

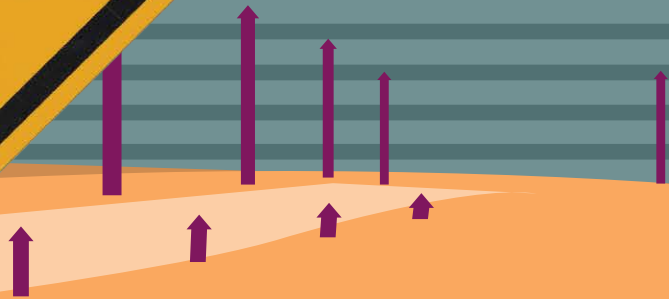
An economy with deep-running dysfunctions,  
which are at the root of the feeble  
performance in creating good quality jobs





An Economy Performing  
Below its Capacity

01



This chapter assesses the health of the Tunisian economy. It highlights an economy with deep-running dysfunctions, which are at the root of the feeble performance in creating good quality jobs. Section One focuses on the analysis of Tunisia's structural transformation. It discusses the rate of productivity growth and the extent of reallocation of resources toward the most productive sectors. The analysis highlights an economy characterized by limited structural change and indicates that economic performance has been driven mainly by the expanding role of the public sector. It also suggests the existence of severe distortions, which have contributed to a suboptimal allocation of resources, keeping economic performance below potential. The analysis of firm-level dynamics presented in Section Two highlights the corresponding paralysis of private sector firms and also points to the existence of significant distortions, which are at the root of the under-performance of private firms. It highlights an economy where firms' dynamics are stunted and characterized by stagnant productivity, weak jobs creation, and feeble export performance—all attesting to the limitations of Tunisia's current economic environment.

### 1.1 / Stunted Macro Dynamics: Persistent Unemployment, Low Productivity, Misallocation of Resources, Weak Structural Change, and Feeble Export Performance

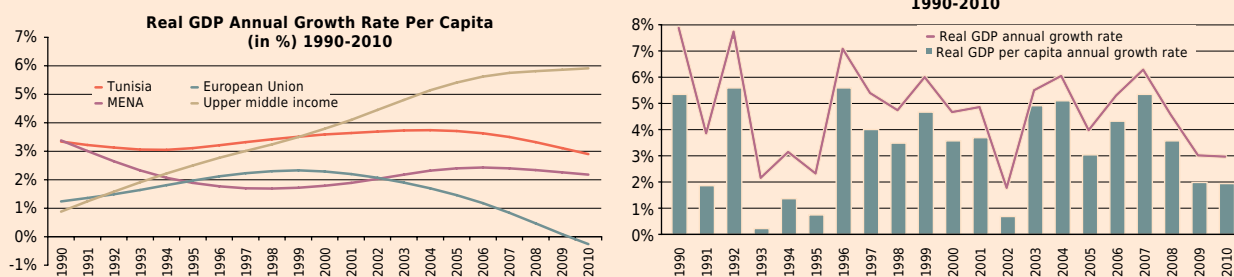
Tunisia's growth performance from 1990 to 2010 was good compared to its regional peers but substantially weaker than other upper middle-income countries, notably from 2000 to 2010. Tunisia grew at about 3.4 percent per year in real per capita terms during 1990 and 2010 and was the second fastest growing country in the MENA region since 1990. Nevertheless, other upper middle-income countries (U-MICs) on average grew at 1.5 times that speed over the last decade (table 1.1 and figure 1.1). Well-performing U-MICs such as Bosnia and Herzegovina and China enjoyed double-digit growth over the same period.

**Table 1.1:** Average Annual Growth Rate in Real GDP Per Capita (in %)

	Tunisia	Upper MICs
1990-2010	3.4	3.8
2000-2010	3.5	5.2

Source : World Development Indicators (WDI)

**Figure 1.1:** Real Per Capita Growth Rate, 1990-2010



Source: World Development Indicators (WDI); authors' calculations.

Note: MENA refers to non-oil-rich MENA countries. Growth rates in graph have been smoothed with HP filter.

Underpinning this meek performance, Tunisia suffers from a structurally low level of investment, and domestic private investment is especially low. Investment hovered around 24 percent during 2000-2010, which is low compared to other U-MICs and take-off countries. The level of private domestic investment is especially low, at around 15 percent in Tunisia over the period. Further, domestic private investment remained focused on real estate (considered safer from predation by Ben Ali—see Chapter Three). In terms of sectors, most of the domestic private investment (54 percent) is concentrated in the services sector, which is highly shielded from international competition (see Chapter Eight).

Foreign Direct Investment (FDI) inflows were significant but mainly focused in the energy sector; however, investments in manufacturing remained mainly in low value added and assembly activities. FDI inflows to Tunisia reached 3.7 percent of GDP on average during 2000-2010 compared to 3.1 percent average for MICs and 3.3 for U-MICs. In reality the apparent success of Tunisia in attracting FDI hides a paradox. Although Tunisia is geographically well positioned and is well endowed in skilled human resources, it has attracted mainly FDI targeting natural resources, 60 percent on average during 2006-2012 (table 1.2). In fact, FDI in manufacturing dropped by half between 2000 and 2006 and stabilized around an average of 26 percent of FDI during 2006-2012. Further, FDI in industrial sectors has remained focused on low value added industries, notably electric cabling, construction materials, and textiles (table 1.3)<sup>1</sup>. In addition, unlike the recent trends in Morocco, FDI in the services sector continues to remain below 10 percent, even though these sectors are critical to improving employment of university graduates (figure 1.2).

From 1990 to 2010, Tunisia rapidly expanded access to education, particularly to higher levels of education<sup>2</sup>. As a result, impressive progress has been made in enrollment and completion rates in both secondary and tertiary education. In particular, gross secondary enrollment rates increased from 52 percent in the early 1990s to 89 percent in 2009, and gross tertiary enrollment rates increased from 8 percent in the early 1990s to 34 percent in 2009. These increases have made it possible for some education outcomes for girls—such as access to tertiary education—to surpass those for boys (figure 1.3). As discussed in Chapter Five, however, challenges remain in ensuring the quality of higher education degrees in Tunisia.

**Table 1.2:** Share of FDI by Sector in Tunisia, 2006-2012 average

Average 2006-2012	
Manufacturing industry	25.7
Energy	60.4
Tourism and housing	3.5
Agriculture	0.5
Services	9.9
Total FDI	100.0

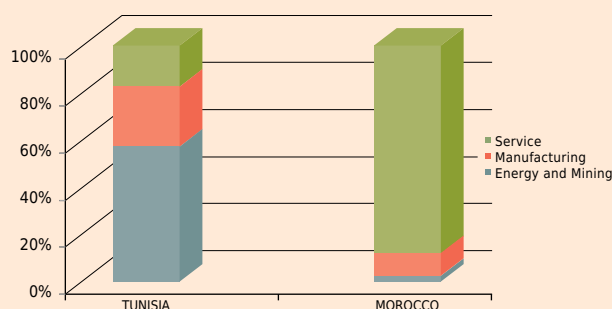
Sources: Data from Tunisian authorities (Foreign Investment Promotion Agency-FIPA)

**Table 1.3:** Share of FDI by Industrial Sector in Tunisia, 2006-2012 average

Average 2006-2012	
Various industries	6.0
Agro-food	5.5
Construction materials	16.0
Mechanical, electrical and electronic	28.6
Chemical and rubber	21.7
Textiles and garments	11.7
Leather and shoes	4.9
Plastics	6.7
Total industry	100.0

Sources: Data from Tunisian authorities (FIPA)

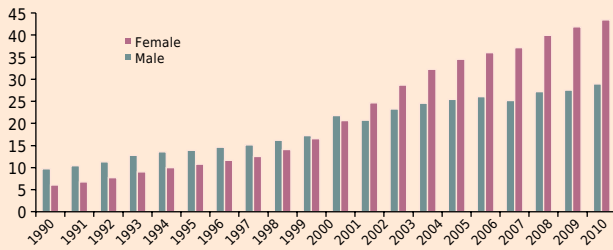
**Figure 1.2:** FDI Inflows Across Sectors, Tunisia and Morocco, 2008-2010 average



Sources: Data from Tunisian (FIPA) and Moroccan authorities

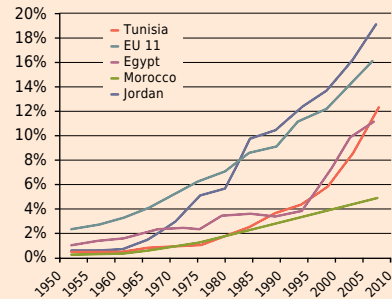
**Figure 1.3:** Expansion of Tertiary education in Tunisia, 1950–2010

a) Tertiary Gross Enrollment Rates in Tunisia, 1990–2009



Source: World Bank EdStats.  
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/EXTDATASTATISTICS/EXTEDSTATS/0,,contentMDK:21528247~menuPK:3409442~pagePK:64168445~piPK:64168309~theSitePK:3232764,00.html>

b) Share of Population with Tertiary Education, 1950–2010

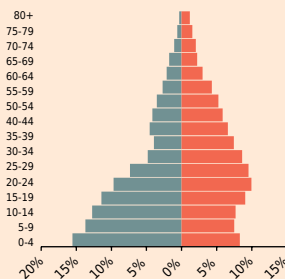


Source: Barro-Lee (2011)  
 Notes: EU11 refers to the new EU member states, excluding Cyprus and Malta, and including Croatia.

In parallel, the unemployment rate remained persistently high and increasingly focused on young graduates. Unemployment hovered above 13 percent over the past two decades. Between 1990 and 2010, the share of population aged 15 or more with a tertiary education nearly quadrupled from 3.7 percent to 12.3 percent. Yet as the economy remained stuck in low productivity activities, it was unable to absorb this rapid increase in university graduates. Many of these graduates were hired by the public sector at large, which by 2010 employed over 60 percent of all university graduates. Still, the unemployment rate of skilled workers increased steadily. Until the 1990s unemployment among university graduates was negligible, but by the end of 2012 over 30 percent of university graduates had no job (Figure 1.4).

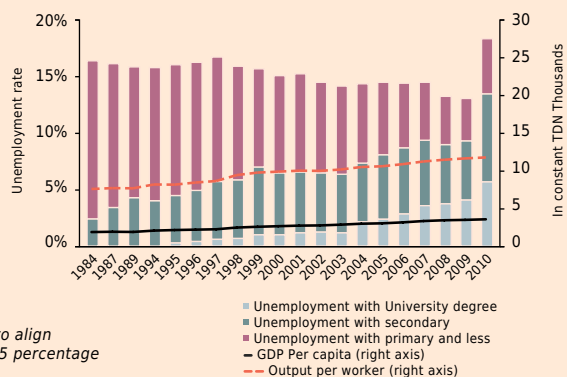
**Figure 1.4:** Tunisia's Youth Bulge and Unemployment of University Graduates

a) Demographic Changes in Tunisia



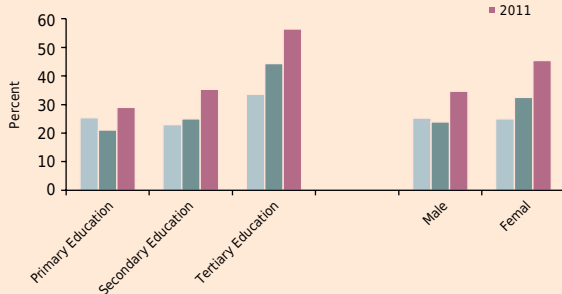
Source: INS; authors' calculations  
 Note: A change in the definition of unemployment was introduced in 2008 to align Tunisia to the ILO definition and resulted in a reduction of approximately 1.5 percentage points in the level of unemployment.

b) Evolution of Unemployment by Level of Education



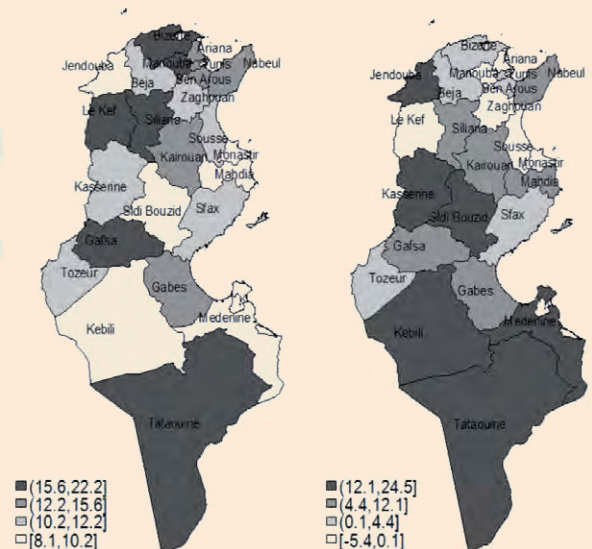
Tunisia suffers from high and increasing rates of youth and graduate unemployment, especially among females and in the interior rural regions. Although the stock of unemployed is still mostly made of low-skilled male individuals, perhaps the most concerning feature of the Tunisian labor market is the high rate of unemployment among educated youth, and especially women, many of whom have become long-term unemployed. The national unemployment rate, which peaked at 18.9 percent in 2011 in the aftermath of the revolution, has decreased to 15.3 percent as of December 2013 (see details in Chapter Five). It is much higher among women, at 21.9 percent (up from 15.4 percent in 2005) compared to 12.9 percent for men. Unemployment is increasingly concentrated on youth and graduates (from 13.3 percent in 2005 to 31.9 percent in December 2013), which tend to be the most productive group in the population. It is at crisis level for women graduates—41.9 percent of women graduates were unemployed as of December 2013. Further, abnormally large numbers of human resources, particularly women, remain out of the active work force and are not counted in unemployment statistics because they are not actively seeking employment (box 1.1). Unemployment is concentrated geographically in the north west (at 20.3 percent) and the interior south of the country (at 23.5 percent). Levels of unemployment are lower along the north eastern coastal areas (at 12.5 percent as of mid-2013).

**Figure 1.5:** Unemployment Rates Among Youth 15 to 29 Years Old, in 2005, 2010, and 2011



Source: Authors' calculations using the Tunisia Labor Force Surveys 2005, 2010, and 2011

**Figure 1.6:** Unemployment Rates by Region in 2005 and Change to 2011



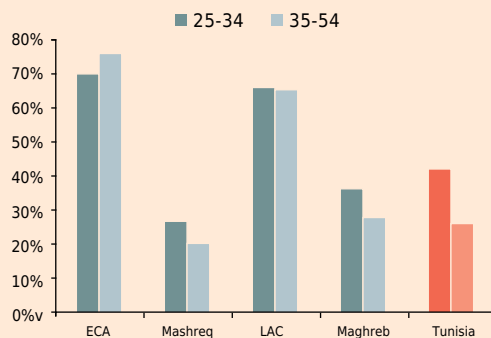
Source: Authors' calculations using the Tunisia Labor Force Surveys 2005 and 2011

Note: Numbers in brackets at the bottom of figure 1.6 represent rates of unemployment (as percentage).

### Box 1.1 Women's Participation in the Labor Force is Very Low

Despite recent improvements, labor force participation rates remain low for women. Data from the labor force survey (LFS) indicate that labor force participation rates have increased between the years 2005 and 2011, particularly in rural areas and among younger and more educated segments of the population. At 27 percent, however, levels of female participation remain low by international standards although in line with MENA regional standards. According to ILO KILMnet data for 2008, labor force participation among women was at 51.6 percent worldwide, at 28.1 percent in North Africa, and at 25.4 percent in the Middle East. Female labor participation rates among younger and among more-educated women are much higher than among older or less-educated women (at 54 percent among women with tertiary education).

**Figure B1.1.1: Female Labor Force Participation Rates in 2010**



Source: World Bank 2013b and Labor Force Survey 2010.

Note: ECA = Europe and Central Asia; LAC = Latin America and the Caribbean

In Tunisia, and in the MENA context, low female participation rates can be attributed to both social and economic factors (World Bank 2014c). Beyond social norms that tend to privilege male employment, a number of important economic factors undermine women's decisions to join the labor force. High reservation wages—that is, the lowest wage rate at which they would be willing to accept a particular job—arise from low access to and/or the high cost of outsourcing child care and domestic work as well as the existence of transportation constraints and/or employment quality or safety of available jobs.

Specifically, the most important factors that affect Tunisian women's decision to participate in the labor force include:

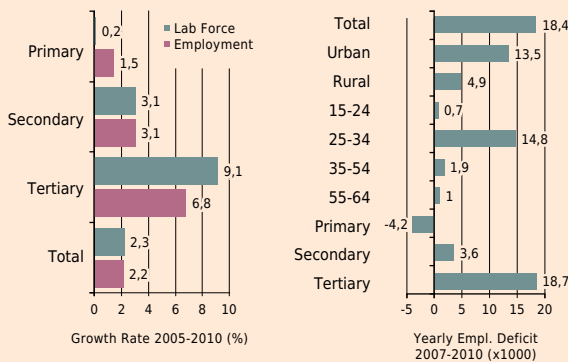
- **Educational Attainment:** A closer look at the labor force participation profile reveals that low participation rates in Tunisia are mainly driven by very low participation in the labor force of less educated women (at 20 to 26 percent). In fact, labor force participation among women with university degrees (at 53 percent) is only slightly below that in more developed countries. Examining the determinants of female labor force participation using a simple probit regression model, results indicate that (controlling for other factors), a woman with a university degree is 64 percent more likely to be participating in the labor force than a woman who completed only primary education. Interestingly, obtaining secondary instead of primary education increases a woman's likelihood of being in the labor force by only 16 percent (World Bank 2014c).

- **Age and Marital Status:** Moreover, results indicate that participation of women tends to be higher in urban areas, among younger cohorts (25–34 years old), and among women who are not married. Indeed, regression analysis indicates that marriage is a main factor reducing women’s labor force participation. Being married decreases a woman’s likelihood of participating in the labor force by 31 percent compared to single women (other things being equal). As noted, both social norms and economic factors are likely to contribute to this result. Corroborating this statement, data from the 2010 labor force survey reveal that family reasons are most often cited for women’s nonparticipation in the labor force. In comparison, illness and education are the main reasons for men’s nonparticipation in the labor force.
- **Number of Dependents in the Household:** The number of babies in the household (generally a very important determinant of female labor force participation) plays a less important role in Tunisia (World Bank 2014c). