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IZA DP No. 14563

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the Last Two Decades:
Evidence from Tunisia**

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ABSTRACT

Trends in Growth and Labor Markets in the Last Two Decades: Evidence from Tunisia*

Tunisia's GDP contracted by -8.8 percent in 2020, the worst performance since gaining independence in 1956. The poverty rate in Tunisia could reach at least 20.9, the same level recorded in 2010, and as high as 25 percent according to various estimates (Kokas et al., 2020); while inequality could reach an unprecedented Gini level of 0.41. While Tunisia has faced difficult political, economic and social challenges—in addition to the global COVID-19 pandemic—Tunisia's performance was below peer countries even during periods of strong growth. All economic sectors in Tunisia have declined, except agriculture, and structural transformation has been weak. Nearly 68 percent of workers are employed in sectors with the lowest productivity. Youth and women have been especially left behind as job growth has not kept pace with university graduates and growth in the working-age population: early 32 percent of Tunisian youth were “Not in Education, Employment, or Training” (NEET), and female labor force participation (FLFP) of 29 percent remains among the lowest in the world. Clearly, key labor market challenges in terms of poor job creation, and low quality of job have not seen much progress since the Arab Revolution. This paper aims to shed light on the main obstacles to creating sufficient employment and addressing labor market distortions in Tunisia, based on several data sources, including latest rounds of labor force surveys, and helps recognize issues that require immediate policy attention in the labor market in Tunisia.

JEL Classification: J31, F16

Keywords: labor markets, employment, Tunisia

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1. Introduction

In 2020, Tunisia recorded an unprecedented GDP contraction with a negative growth rate of -8.8 percent, the worst performance since the country gained its independence in 1956. This downward trend continued at the beginning of 2021 with decline in GDP in the first quarter of -3%.

While poor performance is largely attributable to the continuing global COVID-19 pandemic, Tunisia has faced difficult political, economic and social challenges over the past decade. Politically, despite the country's success in adopting a new constitution in 2014 and the organization of legislative and presidential elections in 2014 and 2019, the last decade has seen 14 successive governments, which has not helped the country to focus on the aspirations of Tunisians and the challenges that emerged after the 2011 revolution. The two strategic sectors of the economy, namely phosphate and oil, experienced dramatic declines from 2010 historic production levels, mainly due to social movements that continue to spread in key production regions in the south.

These events have seriously put Tunisia's significant poverty and inequality reduction achievements over the last two decades at risk. A recent study by Kokas et al. (2020) shows that the poverty rate in Tunisia could reach 20.9 percent as a result of the Covid-19 crisis, the same level recorded in 2010. More pessimistic scenarios show that poverty could increase to the 25 percent and that inequality, as measured by the Gini index, could reach an unprecedented level of 0.41. UNDP (2020) and UNICEF (2020) studies draw similar conclusions. The pandemic health crisis has also confirmed the vulnerability of several key economic sectors, such as tourism and construction, to exogenous shocks and the poor quality and precariousness of the jobs these sectors create.

This context has brought back to the forefront the vexing question on whether Tunisia has the capacity to pave a growth path that creates enough good jobs and ensures equitable access to economic opportunities. To shed light on this question, it is important to understand in depth the main obstacles to creating sufficient employment and addressing labor market dysfunctions. This is the main objective of this paper. Some existing studies analyze similar questions for Pre-Arab Revolution period and find that Tunisia has suffered from issues such as high and increasing rates of youth and graduate unemployment especially among females and in the lagging regions, poor job quality among the poor. For example, using Tunisia Panel Survey 2014, Assaad and Boughzala (2018) comprehensively analyze developments leading to the Tunisian revolution of 2010-11 and its consequences for employment conditions.

So far, however, there hasn't been any study that systematically looks at growth and labor trends and outcomes in Tunisia over the last two decades, covering both the Pre-Arab and Post-Arab Revolution periods. This remains pertinent as it is important for policymakers to understand how labor market outcomes have evolved post the Arab Revolution. Given this, the main objective of this paper is to analyze the characteristics of Tunisia's economic growth over the last two decades and performance of the labor market. Our analysis will identify the main obstacles Tunisians face in accessing employment and benefiting from economic growth, especially since the Arab Revolution and also discuss some possible policy implications for this.

The rest of the paper is organized as follows: Section 2 presents the economic, demographic, business climate, and recent labor productivity trends in Tunisia, and discusses the extent to which the economy has achieved structural change. Section 3 analyzes the profile of the employed population,

and recent employment trends. Section 4 analyzes the level and structure of unemployment, highlighting key demand side labor market issues. Section 5 concludes and provides policy implications for our findings.

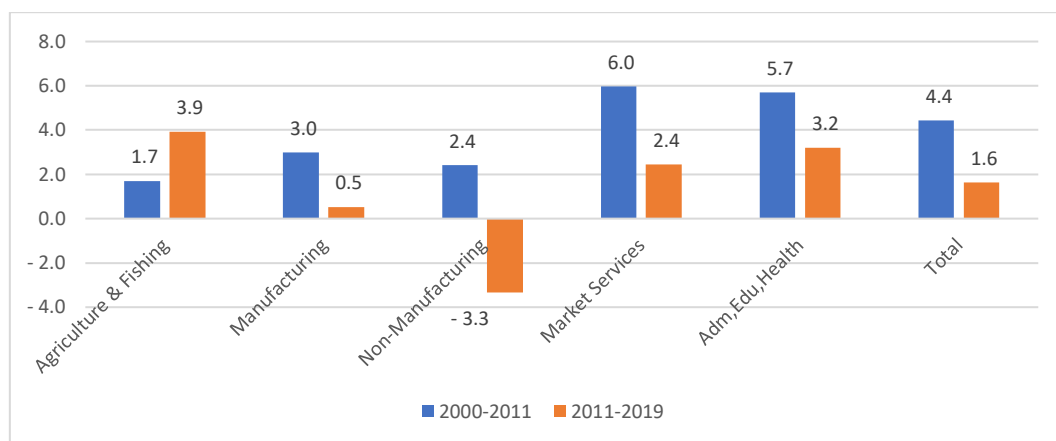
We rely on multiple sources of data for a comprehensive assessment of the growth, and labor market outcomes. Specifically, substantial part of the analysis on growth and labor force between 2005 and 2019 is done using data sourced from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

2. Macroeconomic Context and Job Creation

Tunisia’s economy has been growing over the last two decades, but the pace slowed after the 2011 revolution, with the slowdown becoming more pronounced since 2015. Over the last two decades, the Tunisian GDP grew at an average annual rate of 3.3 percent; but the situation in Tunisia has been very different before and after the Arab Revolution. Before the revolution in late 2010, the Tunisia economy grew at an average rate of 4.4 percent between 2000 and 2010, more than double the average rate between 2011 and 2019 of 1.6 percent. Deceleration in the pace of growth became particularly pronounced after 2015, with average growth of 1.6 percent from 2015 to 2019. The COVID-19 pandemic has further aggravated the economic downturn, with the Tunisian economy contracting by -8.8 percent in 2020.

All economic sectors in Tunisia have declined except agriculture, which has maintained average growth of 2 percent per year over the last two decades (see Figure 1). In particular, we note the significant decline in non-manufacturing industries of -1.1 percent due to cessation of phosphate mining and declining investment in oil exploration. This decline has decreased public revenues and financial balances, with public debt rising from 41 percent to more than 72 percent between 2010 and 2019.

