0.5202***	-0.3695***	-0.1034***	-0.1078***	-0.0707***	-0.0808***	-0.0927***	-0.1093***
	(0.0112)	(0.0007)	(0.0005)	(0.0004)	(0.0004)	(0.0006)	(0.0058)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0003)
No contract	-0.4391***	-0.7347***	-0.6233***	-0.4775***	-0.2536***	-0.1794***	-0.2002***	-0.2798***	-0.2038***	-0.1811***	-0.1593***	-0.1405***
	(0.0112)	(0.0008)	(0.0005)	(0.0004)	(0.0005)	(0.0007)	(0.0065)	(0.0004)	(0.0003)	(0.0002)	(0.0002)	(0.0003)
North East	-0.0467***	-0.0443***	-0.0185***	-0.0367***	-0.0446***	-0.0721***	-0.0662***	-0.0569***	-0.0526***	-0.0460***	-0.0623***	-0.0773***
	(0.0100)	(0.0005)	(0.0004)	(0.0003)	(0.0003)	(0.0005)	(0.0072)	(0.0004)	(0.0003)	(0.0002)	(0.0002)	(0.0003)

North West	-0.0898***	-0.0603***	-0.0333***	-0.0333***	-0.0485***	-0.0802***	-0.1678***	-0.1826***	-0.2056***	-0.1555***	-0.1689***	-0.1747***
	(0.0097)	(0.0007)	(0.0005)	(0.0004)	(0.0004)	(0.0006)	(0.0098)	(0.0007)	(0.0005)	(0.0004)	(0.0004)	(0.0005)
Center East	0.0223***	-0.0155***	0.0067***	0.0172***	0.0211***	0.0747***	0.0733***	0.0786***	0.0682***	0.0697***	0.0610***	0.0645***
	(0.0080)	(0.0004)	(0.0003)	(0.0002)	(0.0003)	(0.0004)	(0.0066)	(0.0004)	(0.0002)	(0.0002)	(0.0002)	(0.0003)
Center West	-0.0269***	0.0111***	0.0118***	-0.0028***	-0.0253***	-0.0686***	-0.1397***	-0.1831***	-0.2130***	-0.1287***	-0.1139***	-0.1088***
	(0.0095)	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0006)	(0.0099)	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0005)
South East	-0.1026***	-0.0947***	-0.0731***	-0.0806***	-0.0970***	-0.1251***	-0.0368***	-0.0008	-0.0155***	-0.0230***	-0.0645***	-0.0829***
	(0.0105)	(0.0007)	(0.0005)	(0.0004)	(0.0004)	(0.0006)	(0.0099)	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0005)
South West	-0.0502***	-0.0305***	0.0009	-0.0169***	-0.0370***	-0.0735***	-0.0770***	-0.0296***	-0.0566***	-0.0782***	-0.1220***	-0.1161***
	(0.0115)	(0.0009)	(0.0006)	(0.0005)	(0.0006)	(0.0008)	(0.0117)	(0.0010)	(0.0007)	(0.0005)	(0.0006)	(0.0007)
Urban	0.0780***	0.0820***	0.0702***	0.0617***	0.0488***	0.0622***	0.1040***	0.1070***	0.0984***	0.0836***	0.0870***	0.0903***
	(0.0073)	(0.0005)	(0.0003)	(0.0003)	(0.0003)	(0.0005)	(0.0050)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Constant	5.1950***	4.5997***	5.0007***	5.3988***	5.5743***	5.6146***	4.8617***	4.0449***	4.5559***	4.9277***	5.2572***	5.4964***
	(0.0501)	(0.0029)	(0.0020)	(0.0016)	(0.0019)	(0.0027)	(0.0300)	(0.0018)	(0.0012)	(0.0009)	(0.0011)	(0.0013)
Observations	19,476	19,476	19,476	19,476	19,476	19,476		40,207	40,207	40,207	40,207	40,207

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix A.1

Table A1: Descriptive (Average) Statistics

	All		Female		Male	
	Public	Private	Public	Private	Public	Private
Log wage	6.4	5.79	6.39	5.66	6.4	5.83
Demographics						
Female	0.33	0.28				
Age	40.8	35.1	39.1	31.8	41.6	36.3
Married	0.76	0.55	0.72	0.41	0.78	0.61
Education						
Illiterate	0.03	0.08	0.04	0.1	0.03	0.07
Primary	0.17	0.46	0.09	0.36	0.21	0.49
Preparatory	0.08	0.2	0.04	0.21	0.1	0.2
Secondary	0.32	0.19	0.3	0.22	0.33	0.17
University	0.39	0.08	0.53	0.11	0.33	0.06
Industry						
Agriculture	0.02	0.11	0.01	0.09	0.02	0.12
Manufact. Industry	0.02	0.12	0	0.15	0.03	0.11
Construction	0	0.29	0	0.02	0.01	0.4
Textile	0	0.14	0	0.4	0	0.04
Other Industry	0.04	0.04	0.01	0.03	0.05	0.05
Commerce	0.01	0.08	0	0.09	0.01	0.08
Transport- Telecom	0.06	0.03	0.03	0.01	0.07	0.04
Hotels	0	0.06	0	0.03	0	0.07
Bank & Insurance	0.01	0.05	0.02	0.05	0.01	0.04
Social Services	0.04	0.04	0.05	0.09	0.04	0.02
Education-Health Services	0.8	0.03	0.88	0.05	0.76	0.02
Contract type						
Open-ended	0.86	0.43	0.83	0.5	0.88	0.4
Fixed-term	0.07	0.2	0.1	0.32	0.05	0.16
No contract	0.07	0.37	0.07	0.18	0.07	0.44
Area						
Urban	0.82	0.66	0.89	0.74	0.78	0.63
Location						
Greater Tunis	0.2	0.17	0.21	0.2	0.2	0.16
North East	0.11	0.19	0.12	0.24	0.11	0.16
North West	0.13	0.08	0.14	0.06	0.12	0.09
Center East	0.25	0.35	0.26	0.4	0.24	0.34
Center West	0.14	0.09	0.14	0.06	0.14	0.11
South East	0.09	0.08	0.08	0.03	0.1	0.09
South West	0.07	0.04	0.06	0.02	0.08	0.05

Table A2: Detailed Quantile Decomposition

	Percentile								
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Difference	0.5006*	0.5862*	0.6188*	0.6588*	0.6920*	0.7048*	0.6956*	0.6558*	0.5682*
	(0.0127)	(0.0083)	(0.0074)	(0.0070)	(0.0058)	(0.0052)	(0.0052)	(0.0058)	(0.0092)
Characteristics	0.7086*	0.7063*	0.6634*	0.6431*	0.6210*	0.5872*	0.5359*	0.4572*	0.3436*
	(0.0328)	(0.0267)	(0.0247)	(0.0247)	(0.0233)	(0.0219)	(0.0216)	(0.0218)	(0.0215)
Coefficients	-0.208*	-0.1201*	-0.0446	0.0157	0.0709*	0.1176*	0.1597*	0.1985*	0.2246*
	(0.0327)	(0.0271)	(0.0245)	(0.0244)	(0.0230)	(0.0215)	(0.0213)	(0.0215)	(0.0213)

Note: * p<0.05