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# Addressing youth unemployment through industries without smokestacks

## A Tunisia case study

**Sami Mouley and Amal Nagah Elbeshbishi**



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## Abstract

Although the manufacturing sector is known to have a unique role in structural transformation, the industries without smokestacks (IWOSS) that include tradable services, and that concern in Tunisia mainly IT, tourism, transport, trade, and financial services, can provide new opportunities for export development and in turn drive economic growth. As such, and for each of these sectors, Tunisia is particularly well positioned to exploit the opportunities in industries without smokestacks. This study takes the case of Tunisia and examines the current state and contribution of the industries without smokestacks to the economy and exports with the aim of improving our understanding of the major bottlenecks and solutions to unlocking the potential of these industries. The study gives special attention to the main market service activities cited above, given their great importance in job creation especially for youth. It aims particularly to analyze how youth unemployment can be solved through job creation in these IWOSS industries, as well as the identification of the skills required for these young people to find work.

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## Introduction: Problem statement

Although the manufacturing sector is known to play an important role in structural transformation, the potential of other sectors, such as natural resource-based activities and tradable services, to provide exports and drive growth must not be underestimated. More specifically, services that mimic manufacturing's ability to absorb low- and medium-skilled labor, are tradable, have relatively high value added per worker, exhibit the capacity for technological change and productivity growth, and show some evidence of scale and/or agglomeration economies—termed “industries without smokestacks” (IWOSS)—can provide new opportunities for export development, which can drive economic growth. In Tunisia, such sectors include ICT, tourism, transport, trade, and financial services. The development of these sectors can also provide significant opportunities to build new areas of comparative advantage, including in the manufacturing sector, through optimizing foreign exchange reserves, and improving logistic and infrastructure services. The growth in productivity of services is found to be closely linked with the productivity growth of the manufacturing sector and exports of manufacturing (Lee and McKibbin 2013).

Moreover, to date, the importance of the development of these sectors to the transformation of the Tunisian economy has received little attention—at least in the implementation and in the evaluation of the effectiveness of the reforms undertaken. The main objective of this study is, thus, to show the current state and contribution of these sectors to the Tunisian economy and exports, as well as to improve our understanding about the major bottlenecks and required solutions to unlock the potential of these sectors. This study can also serve as an input for policymakers when reviewing the existing strategies on these industries and their implementation. In this study, we assess the job creation potential of these industries, finding that there is great scope for IWOSS to be highly employment generating, and that policies supporting an environment conducive to their development could be effective in addressing youth unemployment challenge.

To do so, we will first present the conceptual issues of export diversification in structural transformation. Second, the study will present contextual elements of the growth pattern in Tunisia by analyzing the quality of growth and its dynamics of structural (sectoral) transformation, the impacts of growth on employment, the potential growth and employment and the effects on social inclusion. Third, an analysis will be carried out on the relative importance of IWOSS industries, in terms of contributions to value added, employment, and the balance of payments. The following section provides specific analyses of individual IWOSS sectors while detecting development constraints. After highlighting the issues and challenges of the IWOSS sectors, the last section puts forward some executive recommendations for a better involvement of the IWOSS sectors in the attempts to address youth unemployment in Tunisia.

# 1. Export diversification and structural transformation: Conceptual issues

Manufacturing has long been hailed as the main engine of structural transformation. The literature consists of various arguments in favor of this position, including that manufacturing is the main source of dynamic comparative advantage [Szirmai (2012) and Szirmai and Verspagen (2015)]. Manufacturing also offers higher-productivity activities, provides special opportunities for economies of scale and learning, generates and disseminates new technology, and stimulates cross-sector linkages. Diversification into manufacturing has, thus, been advocated as the primary goal of national development strategies of low-income countries.

A substantial part of the empirical literature provides evidence in support of the manufacturing sector as an engine of growth. Diversification into primary commodities and natural resources can have detrimental effects on countries' growth prospects- commonly referred to as the "resource curse." Although the unique role of manufacturing towards structural transformation cannot be denied, the "resource curse" view is not consistent with historical evidence demonstrated in several natural resource-rich OECD countries (e.g., Australia, Canada, Scandinavia, the United States) and non-OECD countries (e.g., Brazil, Chile, Uruguay). The experience in these countries shows that resource-based activities can lead growth over long periods and can be a source of knowledge and technological advancement (Lederman and Maloney 2002).

The economic structural transformation in Asia in the last half-century has been mainly driven by the growth of the manufacturing sector. Replication of this growth path in other developing countries, however, has remained challenging. This difficulty arises because, first, even with the low-wage advantage, many African countries' transition to manufacturing might be limited due to internal factors such as initial conditions (poor infrastructure, human capital, and institutions), geography (many small and/or landlocked countries), and richness in natural resources. Second, the windows of opportunity used by Asian countries are no longer available to newcomers: The global setting and industrial environment have significantly changed, altering the way enterprises and countries compete (Lall 2005).

According to Perez et al. (2014), the information and communication technology (ICT) revolution and its paradigm in the organization of global corporations, the process of globalization of production and hyper-segmentation of markets, the rise of Asia (notably China and India), as well as the threat of global warming and other environmental concerns have profoundly modified the conditions (innovation and trade) in all sectors. These transformations have radically changed the capacity to innovate in natural resource-based activities and driven them towards "decommoditization." In contrast, the mature manufactures, which depend on highly codified technologies and low-cost labor, are suffering from a process of "commoditization" and have been shown to be as vulnerable to downturns as the lower echelons of primary producers, and as being just as likely to suffer decreasing margins (Kaplinsky 1993).

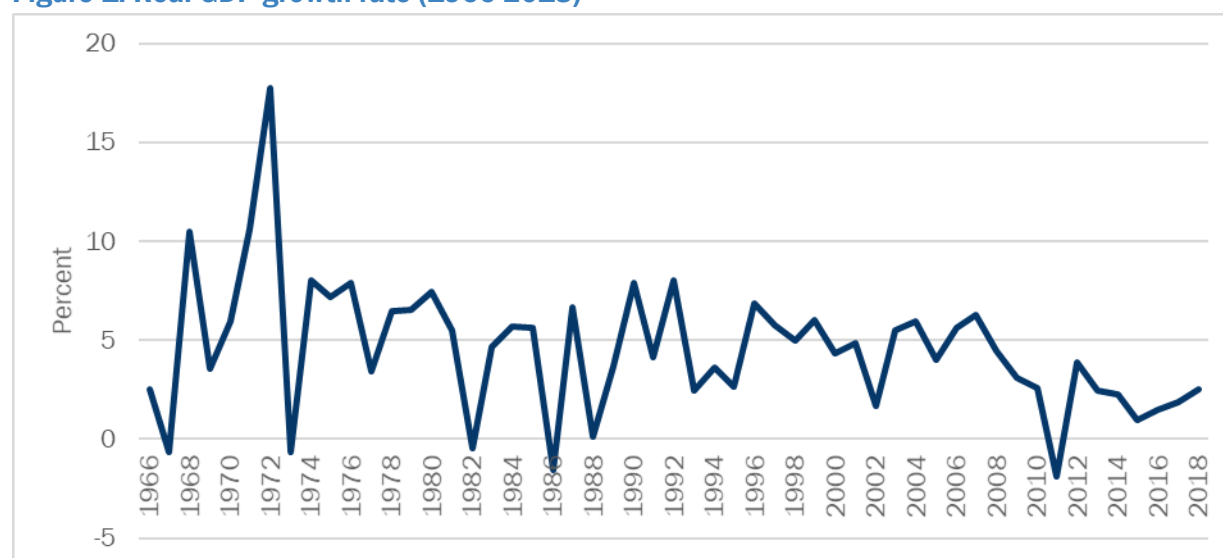
Our intention here is not to give a gloomy picture of the potential of the manufacturing sector in Africa but provide a rationale to look beyond conventional "smokestacks" manufacturing to achieve industrial transformation. If managed properly, industries without smokestacks can provide new opportunities for export development in Africa and help build new areas of comparative advantage, including the manufacturing sector. It is in this context that some scholars (for example, Pack and Saggi 2006; Rodrik 2007) have provided a broader definition of industrial policy as government selective interventions or policies that stimulate specific economic activities and promote structural change. This definition thus includes not only industry per se, but also non-traditional agriculture or services.



## 2. Contextual elements of the growth pattern in Tunisia

In addition to the exceptional real growth rates observed for the 1960s and 1970s, the Tunisian economy achieved an average annual growth rate in terms of real GDP of around 4.8 percent during the decades 1990-2000 and 2000-2010, with a fairly low volatility of 1.7 percent (Figure 1). This performance resulted, to a large extent, from some positive shocks, including, in particular, the signing of the association agreement with the European Union (EU) in 1995. Due to the synchronization of business cycles with its main trading partners, notably EU countries, Tunisia suffered the consequences of the global financial crisis from 2009, although the 3 percent growth rate reached in 2010 suggests that external shocks were more or less absorbed.

**Figure 1: Real GDP growth rate (1966-2018)**



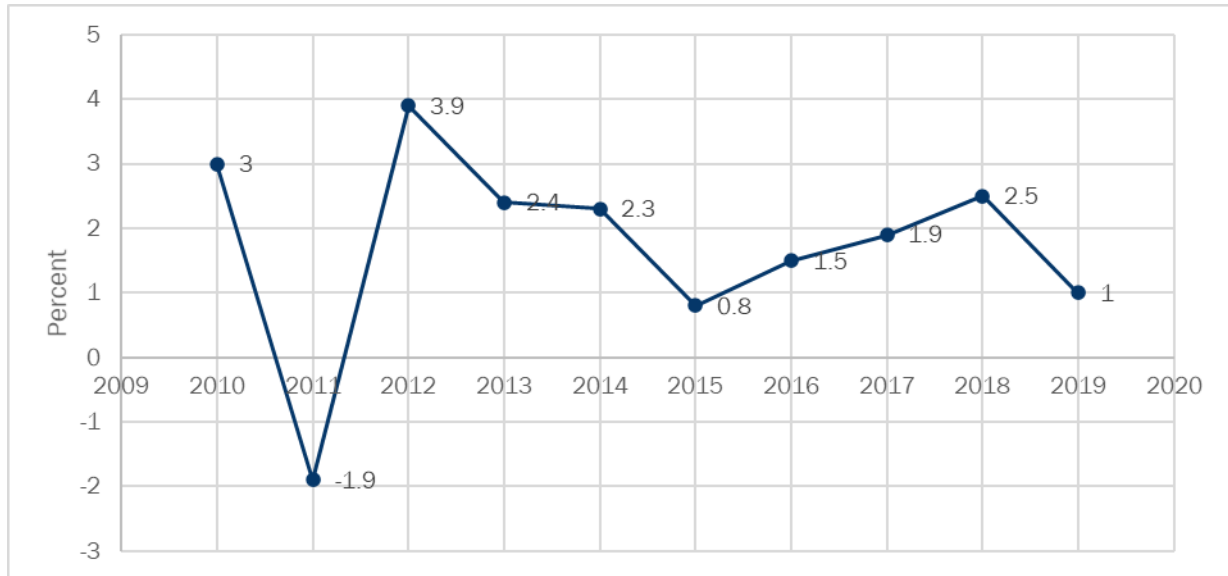
Source: Based on data from the World Development Indicators.