Figure 1: Average growth rate by sector 2000-2019



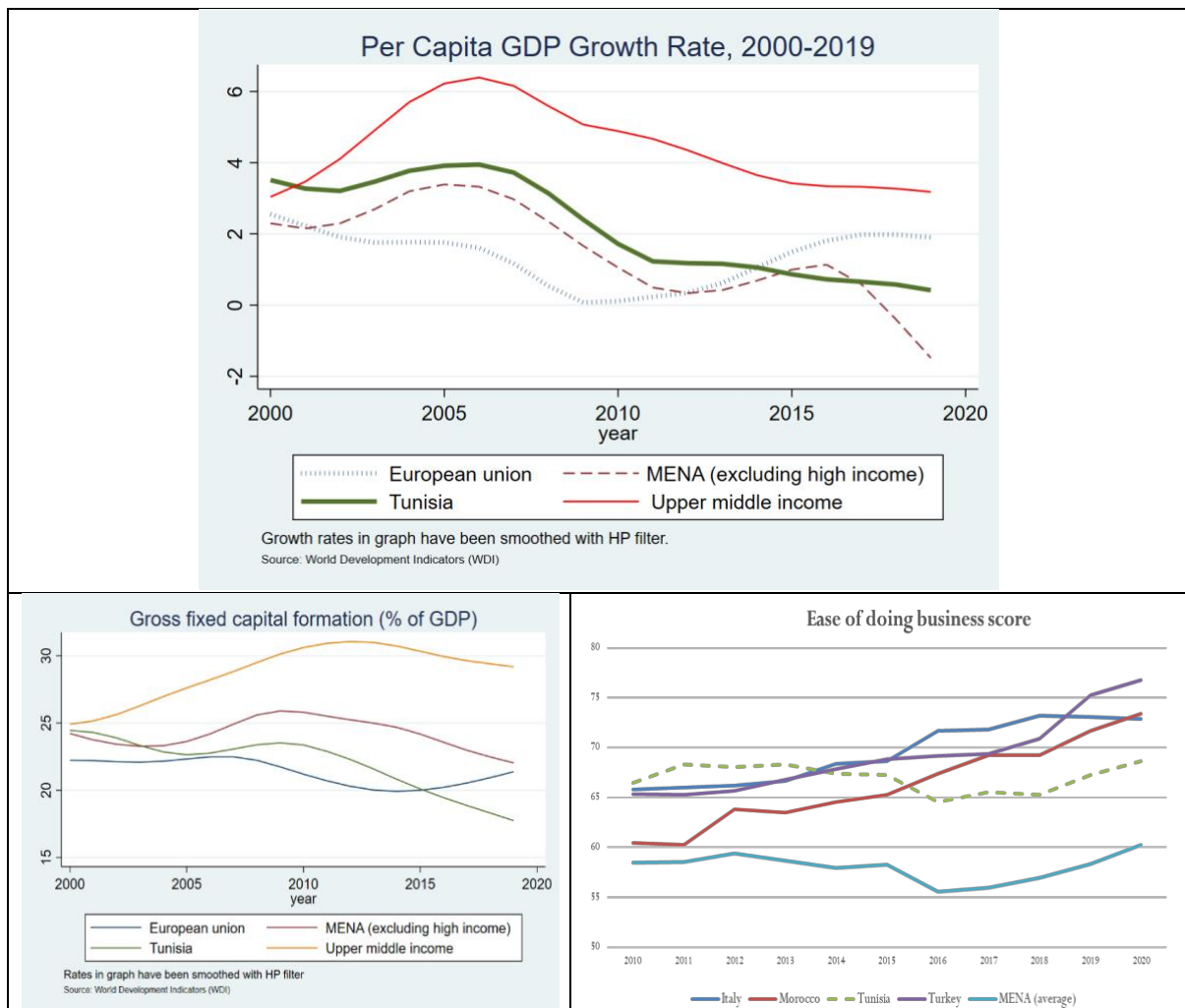
Note: Non-manufacturing industries include Mining & Energy, Water, Construction. Market services includes tourism.

Source: Authors’ calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Tunisia’s post-revolutionary socio-political context clearly contributed to growth deceleration after 2011, but Tunisia's performance was below peer countries even during periods of strong growth. Figure 2 shows that the country's performance was below the upper middle-income country (UMIC)

average, and that the investment rate stagnated at levels below regional neighbors since at least 2000. According to World Bank (2014) and Assaad and Boughzala (2018), Tunisia does not seem to be fully exploiting its potential due to, among other factors, high unemployment and low quality of jobs. Moreover, this work shows that excessive regulation of the economy and lack of competition hamper private sector growth and jobs creation in Tunisia.²

Figure 2: Selected macro indicators



Source: Authors' calculation based on WDI and doing business data.

Over the last two decades, the contribution of total factor productivity (TFP) to growth has steadily declined and turned negative after the revolution, and capital accumulation has driven the modest post-revolution growth. Modest growth achieved after the revolution is due to capital accumulation, even though it remains low. As shown in Table 1, the contribution of TFP declined from an average of 45 percent before 2002 to 28 percent between 2002 and 2010 to -13 percent between 2011 and 2018.

² For detailed analysis of this issue see *Chapter 3: Cronyism, Economic Performance, and Unequal Opportunity* of the World Bank Development Policy Review (2014).

The contribution of labor accumulation remained relatively constant over the past two decades, but less than capital accumulation.

Labor productivity also declined significantly after 2011 in almost all sectors (Figure 3). Before the revolution, annual productivity growth was about 2 percent but declined to about 0.7 percent after 2011. The decline in productivity in manufacturing is mainly due to the shutdown of mining and oil activities. Agriculture is the only sector in which productivity increased, even if it remains fairly low.

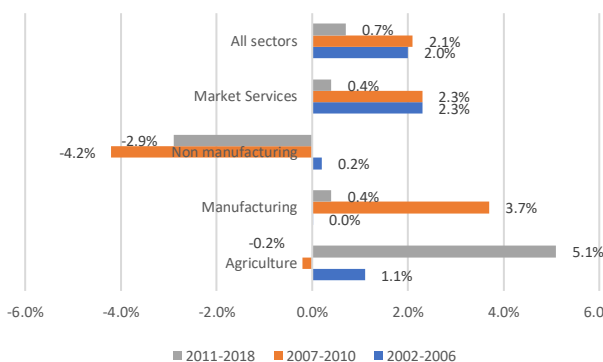
Table 1: GDP growth decomposition 1992-2018

	1982-1991	1992-2001	2002-2010	2011-2018
Labor accumulation	34,3%	31,8%	28,6%	29,0%
Capital accumulation	17,1%	23,8%	43,2%	84,2%
TFP	45,8%	44,3%	28,1%	-13,2%
GDP growth	3,3%	4,9%	4,4%	1,7%

Source: Authors' elaboration based on ITCEQ data.

Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Figure 3: Annual growth rate of labor productivity in %



Over the past two decades, structural economic transformation³ Tunisia has been weak. Indeed, a detailed analysis by El Lahga *et al.* (2016) shows that reallocation of jobs in Tunisia is low compared to other developing countries. Moreover, more job reallocation occurred in low versus high-productivity sectors. In the decade before the revolution, nearly 71 percent of excessive job reallocation⁴ took place within sectors. The weak reallocation of jobs constrains productivity growth and potential efficiency gains from job destruction and creation. Private firms face serious challenges, in particular in terms of access to certain highly protected sectors, poor financing conditions, and logistical difficulties. All of these obstacles significantly hamper private sector development and the ability of firms to position themselves in high value-added activities at the top of Mediterranean regional value chains.

One consequence of delayed structural transformation is that the structure of production and employment across broad economic sectors have not changed over the last two decades. From 1997 to 2018, the share of agriculture in GDP declined slightly from 12 to 11 percent (see Figure 4), services remained nearly constant from 42 to 45 percent, while non-manufacturing industries declined from 11 to 9 percent, and the manufacturing industries' share decreased from 18 to 16 percent.⁵ Similarly,

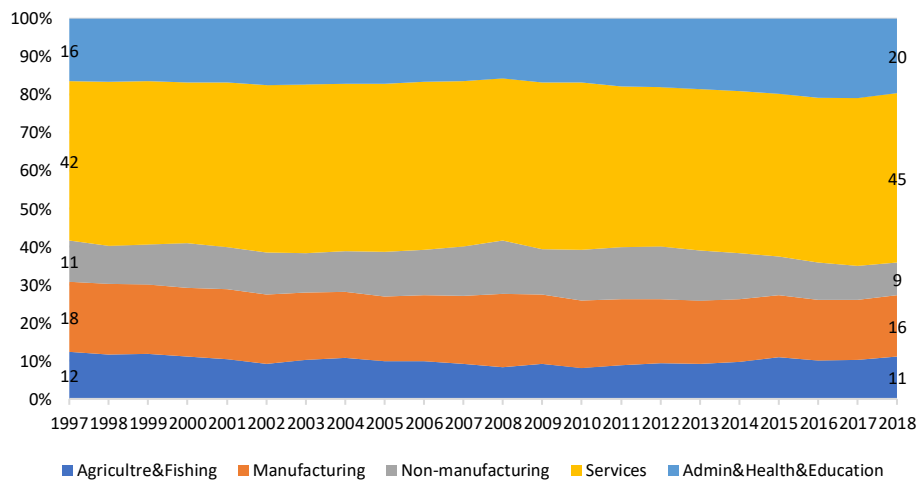
³ Movement of labor and other productive resources from low-productivity to high-productivity economic activities.

⁴ In a given period t , we define job creation rate (JCR) as the sum of all employment gains divided by total employment at the beginning of the period. Similarly, the job destruction rate (JDR) is defined as the sum of all employment losses divided by total employment at the beginning of the period. The Job turnover or reallocation rate (JRR) is the sum of JCR and JDR. The rate of excess job reallocation is defined by the difference between JRR and net employment growth.

⁵ The first chapter of the World Bank DPR (2014) presents an-depth discussion of the limits of structural change.

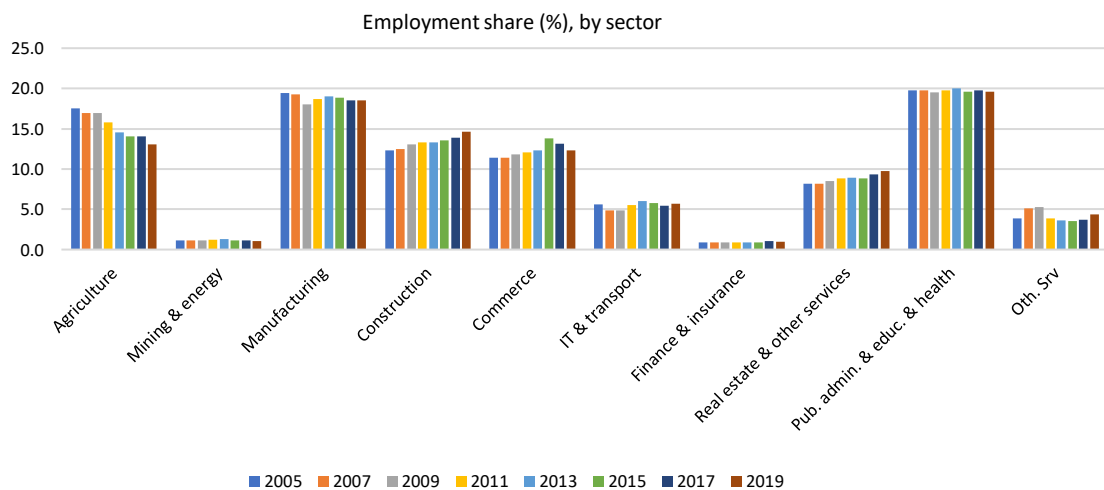
Figure 5 shows no significant changes in employment shares across economic sectors between 2005 and 2019.

Figure 4: GDP composition (%)



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Figure 5: Employment share (%), by sector

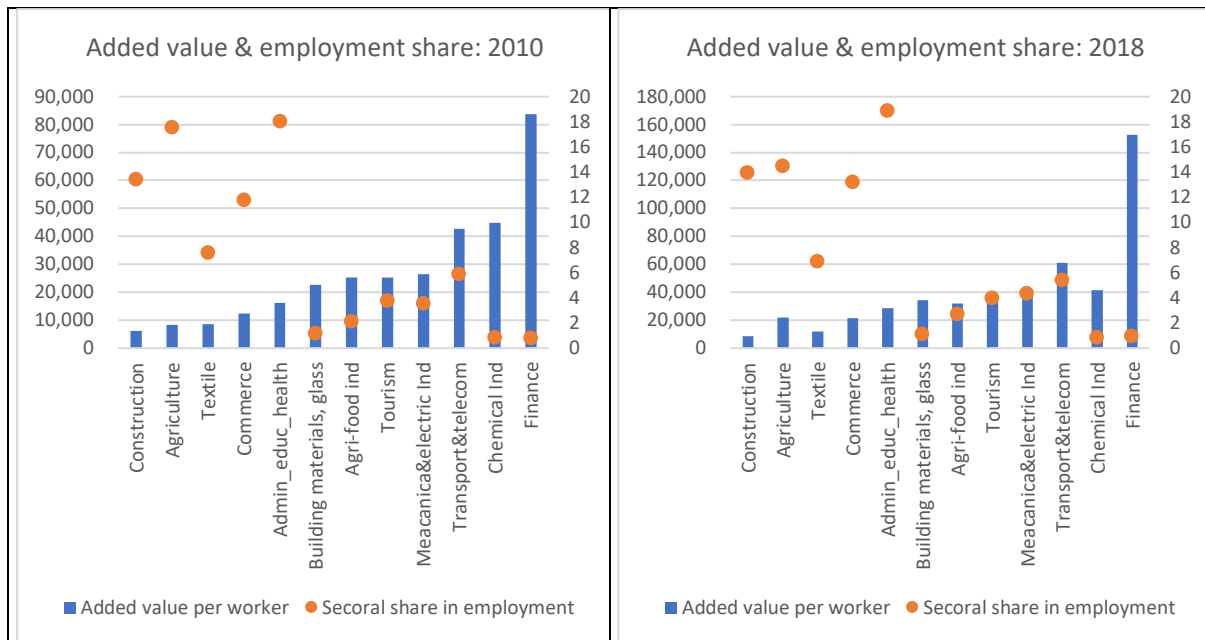


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Misallocation of resources is one of the most notable problematic features of employment in Tunisia. Most jobs concentrate in low-productivity sectors such as agriculture, construction, and public administration, with little change over the last decade. The economy is stuck in low-productivity activities, with nearly 68 percent of workers employed in sectors with the lowest productivity (Figure 6). Paradoxically, productivity of some industrial sectors in Tunisia is comparable to that of the

agricultural sector. This reflects Tunisia's positioning at the bottom of value chains and the prevalence of simple processing activities.

Figure 6: Distribution of employment by sector and added value by worker



Source: Authors' elaboration based on ITCEQ data.

Employment growth in Tunisia has not kept pace with demographic pressures for university graduates and the prime working-age population. Employment grew steadily over the last two decades, but at a much slower pace after 2011. Average growth rate in employment decreased from 1.7 percent per year between 2000 and 2011 to 1.2 percent between 2011 and 2018. The decline is explained by the poor performance of some economic sectors whose employment growth rates are negative, such as market services, manufacturing industries, and agriculture. Social movements in the south of the country have paralyzed phosphate and energy production, and interrupted activities. Value-added growth rates have decelerated in all activities except agriculture, which hinders the ability of the economy to absorb the additional supply of labor in the market: the employment growth rate averaged 1.4 percent from 2005 to 2019 compared with a labor force growth rate of 1.6 percent (Figure 7), with an employment creation deficit among higher education graduates and the 25-34 age group.

Modest growth in employment also hides serious regional disparities. The annual rate of employment growth varies from 2.8 percent in Grand Tunis to -0.9 percent in the North-West region (Figure 8). The poorest regions, namely the North and Center-West, have the lowest job creation rates. These results are not surprising given the structure of the economy and the concentration of activities in certain regions (World Bank DPR, 2014).

Figure 7: Annual growth rate of labor force and employment

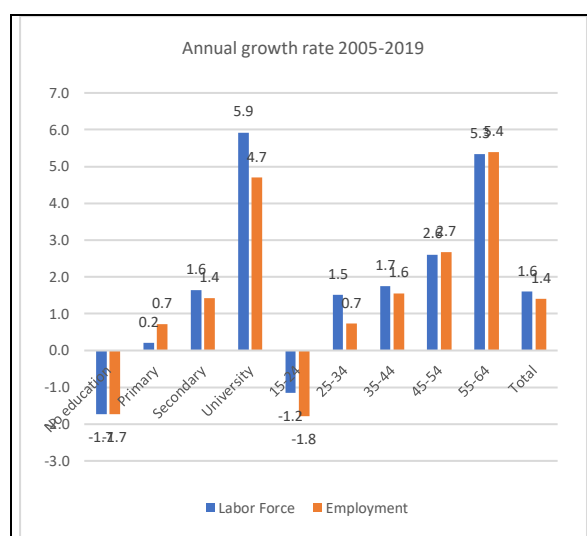
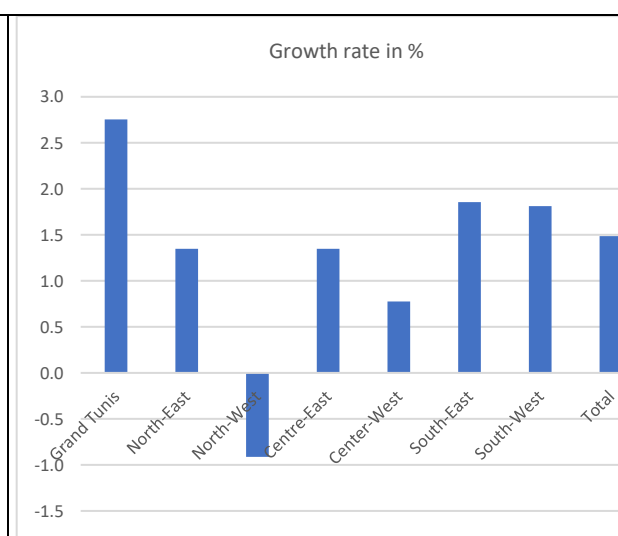


Figure 8: Annualized growth rate of employment 2011-2019, by region



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Employment growth elasticity seems to have improved for the whole economy, but with disparities across sectors. As shown in Table 2, employment elasticity for the economy as a whole improved from 0.5 over the 2000-2011 period to 0.72 between 2011 and 2018. Although overall elasticity appears to be in the range generally observed in developing countries, sectoral elasticity varies considerably from -0.1 in agriculture to 1.68 in manufacturing. Manufacturing is characterized by investments in admittedly low-productivity but very labor-intensive activities within the mechanical and electrical industries.

Table 2: Employment elasticity

	Arc Elasticity	
	2000-2011	2011-2018
Agriculture & Fishing	0.11	-0.1
Manufacturing	0.31	1.68
Non-Manufacturing	4.1	-0.88
Market Services	0.59	0.69
Adm, Edu, Health	0.37	0.64
Total	0.5	0.72

Source: Authors' elaboration based on ITCEQ data.

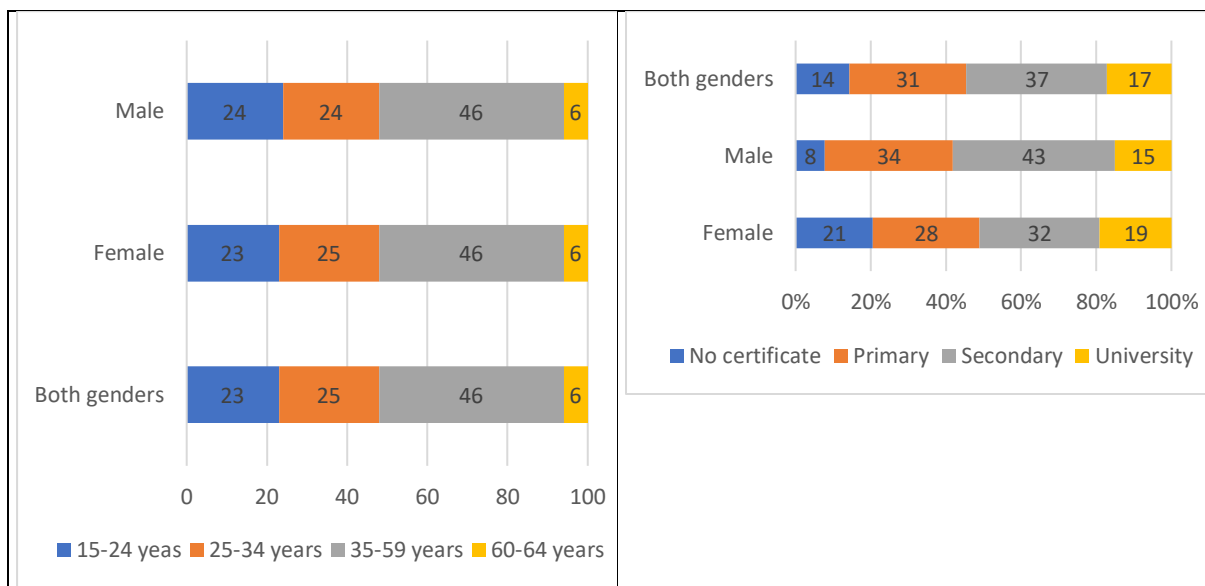
3. Employment Patterns 2005-2019

The working-age population (15-64 years) was estimated at 7.9 million by the World Bank in 2019. We further segment this group by age, education, geography, and gender. Seventy percent of the working age population lives in urban areas. Nationally, almost half of the working-age population falls in the 15-34 age group, and 46 percent in the 35-59 age group. Working-age population distributions by age

are similar for men and women only. (Figure 9). By educational status, at the national level, 14 percent of the working-age population is uneducated without any certificate, almost one-third has primary education, and more than 50 percent has at least secondary education. Working-age women are considerably less educated; 21 percent of women in the working-age population are uneducated without any certificate, in contrast to only 8 percent of men (Figure 10). The distribution of the working-age population also significantly differs across geographic areas. A quarter of the working-age population is located in the capital city of Tunis, followed by nearly 24 percent in the Center-East region, 14.1 percent in the North-East region, and nearly 28 percent in the poorest Western region (Figure 11).

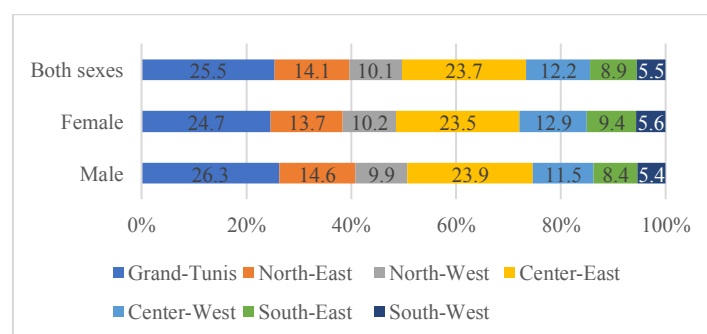
Figure 9: Distribution of working age population by age and gender

Figure 10: Distribution of working population by education



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Figure 11: Distribution of the working-age population by region

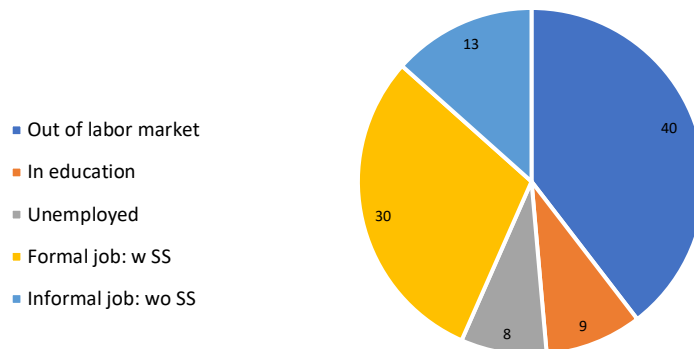


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Not everyone in the working-age population is participating in the labor market (Figure 12). Among the eight million Tunisians aged between 15 and 64, 40 percent are outside the labor force, 9 percent

are in schools and universities, 8 percent are unemployed, 30 percent are in formal jobs, and 13 percent are in the informal sector. The low female participation rate explains the relatively high proportion of the inactive population. Female labor force participation (FLFP) is estimated throughout the last two decades at 29 percent, which remains among the lowest in the world, although comparable to regional standards. These results suggest that the Tunisian economy is far from taking full advantage of its abundant human resources.

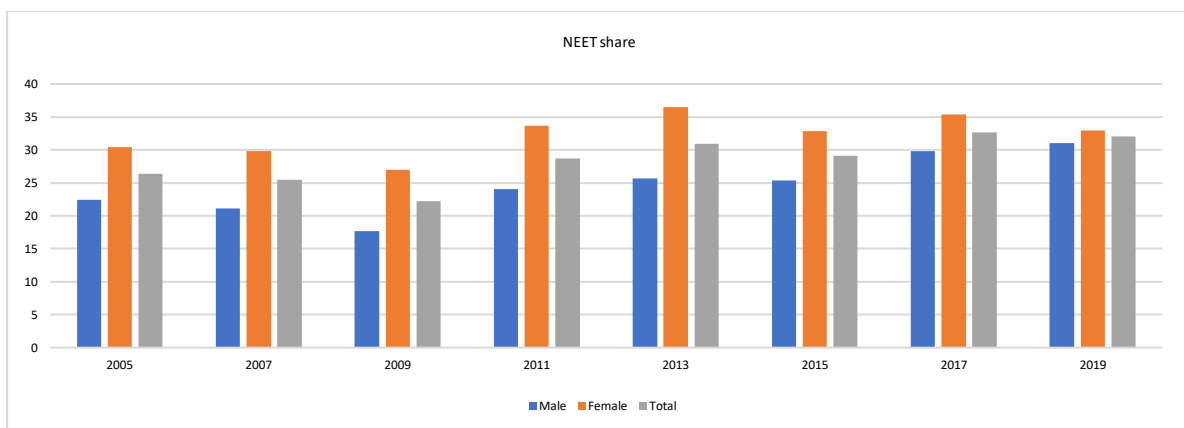
Figure 12: Working-age population status with respect to labor market



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

A high proportion of the younger population is under "NEET" status. In 2019, nearly 32 percent of young people aged between 15 and 24 were "Not in Education, Employment, or Training" (NEET) status (Figure 13). This high proportion is furthermore constantly increasing over time, especially for men, reflecting the inability of current economic policies to integrate people into the labor market. These trends help feed predictable illegal emigration and radicalization of young people, and Tunisia must adopt new measures and policies to stem these troublesome trends.

Figure 13: NEET trend 2005-2019



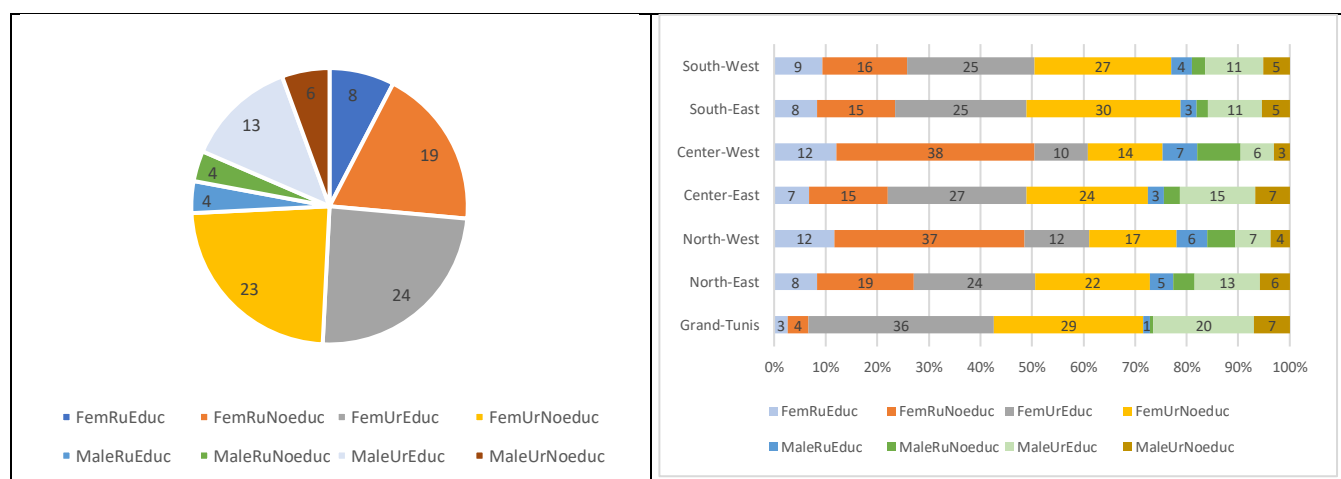
Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Tunisian women are more likely to be inactive, irrespective of educational status. In 2019, uneducated women living in urban areas represented 23 percent of the inactive population, and uneducated women living in rural areas represented 19 percent. Surprisingly, almost one-quarter of the inactive population are women located in urban areas with an educational certificate. Thirteen percent of the inactive population are men located in urban areas with an educational certificate (Figure 14).

The distribution of the inactive population varies substantially by region. In the South-West region, females in urban areas represented a substantial portion of the inactive population in 2019. Segmenting by educational status, 25 percent of women in urban areas with an educational degree and 27 percent of females in urban areas with no educational degree are part of the inactive population. In the Center-West and North-West regions, women in rural areas with no educational certificate make up 37 to 38 percent of the inactive population. Not surprisingly, in the urban Grand Tunis area, 36 percent of the inactive population are women with an educational certificate, followed by 29 percent women with no educational certificate (Figure 15).

Figure 14 : Distribution of inactive population by gender, educ, and area area

Figure 15: Regional distribution of inactive population by gender, educ,



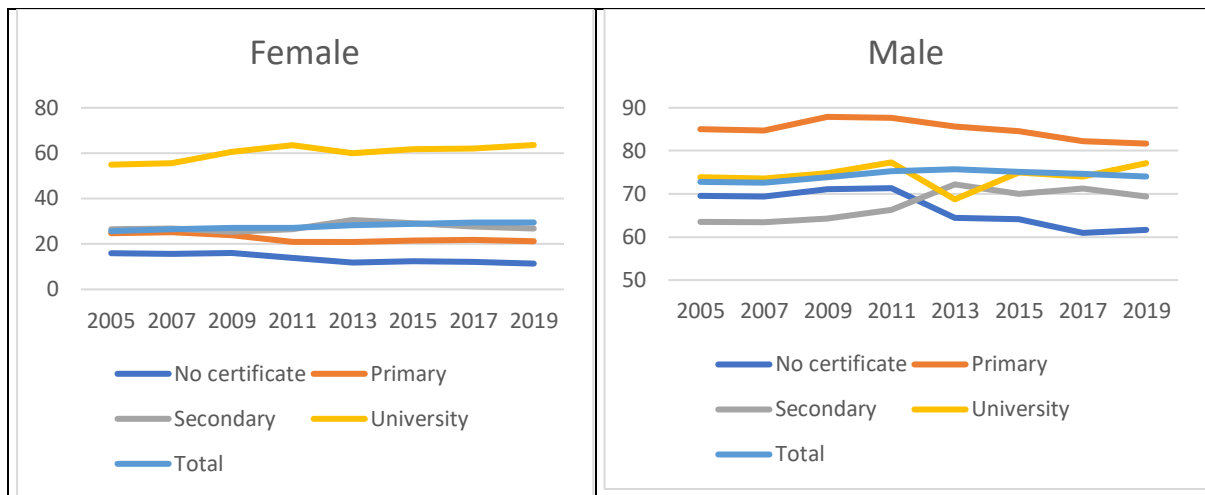
Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Women's participation in the labor market is strongly determined by their level of education and age. As Figure 16 shows, the participation rate of women with a university degree was 64 percent in 2019, compared to 21 percent for those with a primary education, and 27 percent for those with a secondary education in 2019. The participation rate of women declines sharply after age 35, typically after they are married and have a child (Figure 17). Social norms that continue to place an ordinate share of the domestic work burden on women discourage their participation in the labor market. In addition, performing domestic work increases women's reservation wage⁶ and thus reduces the likelihood that they will take advantage of economic opportunities.

⁶ The lowest wage rate at which a worker would be willing to accept a particular type of job; or in other words, the theoretical hourly rate at which an individual values their own leisure time.

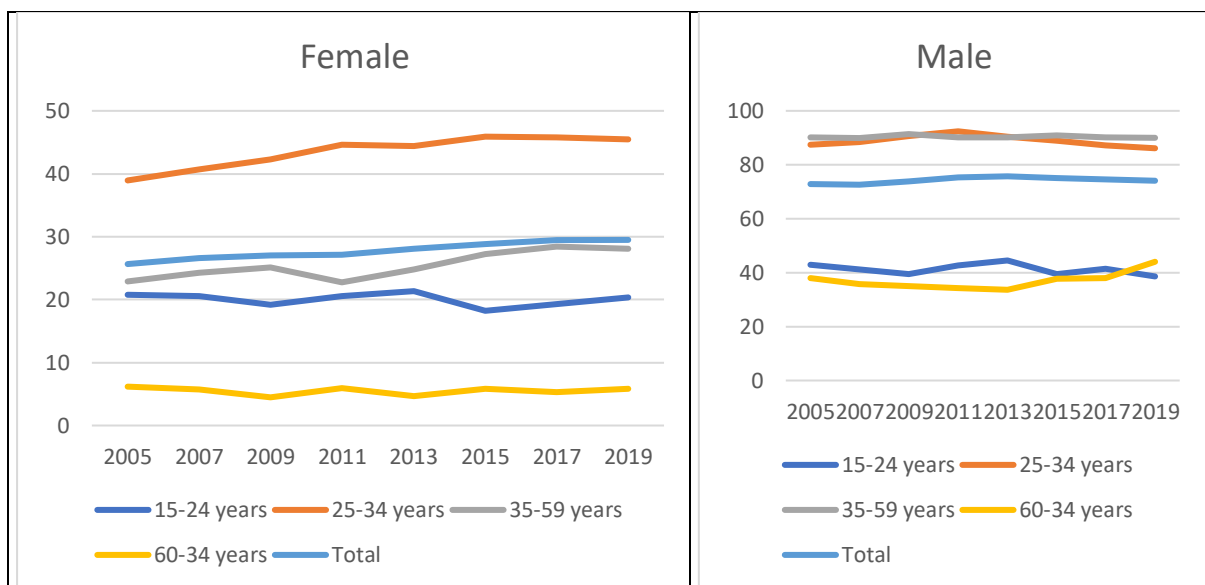
How much Tunisian women participate in the labor market also varies by where they live. While overall FLFP is low, it is even more so in the country's interior. In 2019, only 18.5 percent of women in the Central-Western region worked outside the home, compared to 36.6 percent in Grand Tunis. Average FLFP does not exceed 22 percent in other interior areas (South and North-West) where, again, social norms and lack of economic opportunities discourage women from actively seeking jobs in the labor market.

Figure 16: Labor force participation rate by education and gender



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Figure 17: Labor force participation rate by age

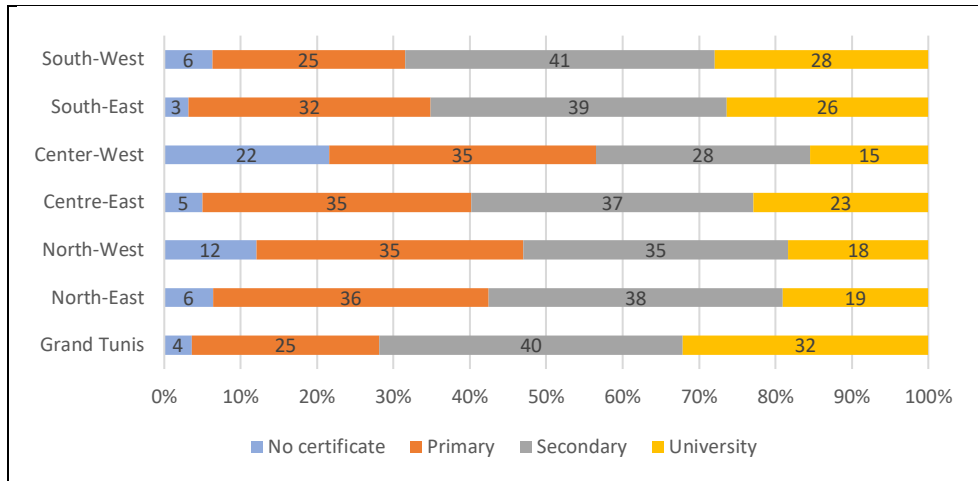


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Another outstanding feature in Tunisia is how much the educational composition of the labor force varies across regions. In 2019, nearly 57 percent of the labor force in the Center-West and almost 47 percent in the North-West had an education level less than secondary, unlike in Grand Tunis where

this same population does not exceed 29 percent (Figure 18). Employment policies and the allocation of public and private investments in these regions must take into account the labor force skills available.

Figure 18: Composition of the LF by region in 2019.

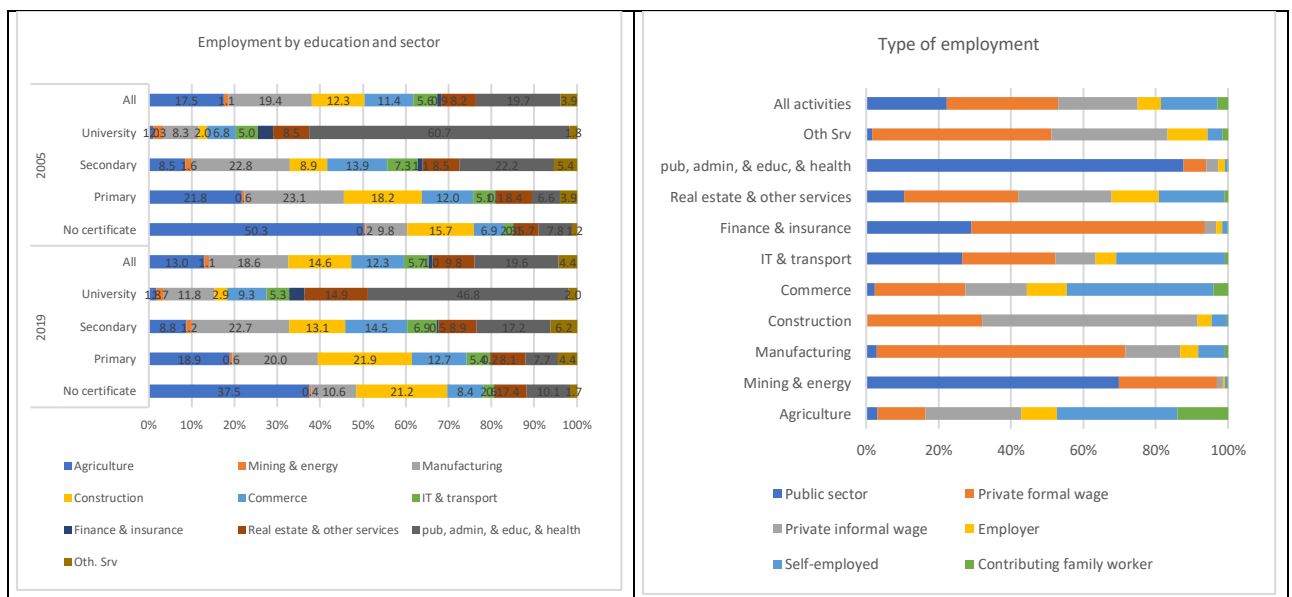


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

The share of employment by sector and educational status varies considerably, and changed very slowly between 2005 and 2019. Employment by sector and with respect to educational status of workers has changed slowly. Nationally, employment in agriculture declined from 17.5 percent in 2005 to 13 percent in 2019 (Figure 19). In terms of educational status, low-skilled workers with no certificate or primary education are employed in agriculture and construction, with no significant changes between 2005 and 2019.

Figure 19: Distribution of employment by sector, education level (2005 vs 2019)

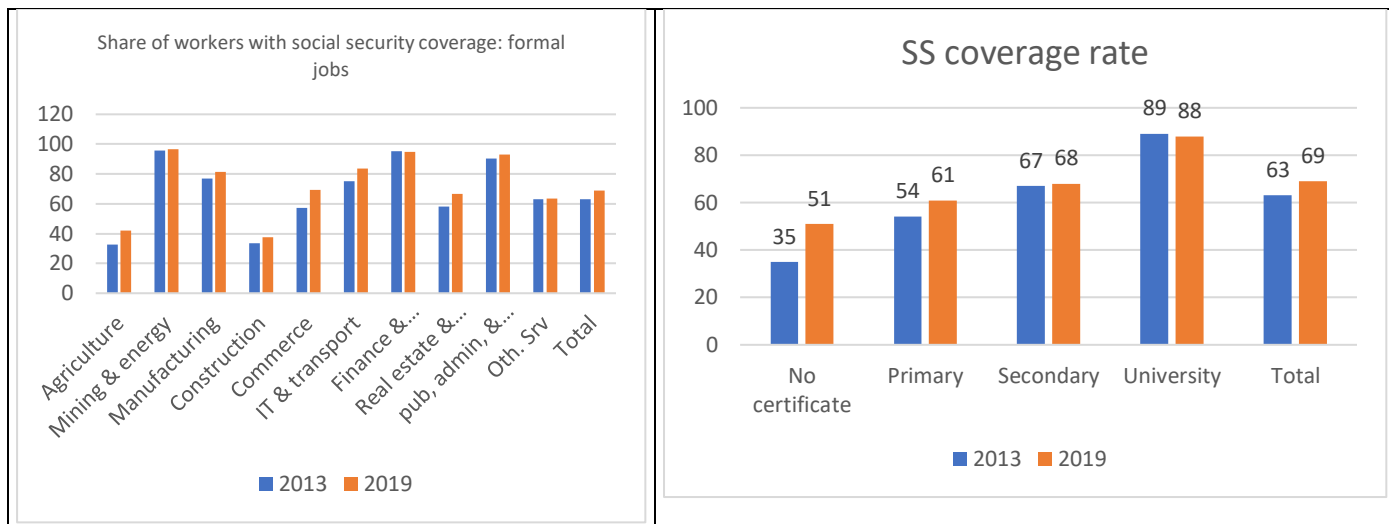
Figure 20: Distribution of Employment, by type of employment, 2019



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

The low share of formal jobs in agriculture and construction —the largest employers of the poorest and lowest educated—is persistent. In 2019, the share of formal workers (those with access to social security coverage) was lower in sectors that employ large numbers of the working poor, such as agriculture (42 percent) and construction (38 percent), compared to other sectors in which the share of formal jobs was at least 50 percent (Figure 21). The share of formality did not change much between 2013 and 2019. Not surprisingly, those less educated or skilled tend to have lower access to social security coverage in contrast to those with at least secondary level education.

Figure 21: Share of formal jobs, by sector and education

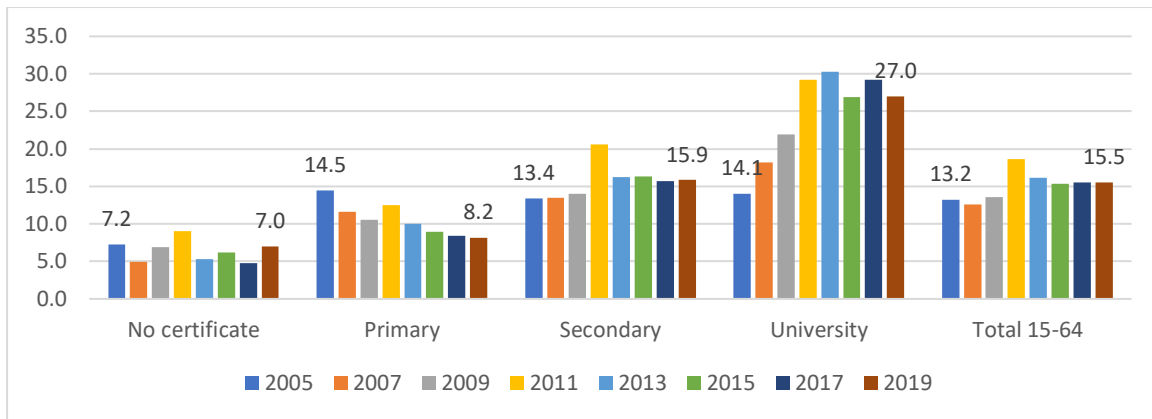


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

4. Unemployment: Profiles and Trends

Due to insufficient job creation, the unemployment rate has remained at a fairly high 15 percent (Figure 22). The 2011 peak in unemployment corresponds to that year of dramatic political change. As described, the Tunisian economy struggles to absorb the unemployed. Examination by level of education shows the deterioration in terms of higher unemployment for the highly educated, in line with our discussion about the difficulties graduates face finding work. It is important to note that while discussions often focus on unemployed higher education graduates, groups with lower levels of education should not remain unattended. About half of the unemployed have primary or secondary education. Effective intermediation and insertion programs are needed to cope with the growing supply of labor across all education levels in Tunisia.

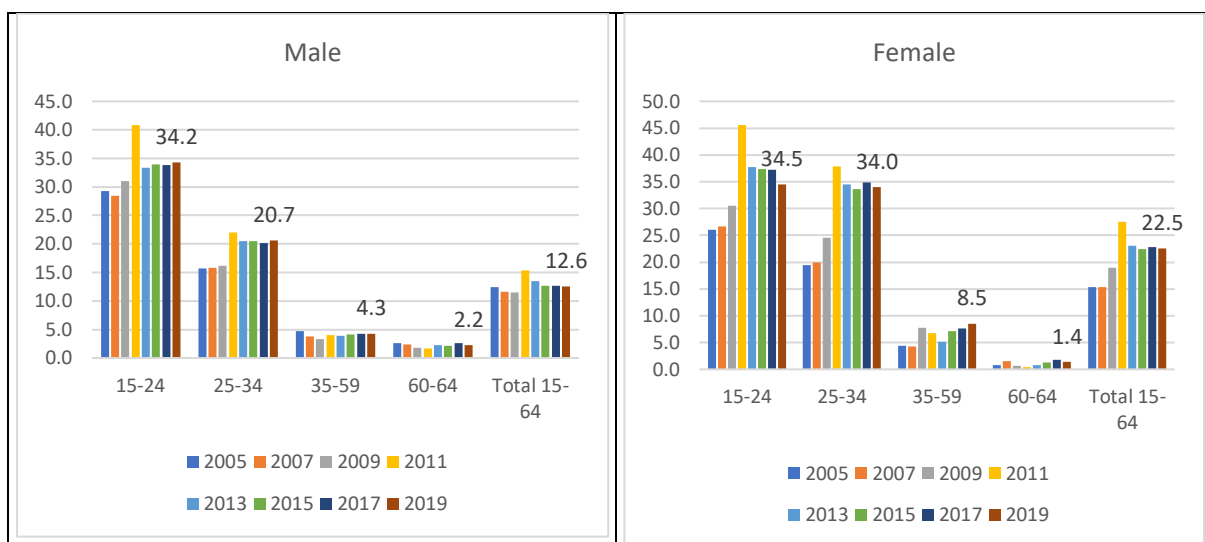
Figure 22: Unemployment rate, by educational attainment



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Unemployment mainly afflicts women and young people. Unemployment rates for women and youth under age 24 are rising (Figure 23). The unemployment rate for women was about 22.5 percent compared with 12.6 percent for men. Nearly one in three young people were unemployed in 2019, revealing a serious problem in terms of the economy's ability to absorb them. The unemployment rate was significantly lower for those aged 35 and above, oscillating around 5 percent. However, low unemployment rates could also conceal underemployment among young people who accept jobs from a certain age, regardless of their quality. El Lahga et al. (2016) studied inequitable access to employment opportunities for youth, reporting that 83 percent say "knowing people in high positions is critical to getting a job. In other words, using informal networks is a culturally acceptable practice."

Figure 23: Unemployment rate, by gender and age

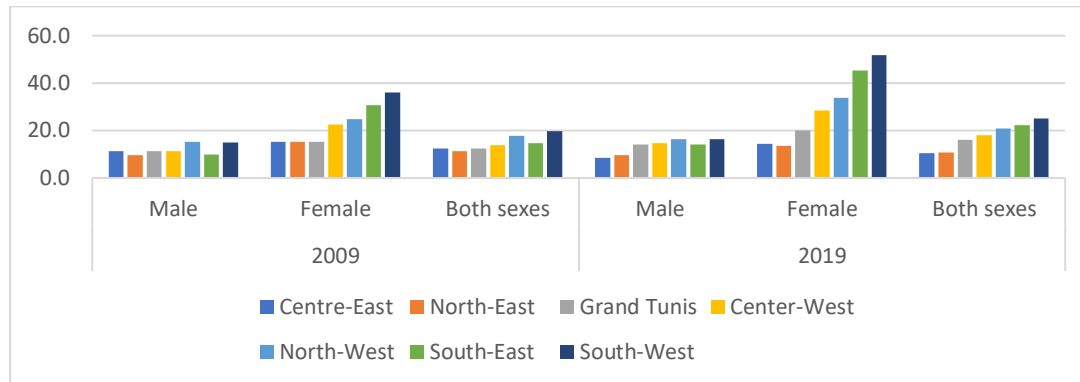


Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

Disparities in spatial unemployment between Tunisia's Eastern and Western regions persist (Figure 24). The poorest Western regions suffers a higher unemployment rate, a pattern that has not changed

over the last decade. These labor market patterns represent a main drive for internal migration from the interior to coastal regions where economic activities concentrate. According to the National Institute of Statistics (INS), 60 percent of migrants move mainly to search for work, followed by 20 percent who are pursuing studies, and another 10 percent move due to marriage. Migration increases the pressure on the labor market in coastal regions, particularly in urban areas.

Figure 24: Unemployment rate by region



Source: Authors' calculation, based on data from the Tunisian Institute of Competitiveness and Quantitative Studies (ITCEQ).

5. Conclusions and Policy Implications

The analysis in this paper shows that even ten years after the revolution, Tunisia's main and pressing challenge is how to create good jobs in sufficient quantity and quality. The analysis also comprehensively sheds light on both demand-side and supply-side constraints which explain the poor labor market performance. Tunisia was one of a few countries that experienced a very difficult decade, characterized by a dramatic political transition and a health crisis that contributed to the country's economic problems and poor labor market outcomes.

First, on the demand side, the inability of the Tunisian economy to absorb additional labor supply leads to continuous increase in unemployment. The country has failed to transform the structure of its economy and reallocate resources to the most productive activities. Our analyses show that the majority of jobs created are in the least productive sectors.

Moreover, limited employment opportunities vary considerably across Tunisia's regions and by population groups. Tunisians in the eastern part of the country face significantly fewer work opportunities than in the western parts. Meanwhile, young graduates particularly struggle to find opportunities commensurate with their qualifications. This group continues to exert demographic pressures on the labor market and is increasingly expressing dissatisfaction even since the Arab Revolution.

On the labor supply side, one major problem emerges in Tunisia: the low labor force participation rate, especially among women. The female labor force participation in Tunisia is estimated at 29 percent, which remains among the lowest in the world. These results suggest that the Tunisian

economy is far from taking full advantage of its abundant human resources. Effective policy design is crucial to incentivize women to enter the labor market.

Clearly, these results have several policy implications. Tunisia requires to urgently focus on accelerating structural transformation by improving business environment conditions, increase the quality of jobs and encourage formalization, help connect women to the labor market, particularly in higher-productivity jobs, and support youth in their transition from education to the labor market.

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