From the start of the transition phase, following the political events in 2011, the growth dynamic became more problematic. The effects of the internal crisis indeed led in 2011 to an unprecedented recession with a negative growth rate of -1.9 percent. Although a slight transient recovery in economic activity has started since 2012, the growth dynamic experienced higher volatility (2.4 percent) and continued to run out of steam at an average annual rate of around 2 percent over the period 2012-2019, far below the long trend of the past 20 years. This recent trend is due to the uncertainties linked to the social and security context under the political transition, coupled with other latent structural weaknesses in the pattern of economic growth (Figure 2).

In addition, a comparison of Tunisia to countries at the same level of GDP per capita in 1960 (Malaysia, South Korea, Thailand, Indonesia), shows, overall, that although economic growth in Tunisia was relatively supported during the period 1990-2010, there was no catching up of the GDP per capita compared to emerging comparators. These differences are illustrated in the following figures according to the Geary Khamis method in terms of PPP (Figure 3) or in terms of the EKS method in 2015 constant dollars (Figure 4).

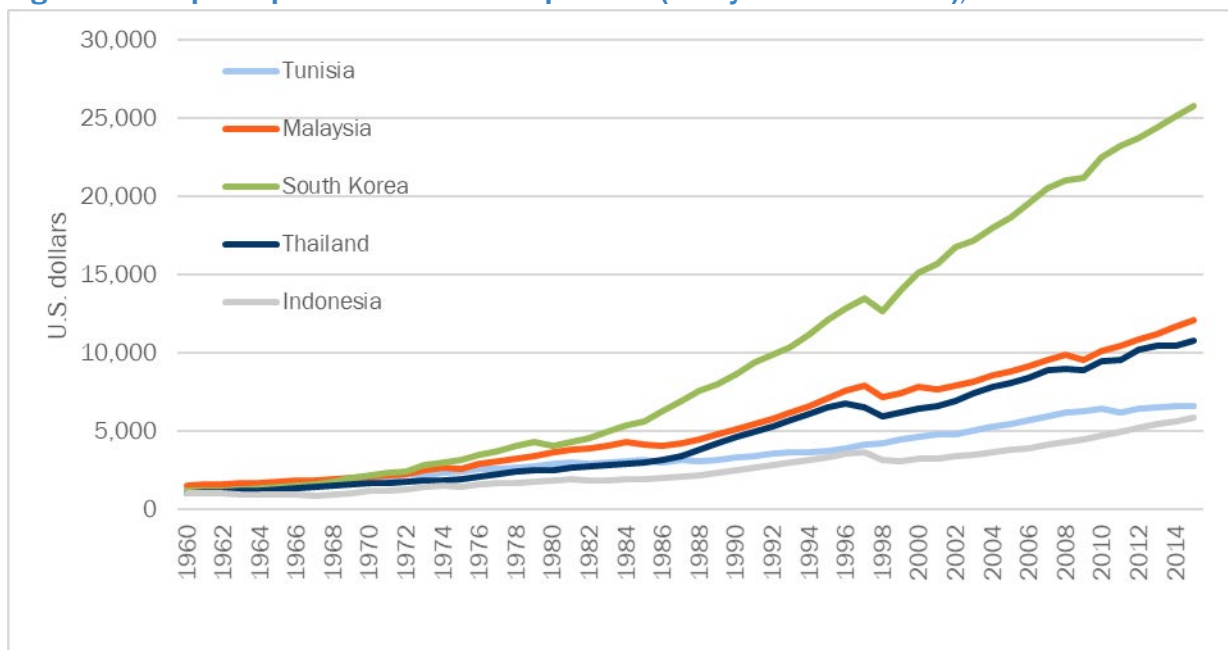


**Figure 2: Real GDP growth rate (2011-2019)**



Source: Based on data from the Central Bank of Tunisia.

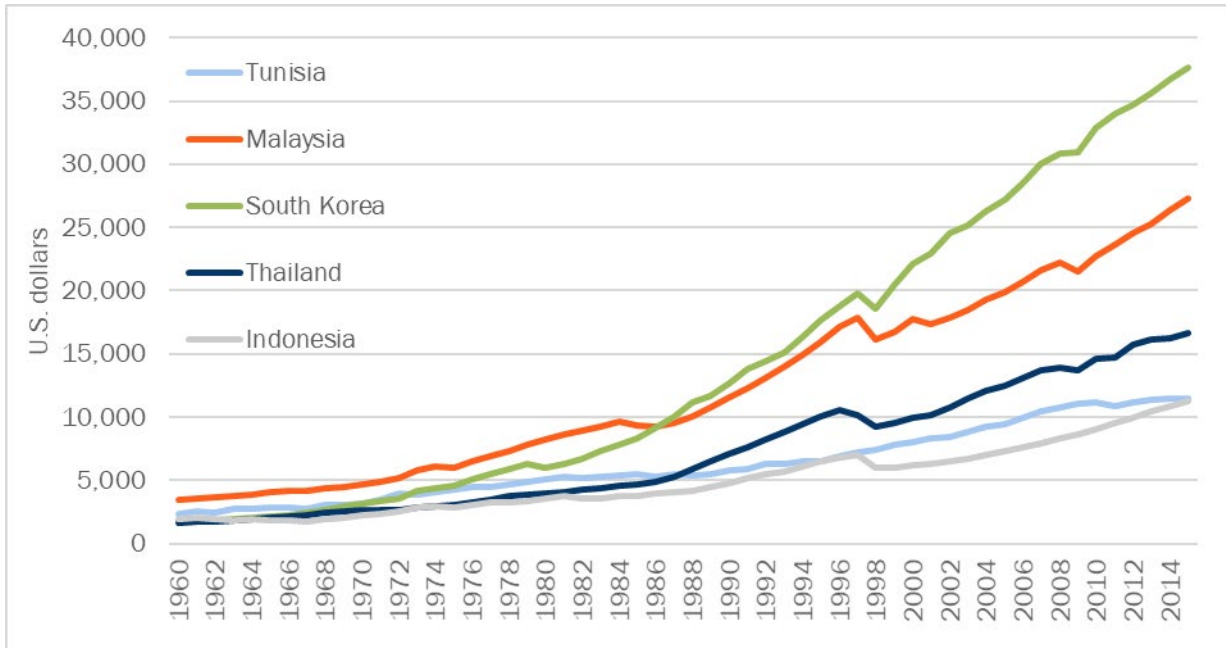
**Figure 3: GDP per capita: Tunisia and comparators (Geary Khamis method), constant USD**



Note: GDP per capita in 1990 USD (converted at Geary Khamis PPPs).

Source: Based on data from Total Economy Database™, The Conference Board.

**Figure 4: GDP per capita: Tunisia and comparators (EKS method), constant USD**

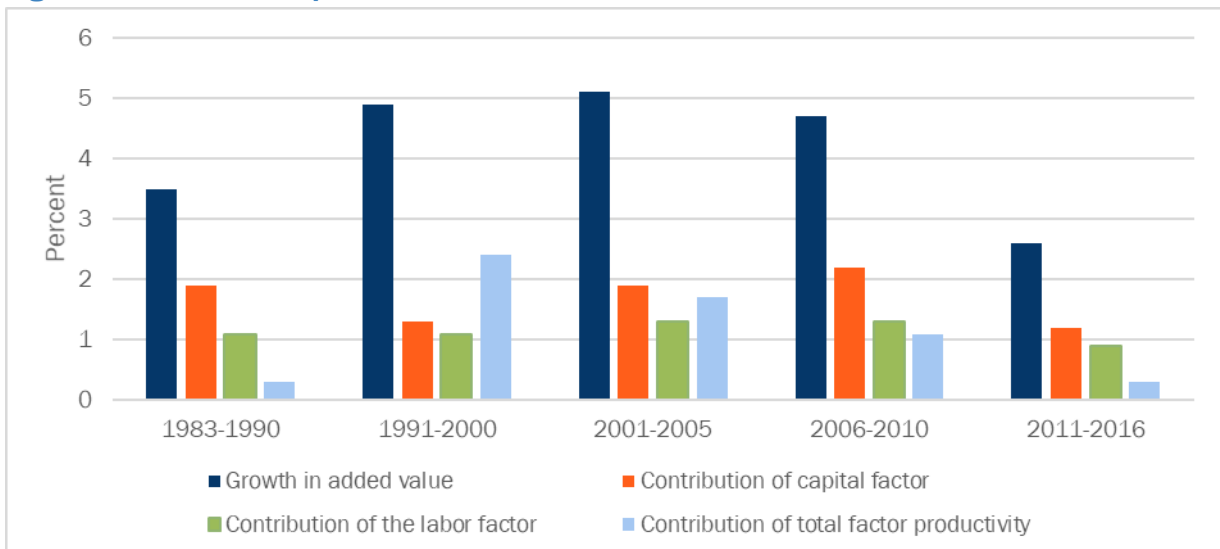


Note: GDP per capita EKS in 2015 USD (converted to 2015 price level with updated 2011 PPPs).  
 Source: Based on data from Total Economy Database™, The Conference Board.

## 2.1 Quality of growth and its dynamic of structural transformation

Analysis of the dominant features of the production function over recent decades reveals that the growth pattern has gradually taken two divergent paths, from growth with accumulation of human and physical capital to growth driven by the capital factor and, to a lesser degree, by total factor productivity (TFP). Indeed, and as illustrated in Figure 5 below, the contribution of the labor factor to growth has gradually been offset by the accumulation of capital, which has become the main driver of the contribution of the factors of production to growth and was partly driven by foreign direct investment (FDI).

**Figure 5: Growth decomposition of value-added**

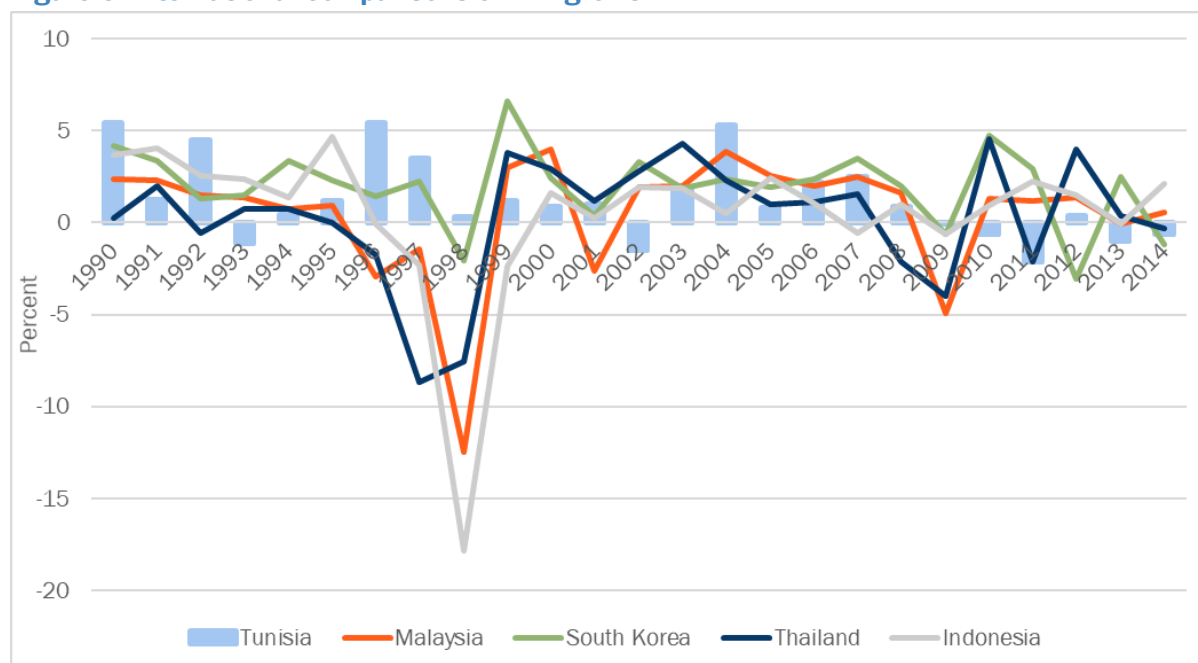


Source: Calculations based on data from the Tunisian Institute for Competitiveness and Quantitative Studies.

However, despite accelerations in the contribution of the capital factor to growth, the trend in productivity growth remained weaker than that of growth in the labor factor, which had a negative

impact the evolution of TFP. Overall, the evolution of TFP, estimated by the Tornqvist index, shows that the productivity gains achieved by the Tunisian economy have remained low on average compared to countries with rapid growth (Figure 6). These gains have notably declined sharply since 2008. As a result, structural changes and an allocation of resources to the most productive sectors remain limited, which explains the weak capacity of the Tunisian economy to create new jobs, sufficient and of good quality, with a situation that deteriorated after the political upheaval in 2011.

**Figure 6: International comparisons of TFP growth**



Note: Growth of Total Factor Productivity - Estimated as a Tornqvist Index.

Source: Calculations based on data from Total Economy Database™, The Conference Board.

The slowdown in growth is also due to delays in structural transformation. These delays were mainly due to shortfalls in the reallocation of intra and intersectoral resources, particularly to high productivity sectors. To this end, the IMF analysis (2016) and Dabla-Norris et al. (2013), relating to the decomposition of TFP growth into an intra-sector component (within sector component) and a structural transformation component (structural shift or structural change), which represents the intersectoral reallocation of resources, show that despite the trend of change in employment and value added to the IWOSS sectors, at the expense of agriculture and non-manufacturing industries, the contribution of structural change to growth was weak during the 2000-2010 period, with a biased allocation of resources to slower growth sectors.

## 2.2. Impacts of growth on employment

The moderate profile of economic growth before 2011 resulted in the persistence of a relatively high unemployment rate of the working-age population, which includes those 15 years of age and above, (14.8 percent in 2010), coupled with an even higher unemployment rate among young people, who are those between ages 15 and 29, (around 26.7 percent in 2010). This situation subsequently continued during the transition period, as overall unemployment rose from 18.3 percent in 2011 to 15.5 percent in 2018, corresponding to around 645,000 job seekers, coupled with a high unemployment rate for young people which rose to 33.2 percent in 2018, even though population growth was moderate.

Youth unemployment particularly concerns young graduates of higher education, rising from 30.7 percent in 2010, to 30.9 percent in 2011 and 28.8 percent in 2018. This unemployment is more

than four times higher than the average of OECD countries. In particular, according to the national (quarterly) surveys on population and employment conducted by the national statistics institute (INS), the current unemployment of young graduates also hides significant regional disparities (28.6 percent in the center-west, 26.9 percent in the southwest, 24.8 percent in the southeast and 11.1 percent in the center-east) and gender disparities (22.9 percent for women against 12.5 percent for men, among first-time applicants employment).

In application of the international definition adopted in 1982 by the International Labor Organization (ILO), an unemployed person is a person of working age (15 or over) who meets three conditions simultaneously : (i) being without employment, meaning having not worked for at least one hour during the reference week ; (ii) being available to take up employment within two weeks ; (iii) having actively looked for a job in the previous month or having found one starting within the next three months. In general, the growth pattern in Tunisia remains weak in job creation, both during the previous period (Table 1) and during the transition period from 2011 (Table 2).

Indeed, during the 2006-2010 period, the average elasticity of employment with respect to growth<sup>1</sup> was around 0.53 for an average annual additional job creation capacity of around 69,780 against an average of 90,000 additional first-time job seekers per year<sup>2</sup> (including 80,000 new graduates from higher education per year). In particular, job creation was subject to a downward fluctuation in 2009, as a result of slower growth as a result of the effects of the global financial crisis.

**Table 1: Employment elasticities - growth (Total economy: 2006-2010)**

	Employed labor force (15 years and above)	Additional job creation	Unemployment rate (in %)	Average annual growth rate (in %)		Employment elasticity / Growth
				Employment	Value-added (a)	
2006	3,004,900	76,400	12.5	2.60	5.50	0.47
2007	3,085,100	80,200	12.4	2.67	6.30	0.42
2008	3,155,400	70,300	12.4	2.27	4.50	0.51
2009	3,198,900	43,500	13.3	1.38	3.10	0.45
2010	3,277,400	78,500	13.0	2.45	3.00	0.81
Average 2006-2010						0.53

Note: (a) At the prices of the previous year (annual change in %).

Source: Mouley, S. (2014, 2018).

The transition phase from 2011 was not accompanied by an improvement in the capacity of the growth scheme to create jobs, with an unemployment rate which clearly deteriorated from 13 percent in 2010 to 15.5 percent in 2018. After an exceptional phase of job destruction in 2011 (-137,600) associated with the recession, the gradual recovery of activity remained characterized by even more persistent differences between supply and demand.

In addition, apart from 2011, the 2012-2014 period was in fact characterized by massive recruitments in the public administration following an amnesty declared at the time which tended to bias the data on the creation artificially inflated from employment. Excluding this period, the average elasticity of employment with respect to growth between 2015 and 2018 improved only slightly, going from 0.53 on average during the previous period to 0.61 on average during the

1 The elasticity of employment with respect to growth (how many more employment points for one more GDP growth point) is calculated by the ratio between the rate of employment growth (measured by the rate variation in the employed labor force) and the growth rate of value added (constant prices).

2 Several studies have shown that growth of 1 percent of GDP for two consecutive years can only increase employment by 0.3 percent per year.

period 2015-2018, but with a capacity for additional average annual job creation of around 32,050 compared to 69,780 previously (Table 2). This underperformance comes at a time when the labor force (including graduates of higher education) additional first-time job seekers increased by 6.8 percent, going from 3,277,400 in 2010 to 3,501,900 in 2018.

**Table 2: Employment elasticities: growth (total economy, 2011-2018)**

	Employed labor force (15 years and above)	Additional job creation	Unemployment rate (in %)	Average annual growth rate (in %)		Employment elasticity / growth
				Employment	Added value (a)	
2011	3,139,800	-137,600	18.30	-4.19	-1.90	Negative
2012	3,231,600	91,800	17.60	2.92	3.90	0.75
2013	3,300,100	68,500	15.90	2.12	2.40	0.88
2014	3,373,700	73,600	15.30	2.23	2.30	0.96
2015	3,396,000	22,300	15.40	0.66	0.80	0.82
2016	3,431,000	35,000	15.60	1.02	1.50	0.68
2017	3,474,300	43,300	15.50	1.26	1.90	0.66
2018	3,501,900	27,600 (b)	15.50	0.79	2.50	0.31
Average 2015-2018						0.61

Note: (a) At the prices of the previous year (annual change in %). (b) This net job creation represents only 4.3 percent of the total number of job seekers. The structure of additional annual net job creation by gender is not favorable for better inclusion of women. The unemployment rate for women is 18.5 percent compared to 12.5 percent for men.  
Source: Mouley, S. (2014, 2018).

### 2.3. Growth potential and employment

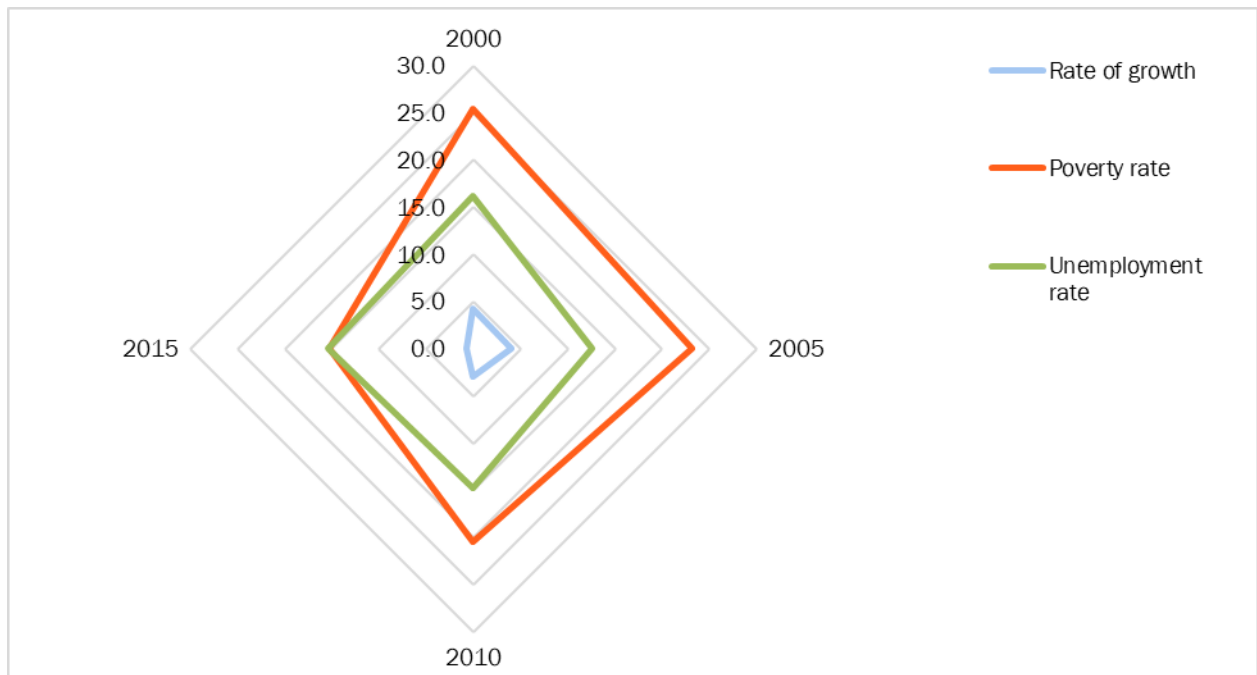
In addition to the previous findings, the slowdown in potential growth in Tunisia has had negative effects on job creation. While the average effective growth rate was only around 4.5 percent during the period 2000-2010, the potential growth rate did not exceed on average 5 percent. This analysis stems from a methodology for decomposing actual GDP growth at constant prices into a trend component (or long-term trend), measuring potential growth, and a cyclical component (expressing GDP fluctuations around this trend).

Excluding the transition year of 2011, characterized by a technical recession with a negative output gap, the transition period since 2012 has been marked by a drop in average potential growth due to the ineffectiveness of the structural reforms undertaken in Tunisia. Within the framework of programs, stand-by and extended credit facility, which the Tunisian authorities have used, the IMF (2016) established a scenario of no reforms based on a growth accounting exercise, with the objective of only to cover or converge the contribution of the factors of production (capital and labor) as well as TFP to their 2010 trends. This scenario could have led to a gradual increase in effective growth to an average of 3.1 percent during the 2016-2019 period, far below its potential. On the other hand, a simulation scenario of the reforms to be undertaken would have led to an increase in potential growth by 1.5 percent. Not only, average effective growth was only around 1.7 percent during this period, but in addition, potential growth is currently estimated at only 2.5 percent, much lower to that of the past period.

### 2.4. Growth and social inclusion

The low growth has only resulted in a slight improvement in the ability of the population to participate in growth and their ability to benefit from it, essential pillars of growth with high social inclusion. Unemployment thus came with its share of poverty (Figure 7).

**Figure 7: Changes in growth, unemployment, and poverty rates in Tunisia (in %)**



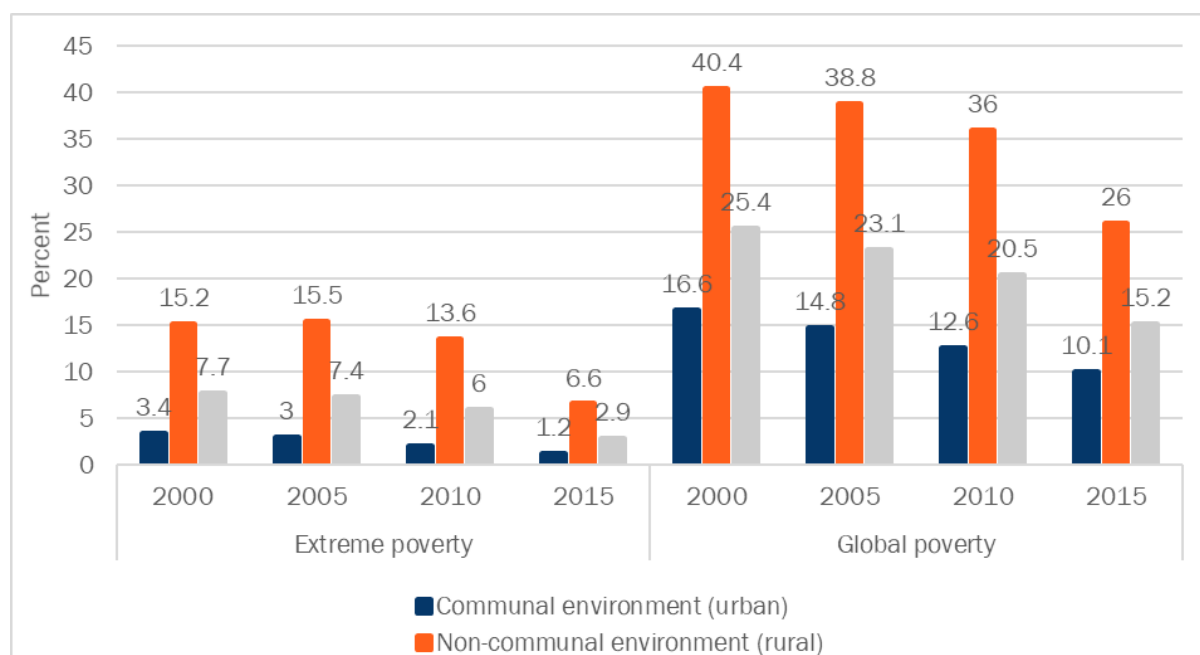
Source: From National Statistics Institute (INS) data.

In 2012 and again in 2016, the National Statistics Institute revised the methodology for calculating monetary poverty rates based on surveys on a household's budget, consumption, and living standards, rather than on incomes, which tend to be artificially inflated as a result of social transfers.<sup>3</sup> Revisions to the calculations of the poverty and extreme poverty data further confirm economic and social exclusion, particularly of people in the interior regions of the country. According to the results of the latest INS 2016 survey, poverty rates have decreased: The poverty rate fell from 25.4 percent in 2000 to 15.2 percent in 2015. Extreme poverty fell from 7.7 percent in 2000 to 2.9 percent in 2015. However, poverty rates remain higher in non-municipal areas (Figure 8).

Beyond the trends in monetary poverty, the multidimensional poverty index (MPI), based on multiple deprivation thresholds, shows that, in Tunisia, access to education is still the main source of deprivation for people suffering from multiple poverty (48 percent), compared with 26 percent for health and 26 percent for living conditions. The MPI is an index composed of 10 indicators (with deprivation thresholds) forming three dimensions: (i) education, (ii) health, and (iii) standard of living. The cumulative number of deprivations acts on the value of this index and consequently on the degree of deprivation of a household (Alkire, S., Conconi, A., Robles, G. and Seth, S. 2015).

<sup>3</sup> In addition, a back casting of the 2015 data was carried out on those of 2010, because the 2010 household survey is reduced to a sample of 13,500 households chosen only at the level of large regions, while the 2015 household survey widened the sample at 27,000 and especially at the level of the governorates.

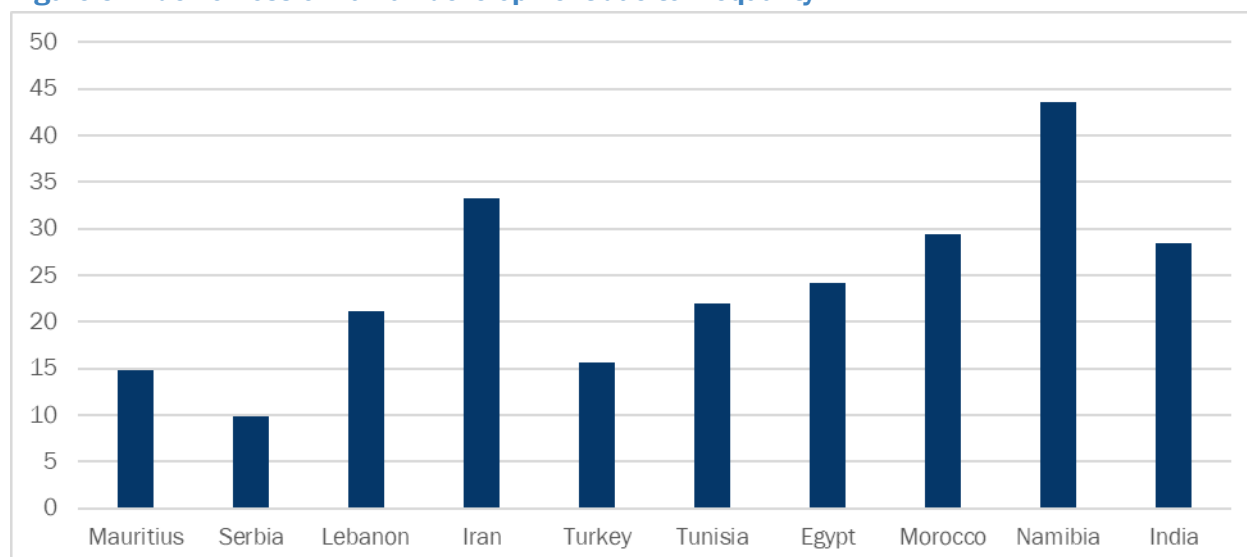
**Figure 8: Poverty and extreme poverty rates in Tunisia, 2000-2015**



Source: From National Statistics Institute (INS) data.

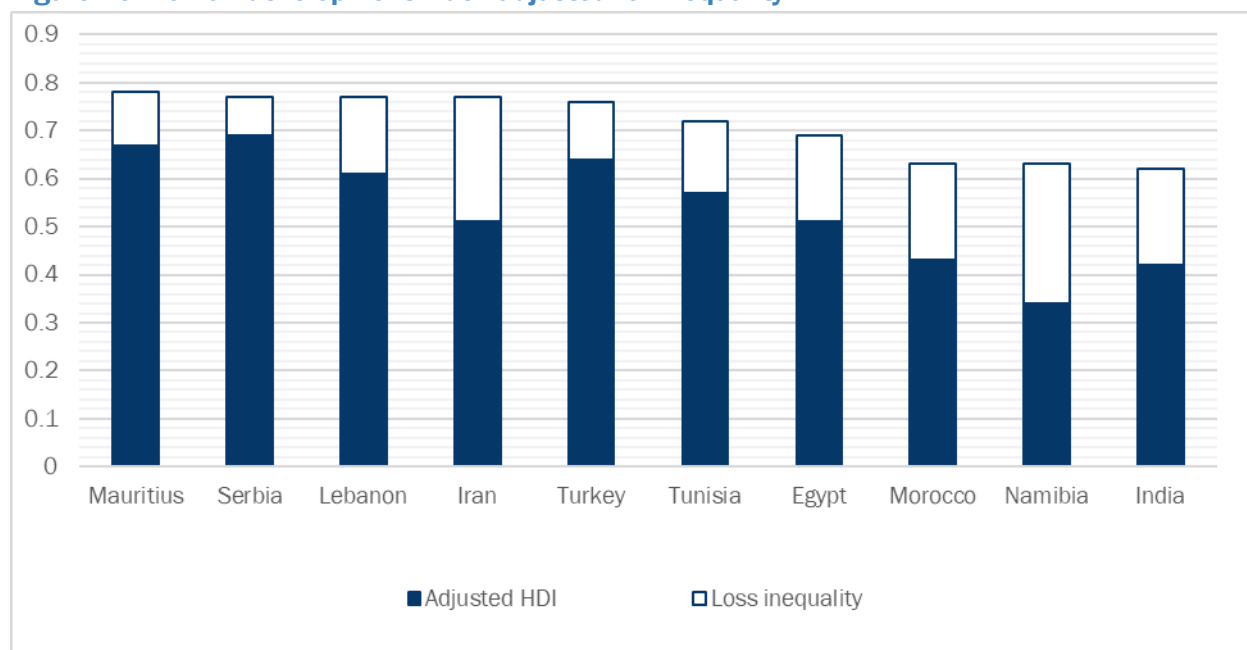
Thus, in terms of the Human Development Index (HDI), the performances recorded by Tunisia still reflect inequalities between geographic regions and social groups. Considering the World Bank’s Adjusted Inequalities Human Development Index (Adjusted HDI), inequalities cause losses in human development as shown in Figure 9. The comparative evolution of the Adjusted HDI shows that the shares of human development losses at the level of the HDI in Tunisia are higher than those of other countries (Figure 10). The Adjusted HDI combines the average gains of a country in terms of health, education, and income, and the way in which these gains are distributed among a population by “reducing” the average value of each dimension according to its level of education.

**Figure 9: Index of loss of human development due to inequality**



Source: WDI, World Bank.



**Figure 10: Human development index adjusted for inequality**


Source: WDI, World Bank.

The primary culprit behind Tunisia's low Adjusted HDI scores is unequal access to education, particularly for women, rather than in income or access to health care. For example, the last General Census of Population and Housing (RGPH) conducted by the National Statistics Institute (INS) in 2014, shows that the rate of illiterate women, equal to 25.7 percent, is double that recorded for men, and it is more pronounced in non-municipal areas (where it is 32.7 percent).

In view of these characteristics, the Gallup World Poll has categorized Tunisia's economic development as "dissatisfied development," with a percentage of satisfied (thriving) of 4 percent in 2014, against 10.8 percent in 2013 and 14 percent in 2010. Tunisia is therefore among the countries where the feeling of well-being is lowest. Three arguments are advanced: (i) low or declining standards of living, (ii) difficult employment conditions and (iii) "crony capitalism."

**Table 3: Gallup World Poll rankings, % of respondents agreeing with the statement (2015)**

	Egypt (%)	Jordan (%)	Morocco (%)	Tunisia (%)	Transition regions (%)	Western Europe (%)
Economic situation good or excellent	34	29	34	13	22	34
Economic situation in the country improving	64	31	67	17	29	36
Economic situation in the area or city improving	39	38	42	21	32	35
Good time to find a job	34	35	19	21	25	34
Comfortable living on present income	14	8	20	17	17	36

Note: "Transition regions" are regions whose GDP per capita falls between 75 and 90 percent of the EU average. As such, they receive less funding than the less-developed regions but more funding than the more-developed regions.

Source: Gallup Healthways (2015).

Also, the regeneration of measures for accelerating the reduction of poverty and human inequalities, as well as for the creation of decent jobs, becomes more than essential (World Bank, 2019).

### 3. Analysis of the relative importance of the industries without smokestacks (IWOSS) in comparative perspective with non-IWOSS sectors

#### 3.1. At the level of contributions to added value

Since the early 1980s and until the transition period, the Tunisian economy has gradually shifted towards the market service sectors (IWOSS sectors: Industries Without Smokestacks), and to a lesser extent towards the manufacturing industries, at the expense of agriculture and non-manufacturing industries. This trend continued during the transition period, despite the weaknesses and uncertainties linked to the political and social context. In addition, since 2011 there has been an increase in the contribution of non-market services (public and administrative services) to growth. Indeed, the slight recovery in activity since 2012 was supported by a greater preponderance of public administration services in non-market activities, with an average of 18.3 percent compared to 16.5 percent in 2010, and a therefore contributed artificially to the growth dynamic. Indeed, in accordance with the evolution of the world economy, market services (IWOSS) are increasingly important in the Tunisian economy and represent a significant share of GDP (44.2 percent on average between 2015 and 2019), with a relatively high contribution from trade activities (9.95 percent), transport (7.38 percent), the tourism industry (assimilated to hotel and restaurant service) amounting to 4.38 percent, Information Technologies and ICT Communications (assimilated to post and telecommunications) up to 4.75 percent and financial services (4.73 percent).

In particular, the comparative analysis of the growth in value added by sector of activity during the transition period shows that, despite the downturn in the national economy in 2011, a certain resilience characterized the market services sectors (IWOSS sectors) that performed the best (Table 4). In particular, the growth in value added by activity sector indicates the relative importance of market service activities (IWOSS sectors) compared to that of other activities. This is particularly true for the significant growth in the added value of the tourism industry which has enabled the Tunisian economy to maintain its cap of resilience during the last period, followed by transport activities and financial services. The growth rates of value added in the IWOSS sectors were also reflected in their good contributions to overall growth (Table 5). These results show that despite the recession, the structure of GDP, which has evolved in the direction of an increase in the weight of high value-added sectors, has undoubtedly enabled the Tunisian economy to obtain better capacity for resistance and adaptation to structural shocks, including those inherent in the transition period.

The growth of market services sectors (IWOSS) and their contribution to value added was also consolidated in 2019, unlike the value added of manufacturing industries which recorded a decline of 0.7 percent in 2019, against an increase of 1.1 percent the previous year. This change is explained mainly by the contraction of the activity of the mechanical and electrical industries (-1.5 percent against an increase of the same amount a year earlier) and that of textiles, clothing and leather (-3 percent against 1, 5 percent), in connection with the contraction in demand from the Euro Zone, as well as the marked slowdown in the growth of the agri-food industries (0.6 percent against 4 percent) due to the sharp drop in oil production olive. The chemical industries experienced a recovery (3.4 percent against -3 percent) correlated with the improvement in national production of crude phosphate. For their part, non-manufacturing industries continued to contract, by 1.8 percent during 2019 against -1.7 percent last year, in connection with the decline in hydrocarbon production. On the other hand, the added value of the agriculture and fishing sector

recorded a slight increase of 0.8 percent in 2019, against 11.3 percent a year earlier, following the drop-in olive production.

**Table 4: Growth in added values by activity sectors at prices of the previous year (annual change in %)**

	2016	2017	2018	2019
Agriculture and fishing	-8.5	2.0	11.3	0.8
Manufacturing industries (a)	0.5	0.5	1.1	-0.7
Non-manufacturing industries	-1.5	-3.4	-1.7	-1.8
Market service activities (IWOSS sectors)	3.3	4.5	3.2	2.2
Including:				
<i>Tourism</i>	2.7	8.3	8.3	6.8
<i>Trade</i>	2.1	1.0	1.0	1.1
<i>Transport</i>	4.7	7.1	3.2	-2.4
<i>Post and telecommunications</i>	3.7	1.1	3.1	3.7
<i>Financial services</i>	5.1	14.0	4.9	4.6
Non-market service activities (non-IWOSS sectors)	2.5	0.7	0.4	1.0
GDP at market prices	1.5	1.9	2.7	1.0

Note: (a) Including the mechanical and electrical industry, the building materials industry, the textile and clothing industry, the chemical industry, and the agriculture and food industry. For the latter, besides the agro-industrial branch, the extent of knowledge about the horticultural branch, as an industry without smokestacks, is however very limited.

Source: Based on data from the National Institute of Statistics (INS) and the Central Bank of Tunisia.

**Table 5: Sectoral contributions to economic growth (in percentage points)**

	2016	2017	2018	2019
Agriculture and fishing	-0.9	0.2	1.1	0.1
Manufacturing industries	0.1	0.1	0.2	-0.1
Non-manufacturing industries	-0.1	-0.3	-0.1	-0.1
Market service activities (IWOSS sectors)	1.3	1.8	1.3	0.9
Including:				
<i>Tourism</i>	0.1	0.3	0.3	0.3
<i>Trade</i>	0.2	0.1	0.1	0.1
<i>Transport</i>	0.3	0.5	0.2	-0.2
<i>Post and telecommunications</i>	0.2	0.0	0.1	0.1
<i>Financial services</i>	0.2	0.6	0.2	0.2
Non-market service activities (non-IWOSS sectors)	0.5	0.1	0.1	0.2
GDP at market prices	1.5	1.9	2.7	1.0

Source: Based on data from the National Institute of Statistics (INS) and the Central Bank of Tunisia.

At the same time, most of the market service activities not taken into account in this breakdown operate in informal mode. According to the World Bank, the proliferation of informal activities in the post-transition period represents in Tunisia nearly 40 percent of GDP and 53.5 percent of the workforce. No specific measures have been taken on this subject by the various transitional governments. However, these are activities which pose several problems due in particular to the shortfall in terms of tax revenue, on the one hand, and working conditions, as well as the absence of any social protection system for workers, on the other hand. Certain sectors of activity affected by this phenomenon, such as the craft industry, services linked to agriculture or even certain trades in trade present, moreover, an interesting potential in terms of job creation by structuring them.

Due to the COVID-19 pandemic, in 2020, Tunisia experienced a contraction in activities across all sectors of the economy—with the exception of agriculture and fisheries which, on the contrary, showed increased resilience with positive growth of 7.1 percent and 3.6 percent in the post-COVID period, respectively in the first and second quarters of 2020 (Table 6). Taken as a whole, market services activities were the most affected by the containment with a 30.4 percent contraction in the overall value added of market services. Traffic restrictions and border closures have heavily

affected the tourism industry (hotels, cafes, and restaurants) (-77.5 percent) during the first half of 2020, as well as transport services (-51.4 percent), while ICTs have been resilient overall.

**Table 6: Distribution of sector contributions to growth (quarterly data, year-on-year change, %)**

	Quarter IV 2019	Quarter I 2020	Quarter II 2020
Agriculture and fishing	-1.9	+7.1	+3.6
Manufacturing industries	-0.1	-1.3	-27.0
Non-manufacturing industries	-0.3	-4.8	-20.9
Market service activities (IWOSS sectors)	+1.8	-3.4	-30.4
Including:			
<i>Tourism</i>	+5.4	-16.8	-77.5
<i>Trade</i>	+0.2	-0.8	-14.5
<i>Transportation</i>	-2.7	-12.1	-51.4
<i>Post and telecommunications</i>	+2.5	+1.6	+1.9
<i>Financial services</i>	+6.3	+5.6	-5.5
Non-market service activities (non-IWOSS sectors)	+1.6	-1.9	-15.8
GDP (at market prices)	+0.8	-2.2	-21.6

Note: "Non-manufacturing industries" include software, telecommunications/ Internet service/Web search/data processing, computer systems design and related services.

Source: Based on data from the National Institute of Statistics (INS) and the Central Bank of Tunisia.

The gradual normalization of productive activities augurs well for a nascent recovery that will remain dependent on the evolution of the pandemic situation both in Tunisia and in partner countries and more generally on an improvement in the business climate. In general, the year-on-year forecasts of Tunisia's economic outlook at the end of 2020 show that the technical recession observed in the first half of 2020 could ease, with a potential for recovery in 2021. Indeed, the crisis has led to downward revisions of the outlook for GDP growth at constant prices for the whole of 2020 to -4.3 percent (according to the IMF) and -4 percent (according to the World Bank), against an average recovery estimated at 4 percent in 2021 (Mouley, S. 2020).

### 3.2. At the level of contributions to employment

Job creation was more marked in market service activities (IWOSS sectors) in 2019, with an 24,900 additional annual jobs creation, relatively with the other sectors of the economy, and particularly in the tourism industry (Table 7).

**Table 7: Net job creation by sector**

Sectors	Employment				Employment share (%)	
	2009	2019	Change 2009-2019	(%)	2009	2019
Agriculture and fishing	21,100	2,500	-18,600	-88.1	48.5	4.3
Manufacturing industries	-37,900	3,600	41,500	109.4	-87.1	6.1
Non-manufacturing industries	13,300	17,600	4,300	32.3	30.6	29.9
Market service activities (IWOSS sectors)	39,300	24,900	-14,400	-36.6	90.3	42.3
Including:						
<i>Tourism</i>	4,400	10,300	5,900	134.1	10.1	17.5
<i>Transport and telecommunications</i>	8,200	4,300	-3,900	-47.5	18.9	7.3
<i>Other market services</i>	26,700	10,300	-16,400	-61.4	61.3	17.5
Non-market service activities (non-IWOSS sectors)	7,700	10,200	2,500	32.4	17.7	17.4
Total	43,500	58,800	15,300	35.1	100.0	100.0

Source: Based on data from the National Institute of Statistics (INS) and the Central Bank of Tunisia.

Analyzing the average elasticity of employment with respect to sectoral growth in the last decade shows the global contribution of IWOSS sectors, and in particular tourism, to job creation (Table 8). As previously analyzed, with an overall growth-employment elasticity of around 0.61 for the whole economy, the elasticity of market service activities (IWOSS sectors), of around 0.1, implying that these sectors contribute on average to more than 16 percent of additional employment for each additional point of GDP growth.

**Table 8: Employment elasticities and growth, by sector, 2009-2019**

Sectors	Average growth rate of employment (in %)	Average growth rate of sectoral value added (in %)	Sector employment elasticity / growth
Agriculture and fishing	-1.5	1.8	-0.8
Manufacturing industries	-1.2	2.9	-0.4
Non-manufacturing industries	2.1	3.9	0.6
Market service activities (IWOSS sectors)	0.9	6.4	0.1
Including:			
<i>Tourism</i>	1.7	4.2	0.4
<i>Transport and telecommunications</i>	-0.7	2.0	-0.3
<i>Other market services</i>	-0.1	0.2	-0.5

Source: Based on data from the National Institute of Statistics (INS) and the Central Bank of Tunisia.

### 3.3. At the level of contributions to the balance of payments

The market services sectors (IWOSS sectors), and particularly the tourism industry and transport, contributed on average to 20.6 percent to the total export earnings (Table 9) and to 18.4 percent in average to the attractiveness of foreign direct investment (Table 10) during the last period.

**Table 9: Exports and export growth by sector (in constant prices)**

Sectors	2011		2018		2011-2018
	Exports value (millions of TND)	Share (%)	Exports value (millions of TND)	Share (%)	Annual % growth
Export of market services (IWOSS sectors) (a)	6,727.7	21.2	10,637.8	20.6	58.2
Including:					
<i>Tourism revenue (b)</i>	2,694.9	8.4	4,608.6	8.9	71.1
<i>Transport</i>	1,899.3	5.8	3,023.4	5.8	59.2
<i>Government operations</i>	467.2	1.3	416.8	0.8	-10.8
<i>Other services</i>	1,666.3	5.5	2,589.0	5.1	55.3
Other merchandise exports (FOB) (c)	25,091.9	78.8	40,986.2	79.4	63.3
Total exports (goods and services)	31,819.6	100	51,624	100	62.2

Notes: TND = Tunisian dinar. (a) IWOSS sectors in Tunisia are limited to market services exports. There is no IWOSS goods exports or information's in this field is limited. (b) Within the meaning of the 5th edition of the balance of payments (IMF), this section includes the activities of: tourism, professional and official trips, study and internship trips, trips for medical treatment and other subsistence expenses. (c) In agriculture, fishing, manufacturing, and non-manufacturing industries.

Source: Central Bank of Tunisia.

Also, the contribution of market services (IWOSS) to foreign trade and the balance of payments was consolidated in 2019. Indeed, the balance of services recorded a surplus which improved markedly to reach 3,470 TND in 2019, against 1,897 TND a year earlier. This increase is mainly due to the considerable increase in the travel balance surplus (+1,548 TND), benefiting from the strengthening of revenue generated by the tourism industry in 2019. In addition, the transport balance posted a deficit that contracted by 22 TND compared to its level recorded a year earlier,

mainly due to the increase in receipts from passenger tickets. In contrast, the balance of other services posted a surplus in 2019, which fell slightly (by 2.6 percent).

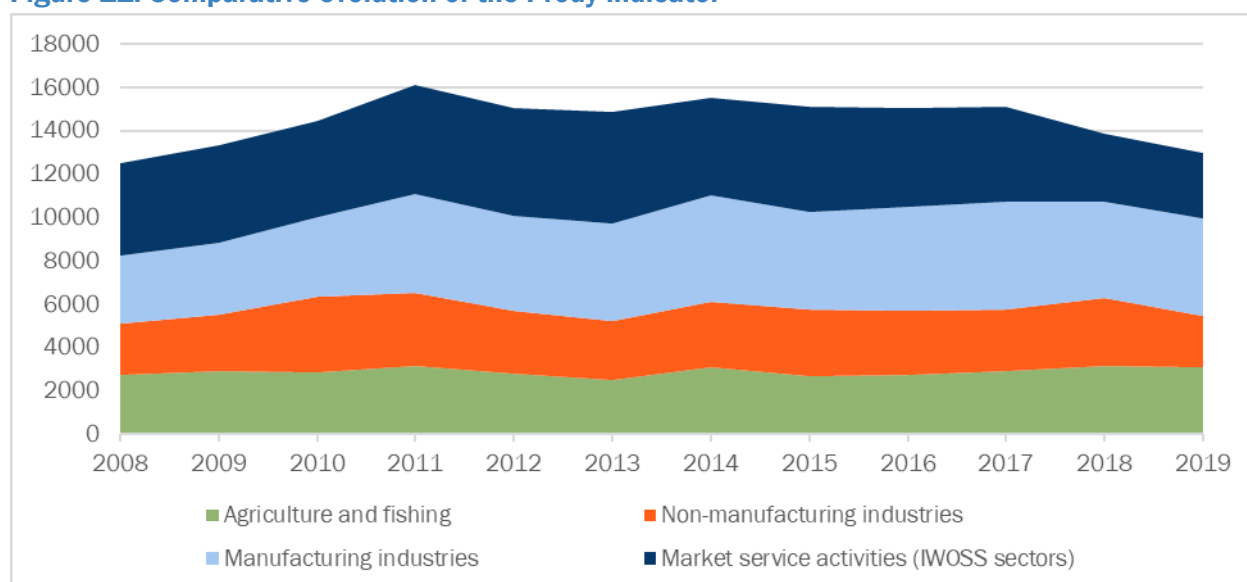
**Table 10: Evolution of foreign investment revenue by sector, commitments (TND millions)**

Sectors	2016	2017	2018	2019
Energy	796	810	910	909
Manufacturing industries	802	975	1.129	1.249
Market service activities (IWOSS sectors) (% of FDI)	297 (15.6%)	347 (16.2%)	703 (25.6%)	321 (12.9%)
Telecommunications	109	76	386	66
Financial services	5	84	80	0
Other services	82	57	134	53
Other sectors	107	130		
Foreign direct investments (FDI)	1.901	2.132	2.742	2.479
Portfolio investments	88	116	124	169
Total foreign investment	1.989	2.247	2.866	2.648

Source: Central Bank of Tunisia.

In particular, the analysis of current sector trends shows that the industrial path needs to be redefined in order to consolidate and reinforce the structural transformation of market service activities (IWOSS sectors). This revival could take place through a better contribution of the structural transformation component, more than the intra-sectoral component, to export growth and total factor productivity. In fact, the greater the structural transformation component, the more the inter-sectoral reallocation of resources makes it possible to generate an effect of upscaling the sector in technological and high-productivity stocks (Cockburn, I. M, 2004; AfDB, 2013). As such, the evolution of the structural change index by sector (Prody indicator) reveals that the export trajectories of market service activities (IWOSS sectors) are the most advanced, which indicates a better diversification of their productive structure and upscaling potential conducive to alignment with global value chains.

**Figure 11: Comparative evolution of the Prody indicator**



Source: Based on data from United Nations.

Note: The Prody indicator of a country by sector reveals whether the trajectory of the exporting sectors is comparable (resp. divergent) to that of the sectoral composition of GDP, which confirms the weakness (resp. importance) of the structural transformation of export dynamics. Prody is the revealed comparative advantage of a product (or sector), calculated as the ratio of the export share of each product (or sector) in total exports, divided by this ratio on a world scale. The result is then weighted by GDP per capita.



### 3.4. Trends into the future

According to IMF (2020), the COVID-19 shock came at a time when Tunisia was already facing persistent macroeconomic imbalances, despite recent progress with policy and reform implementation. Tunisia's economy, already vulnerable before the COVID-19 shock, has been hit hard by the virus outbreak and has experienced an unprecedented drop in growth. Starting in 2021, the country's economic growth is expected to pick up, largely due to the resilience of market service activities (IWOSS sectors).

**Table 11: Projected GDP annual growth 2019-2025 (in percent)**

	2019	2020 (Proj)	2021 (Proj)	2022 (Proj)	2023 (Proj)	2024 (Proj)	2025 (Proj)
Real GDP growth (constant prices 2010)	1.0	-4.3	4.1	2.7	2.7	3.0	3.3
Contributions to growth							
Agriculture and fishing	0.1	0.3	0.2	0.5	0.2	0.5	0.2
Manufacturing industries	-0.2	-0.9	0.4	0.3	0.4	0.5	0.6
Non-manufacturing industries	-0.1	0.0	0.3	0.2	0.2	0.2	0.3
Market service activities (IWOSS sectors)	0.9	-3.6	2.9	1.3	1.5	1.4	1.8
Including:							
<i>Tourism industry</i>	0.3	-1.7	1.3	0.3	0.3	0.1	0.2
<i>Trade</i>	0.1	-0.8	0.1	0.1	0.2	0.2	0.3
<i>Transport</i>	-0.2	-1.5	1.2	0.3	0.2	0.2	0.3
Non-market service activities (non-IWOSS sectors)	0.2	0.2	0.2	0.2	0.1	0.1	0.1

Source: IMF (2020)

## 4. Specific analysis by IWOSS sector and constraints of development

### 4.1. Profiles of key sectors

#### 4.1.1. Tourism industry sector: A value-chain approach

Tunisia is characterized by vast natural tourist attractions and diverse agroecological opportunities, which provide the country's tourism industry with particular potential to become an important source of job creation and economic growth. The global value chains (GVC) methodology has been used to analyze the tourism industry in various regions of the world. While there are numerous types of travel, this section concerns two broad categories with distinct actors and characteristics: leisure and business tourism. Leisure tourism can be defined as any trip where tourists travel internationally for recreation. Although there are many different types of leisure tourism (sun, sand, and surf; environmental or eco-tourism; adventure; cultural; etc.), the term does not describe travel to visit friends or relatives. Business tourism involves international travel for professional reasons. It includes visits to see clients, scouting trips for potential investment opportunities, and travel for conferences. The business tourism GVC includes a conferences segment, which comprises meetings, incentives, conferences, and exhibitions (often known by the acronym MICE). The following sub-sections outline the both the leisure and business/conference tourism GVCs.

#### Leisure tourism GVC

Building upon distinctions outlined by Christian and Nathan (2013), the leisure tourism GVC can be divided into three categories of actors: consumers (or end markets), distribution intermediaries, and service providers. Lead firms assemble and package individual services into cohesive travel experiences. Their power derives from the ability to draw on the capabilities of large, global



networks of service providers while also having direct access to consumers or travel agents (Christian 2013). Most often, these actors are distribution intermediaries such as online portals, tour operators and destination management companies, although, in some cases, powerful individual service providers such as international airlines and hotels may act as lead firms by bundling and selling tourism products. The identity, power, and linkages among actors depend on the distribution channels that consumers use to access the product.

### **Business/conference tourism GVC**

Business tourism GVCs can be divided into the same categories as the leisure tourism GVC: consumers, distribution intermediaries, and service providers. There is further overlap between the two chains, as many of the same service providers and distribution intermediaries are active in both. There is also frequent spillover, with business travelers regularly extending trips to experience local sights. There are, however, important differences in the identity, characteristics, and value-addition propositions of the lead firms in the leisure and business tourism value chains. The 'Online Package' distribution channel is used less frequently.

#### *4.1.2. ICT sector*

The ICT sector in Tunisia is often reduced to the telecommunications sector (including computer services), the post office, and call centers. IT services, whose share in GDP was around 1 percent on average over the 2015-2019 analysis period, are activities to be developed much more than telecoms whose value in added value is up to 5 percent. As such, the activities of companies in computer engineering services (SSII) are of particular importance in the development of the sector. The main areas of intervention of these IT services companies in Tunisia are as follows:

- Strategic planning in information and communication system and sector,
- Consulting in information systems and ICT (diagnosis, modeling),
- Software engineering and publishing,
- Communication network engineering,
- Integration of embedded systems,
- Integration of information or communication systems (ERP, CRM, BI, global banking, e-business/e-trade solutions, extended business networks ...).

These companies are also involved in various sectors of intervention:

- "Backbone" sectors (horizontal): e-commerce, e-gov, e-learning,
- Public sector: budget management, taxes, customs, health services,
- Telecoms sector: telecom operators, telecom services,
- Financial sector: banking, insurance.

At the end of 2018, there were 187 computer engineering companies (SSII/ESN), divided into the following segments: (i) software development and implementation services (13), (ii) computer programming services (17), (iii) customer-specific software development (79), (iv) search engine design (11), (v) free software development - open source (19), (vi) bitcoin mining (6), (vii) software testing services (14), (viii) computer systems testing services (13) and (ix) project modeling services (15). Most of the ICT companies in Tunisia are relatively young and small. About 80 percent of them have fewer than 50 employees.

Compared to other sectors, the ICT sector is a promising sector (Mouley, S., Reiffers, J.L. et al., 2018). Indeed, at the level of trade in services by sub-sectors in the Arab Maghreb Union (AMU), the comparison of the global structure and in the AMU makes it possible to rule on RTAs (revealed comparative advantages). RTAs are measured for a given sector by the ratio of the share in AMU

exports to that in world exports. If the ratio is greater than one, the region shows specialization and holds a relative advantage compared to the rest of the world. Three distinctive features of the AMU region are highlighted by the RTAs outlined in Table 12. The first concerns the importance of ICT and other services (personal and business) in trade in services in the world and somewhat less in AMU countries.

**Table 12: Trade in services in the AMU and comparative advantages revealed by sub-sectors between the AMU and the world (2018, latest data available)**

Indicators	% of AMU exports (1)	% of AMU imports (2)	% of world trade (3)	RCAs (4): (1) / (3)
ICT and other business and personal services	39.8	38.7	39.2	1.01
Financial services	3.1	6.4	8.2	0.38
Transport	20.2	39.5	19.5	1.03
Travels	36.9	15.47	33.1	1.11
Total	100	100	100	

Source: Calculations based on data from the World Bank (<http://databank.banquemondiale.org/data/databases>).

Tunisia has a comparative advantage revealed particularly in business process outsourcing (BPO) services, which is the outsourcing of business processes representing the low value-added activity of offshore, mainly call centers, which represent 67 percent of the Tunisian offshore market. Nevertheless, Tunisia is counting on the valuation of the know-how of its engineers in the public and private sectors in order to increase the capacities of Knowledge Process Outsourcing (KPO).

In general, and concerning the structure of exports of services in Tunisia compared to a reasoned benchmark of other partner countries or commercial competitors, and also in relation to the world average, the structure of exports of services in the world is divided in 50 percent travel and transport and 50 percent ICT and financial services, while Tunisia's specialization remains in traditional sectors: 78 percent for transport and travel, 20 percent ICT and 3 percent financial services. By way of illustration, in Morocco, the share of ICTs in services exports is significantly higher than that of Tunisia, around 33 percent on average. The share of the ICT sector is even higher in developed countries, Tunisia's main partners. Indeed, the shares of this sector for France, Italy and Germany are respectively 52 percent, 39 percent and 51 percent in total service exports.

#### 4.1.3. Financial services sector

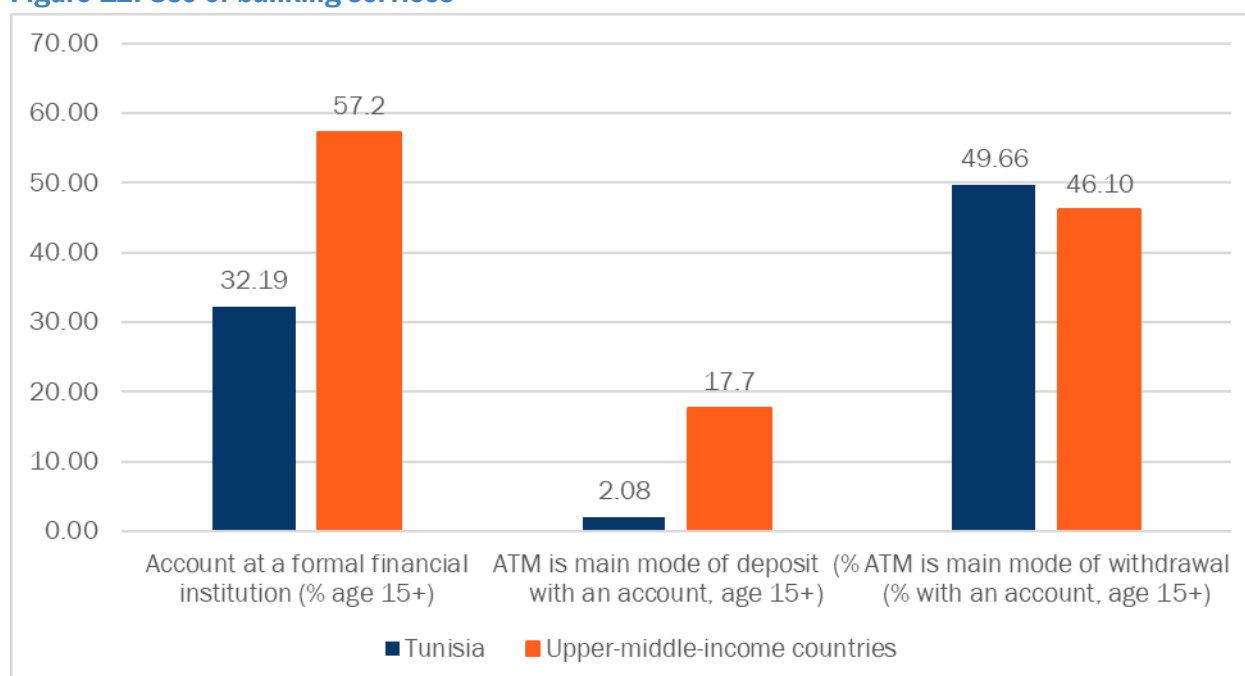
In addition to the development of the banking sector in Tunisia, the diversification of the financial offer is also tangible at the level of the non-banking financial sector. In leasing activities in Tunisia, the sector brings together around ten companies, often owned by banks, whose activities finance around 15 percent of the economy's gross fixed capital formation. Microfinance institutions, booming since the 1990s, have recently come under central bank supervision due to their financial intermediation functions as payment, savings, collection, and distribution institutions. The sector is organized around two types of offers: Enda inter-arabe and the Tunisian Solidarity Bank (BTS), the only funding body for microfinance associations (AMF), of which more than 290 have registered at the level of the BTS system, and which must comply with prudential and financial transparency standards.

In terms of insurance activities, and despite a relatively large number of players (more than 20 companies), the insurance sector is still underdeveloped. The volume of premiums averages 1.8 percent of GDP, with an average annual growth rate of premiums collected of just 0.8 percent. Islamic finance products include several vehicles, including Sukuk products (financial products backed by tangible assets with a fixed maturity) and Murabaha products (sales contract at cost plus a known and agreed profit margin between buyer and seller). In some cases, they are offered

by commercial banks, through approved windows or counters, but more frequently the products are made available to the public by specialized banks.

In terms of capital markets, the primary markets for stocks and corporate bonds remain relatively small, and the secondary market lacks liquidity. The stock market is not used for long-term investments and does not finance the economy very much. In terms of market capitalization, number of listed companies, volumes traded, and role in financing economic activity, the Tunis Stock Exchange remains the worst-performing of emerging comparator countries. In addition, the market is also dominated by local retail investors. Less than 20 percent of the securities, in terms of values, are held by foreign investors. Financial institutions remain the biggest contributors to market capitalization and sustain efforts to increase financial inclusion, especially in regard to digitization, although debit and credit cards are less widespread among the population aged 15 and over than in the rest of developing countries and in the world. In addition, a dynamic of membership in the digital age is starting to build with the increasing use of ATMs, the internet, and/or mobile telephony for bill payments, purchases, and account consultations.

**Figure 12: Use of banking services**



Source: Financial Access Surveys - IMF and Global Findex Survey and Database - World Bank.

## 4.2. Major challenges and suggested solutions

### 4.2.1. The labor market mismatch

According to the report of the European Training Foundation (2019), The Tunisian labor market suffers from a mismatch due to high unemployment which mainly affects young people, women, and graduates. This situation is reflected in a series of imbalances:

#### *An imbalance between total supply and total demand for labor*

The annual employment report conducted by the Arab Institute of Business Managers shows in particular a global employment gap of around 124,609 jobs (including 85,436 in market service activities), against excess demand for jobs in the tourism industry in the order of 1,624 unfilled jobs (Table 13).

**Table 13: Mismatch between vacancies and job demands by size and sector (2018)**

Sector / Size	Distribution of offers of jobs				Breakdown of job requests			
	< 50	50-200	200 +	Total	< 50	50-200	200 +	Total
Agriculture and fishing	248	-	-	248	-	-	-	-
Industrial sectors	3,333	16,289	44,180	63,802	6,639	46,239	112,272	165,150
Market service activities (IWOSS sectors)	1,248	1,592	16,630	19,470	8,740	21,252	74,915	104,906
<i>Tourism</i>	-	-	1,380	1,380	-	-	3,004	3,004
<i>Transport, post and telecommunications</i>	1,248	1,592	15,250	18,090	3,024	3,394	19,804	26,222
<i>Other market services</i>	6,553	12,546	42,637	61,736	5,716	17,858	52,107	75,680
<b>Total</b>	<b>11,382</b>	<b>30,427</b>	<b>103,447</b>	<b>145,256</b>	<b>15,379</b>	<b>67,491</b>	<b>187,187</b>	<b>270,056</b>

Source: Arab Institute of Business Managers, Tunis (2018)

### A gender imbalance

This imbalance appears between the employment of men and that of women, because despite the capacity of market service activities (IWOSS sectors) to create employment, a gap also marks an unequal distribution to the disadvantage of women employed as well as a wage gap (Table 14).

Note: TND indicates Tunisian dinar.

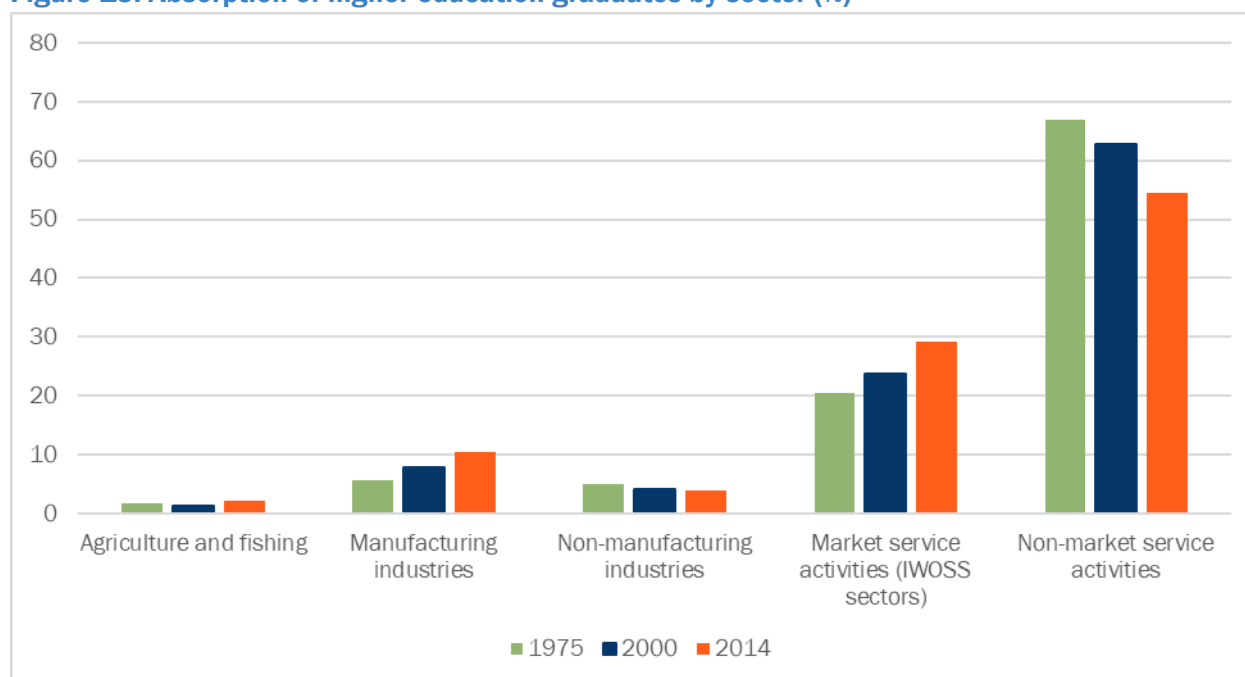
**Table 14: Distribution of women employed by sector of activity and wages by gender**

	% female employees	Average salary (TND)		Median salary (TND)	
		Men	Women	Men	Women
Food industries	25	664	413	531	316
Textile, clothing, and leather industries	78	542	331	457	323
Other manufacturing industries	30	690	495	533	445
Chemical and pharmaceutical industries	32	1,147	827	812	572
Electronic and electrical industries	62	859	409	647	395
Building materials industries	5	389	616	255	412
<b>IWOSS sectors</b>	<b>31</b>	<b>1,347</b>	<b>1,050</b>	<b>990</b>	<b>858</b>
<i>Trade</i>	29	723	580	485	420
<i>Transport and storage</i>	14	982	955	688	681
<i>Tourism</i>	19	502	450	347	332
<i>ICTs</i>	40	1,837	1,240	1,318	954
<i>Financial and insurance activities</i>	40	3,088	2,400	2,626	2,392
<i>Specialized, scientific, and technical activities</i>	42	953	672	485	368
Non-market service activities	42	681	427	420	299
<b>Total</b>	<b>40</b>	<b>725</b>	<b>480</b>	<b>468</b>	<b>357</b>

Source: National Institute of Statistics (INS) - National Business Directory.

#### 4.2.2. Mismatch of skills and qualifications

The mismatch between supply and demand for jobs stems in fact from an imbalance between the supply and demand for qualified work (skill gaps or skill mismatches) due to the qualification requirements of certain sectoral jobs (sector-skill requirements). This mismatch of qualifications is also reflected in the low absorption capacity of higher education graduates displayed by the main job-creating sectors. Indeed, companies have repeatedly expressed the difficulties they have in finding the skills they are looking for. The skills gap identified by World Bank business surveys is 29.1 percent, compared to 27 percent for the more recent survey conducted by the Tunisian Institute of Competitiveness and Quantitative Studies.

**Figure 13: Absorption of higher education graduates by sector (%)**

Source: National Institute of Statistics (INS) - General Census of Population and Housing (2014).

In particular, there is a lack of skilled labor in the tourism industry, as well as a problem of under-qualification affecting certain occupations in the sector. Most of the training is provided by eight establishments<sup>4</sup> that have undergone upgrades and reforms to bring their training products closer to employers' needs, but their resources are still limited.

Also, unemployment among young people (and particularly young graduates), which tends to be structural in Tunisia, results from a mismatch both quantitative (between higher education and the needs of the private sector) and qualitative (graduates lacking the skills required to enter the job market), despite massive investments in education. In fact, massive enrollment and declining school selectivity in recent decades have facilitated access to low quality higher education. Similarly, the relative efficiency index of vocational training programs is less than 1, which means that the unemployment rate among beneficiaries of these programs is lower than that of non-beneficiaries (Table 15).

**Table 15: Percentage of the unemployed after having benefited from a vocational training program, by level and type of education**

	Post-participation unemployment rate	Relative efficiency index
Less than high school	15.68	0.76
Secondary (bachelor's degree)	23.64	0.79
Professional training	18.95	0.46
Master's in social sciences	29.22	0.68
Economics, management, and law	21.18	0.45
Basic sciences	32.59	0.80
Other disciplines	18.91	0.51
Engineering degree	9.09	0.37
Diploma in medicine/pharmacy	15.53	0.53
PhD (doctorate)	7.13	0.27

Note: The relative efficiency index is equal to the unemployment rate among beneficiaries divided by the unemployment rate of non-beneficiaries.

Source: Ayari, C., Reiffers, J.L, Mouley, S. et al. (2015).

<sup>4</sup> A higher institute (tertiary level), three vocational training centers and four specialized schools.

## 5. Issues, challenges, and recommendations for key IWOSS sectors

### 5.1. Tourism industry

Tunisia is endowed with rich cultural and abundant natural resources. For the tourism to be successful in the country, though, Tunisia still needs some crucial enablers like political stability, air transport facilities for easy access, and high-standard accommodation are needed. The other valuable resource of the country is its people, as Tunisia has a large pool of labor that can be trained and employed in the sector.

More specifically, the country has the potential for conference tourism. Tourism could offer a substantial contribution to the overall economy by creating opportunities for local communities to sell goods and services directly or indirectly, which could be an important catalyst for the development of the social and solidarity economy even though Tunisia has just passed a law in this direction.

The other opportunity is in infrastructure built to improve tourist flows, such as transport and communications, as these can also benefit other sectors of the economy. In fact, Tunisia's infrastructure quality ranked favorably in the Global Competitiveness Report 2018/2019, despite the political and social revolution of 2011. Out of 141 countries, Tunisia ranked 46 in road connectivity, 51 in railroad density (km/1000 km) and 59 in efficiency of train services. Currently natural gas is the main fuel for power production, but the country has plans to invest in renewable energy through the "Tunisian Solar Plan (PST)," which includes 40 technology projects in solar power, wind power, and energy efficiency.

The government has made attempts foster the tourism sector recent years, and numerous development programs are underway, which should increase the country's capacity from 150,000 to 360,000 beds in 2016-2020. The development was carried out in depth (a coastal strip 5 kilometers long, and an area of 310 hectares). The legal and financial arrangement involved multiple partners, including international organizations, Tunisian public authorities, and foreign investors. The areas concerned extend over several hundred hectares, and accommodation capacities, ranging between 15,000 and 30,000 beds, are divided between several dozen hotel units and second homes.

#### *Recommendations*

The tourism industry has been a popular topic among international organizations and academics, which has led to several recommendations for policy interventions that focus on various areas, including: infrastructure provision; regulating markets such as aviation; setting quality training, and environmental standards, developing border policy; and stimulating tourism demand and investment (OECD 2014). Using a GVC perspective for the analysis provides insights that both reinforce the traditional orthodoxies and tourism GVCs. Although service providers regularly offer the largest opportunity for employment in each chain, it is the distribution intermediaries who often control the sector's upgrading potential by facilitating links with end markets. These recommendations can be grouped as follows:

**Encourage public-private partnerships:** The qualitative leap envisioned in Tunisia requires sustained demand and the entry of new actors, as well as the development of public and private sector partnerships. The in-depth renewal of the image of this industry on the source markets is becoming essential to allow this sector to become independent and to play its role fully in the economic development of Tunisia. The global picture of the country becomes a crucial factor in



choosing a destination. The integration of tourist sites, the highlighting of culture, traditions and national heritage allow a reduction in uncertainty and a better understanding of this sector by the local population. Promotional campaigns that can restore consumer and business confidence and develop product quality assurance and certification are needed.

**Skills training:** Management, organization, communication, and computer skills are crucial for distribution intermediaries and service providers that seek to upgrade their position in the chain. There are international programs, designed to teach these skills to students with the UNWTO, as well as TedQual certification program. It is a certification of a voluntary nature that seeks to facilitate the continual improvement of tourism education, training and research programs through the definition of a set of minimum standards of quality for tourism education. However, Africa only has two schools that have earned certification (Utalii College in Kenya and the Hotel and Tourism Training Institute Trust in Zambia). Governments can play a role in either exploring the creation of hospitality programs at existing institutions, or providing scholarships for domestic students to study in Kenya or Zambia.

**Infrastructure:** Despite Tunisia's progress in terms of road connectivity and railroad density, there is still a lot of work to be done. Out of 141 countries, Tunisia is ranked 118 in efficiency of air transport services and 101 in liner shipping connectivity. Additionally, Naudé and Saayman (2005) detail how connectivity to the internet and communication infrastructure are important considerations for travelers from all continents. It is therefore necessary to double the efforts of the government to improve the infrastructure and attract more tourists.

**Strengthen linkages with domestic industries:** Underdeveloped linkages between tourism and sectors such as agriculture and construction can inhibit industry development and limit the economic benefits associated with tourism. Thus, the government must take the initiative to address the poor communication and mistrust that sometimes characterizes the relationship between food supply decision-makers, intermediary supplier organizations, and local producers.

**Increase marketing efforts:** Tunisia has many assets key to a strong tourism sector, including significant reserves in seaside tourism, cultural events, tourism linked to traditions, natural resources, national parks, sports such as horse racing and hunting, wine, and gastronomic tourism.

## 5.2. ICT sector

Conscious of the key role played by ICT in the development process, Tunisia has launched a strategic plan for ICT—“Digital Tunisia”—to consolidate its positioning in the MENA region with the development of digital finance, cloud computing and related products, and web-based services (e.g., e-health). The strategy is broken down into operational projects aimed at making Tunisia an international digital reference and making ICT an important lever for socioeconomic development. Through this vision, Tunisia aims to:

- Guarantee social inclusion and reduce the digital divide through better access to information and knowledge, through the democratization of access equipment, the generalization of broadband access and the implementation of very high speed,
- Strengthen digital culture by the integration of ICT in educational courses,
- Move towards e-Administration to make services for citizens, fair, transparent, agile, and efficient,
- Contribute to the reduction of unemployment and the creation of jobs in the digital and offshoring sectors.

The implementation of this strategy and associated projects should enable Tunisia to:



- Double the value added of digital technology to reach an average of \$6 billion per year while quadrupling digital exports to reach \$3 billion per year,
- Create 80,000 jobs in five years, with an average creation rate of 25,000 new jobs per year.

This plan was revised in 2020 with a new five-year program aimed at considerably increasing the number of jobs and export earnings in the sector, as part of the update and the new strategic economic development plan 2021-2025. In addition to the new Digital Tunisia 2020 strategy, which concerns the entire sector, the "Smart Tunisia" program is intended for companies in the offshoring sector and aims to create 50,000 jobs in five years in the field of information technologies. The government is aware of the potential of the sector and has allocated, for the next five years, a budget equivalent to 500 million euros in the form of fiscal and financial incentives, in order to support international operators to set up in Tunisia.

### **5.3. Financial services sector**

The COVID-19 crisis has revealed the efficiency of teleworking and mobile payments as well as the opportunity to use artificial intelligence solutions, which can be accelerators of digital transformation. Indeed, financial services and digital finance offer real potential for economic recovery in Tunisia. It is within this framework that the harmonization of the central banks of the Maghreb countries regarding regulations governing banking and financial supervision and the convergence of the degrees of development of payment systems and technical platforms should make it possible to give new impetus to new instruments of technological finance (Fintech) and central bank digital currency.

This digital transition is dependent on the removal of constraints related to the infrastructure of payment systems and in particular in terms of the interoperability of mobile payment services. The establishment of a regulatory and technical framework to promote the promotion of digital payments will be a catalyst for the development of technological innovations and digital transformation in the financial field.

## **6. Conclusion**

Following the analysis conducted in our research and after examining the current state and the contribution of IWOSS to the economy and the country's exports, we find that Tunisia is endowed with undeniable comparative advantages in many key sectors such as tourism, ICT, and financial services, as well as the human and natural resources necessary for to effectively exploiting these industries' potential to create jobs, especially for young graduates.

However, Tunisia suffers from major obstacles that inhibit its quest for development and growth, and in particular a relative shortage of skilled labor and especially the mismatch of skills and qualifications. To address these issues, a multilateral approach of stakeholders, including government and the private sector, is essential for continuing to create quality opportunities and jobs for young Tunisians. Such an approach will need to be supported by the right policies and a favorable business environment to support a young, diverse, and talented workforce, through high quality training and the generation of positive perceptions of jobs in IWOSS activities.

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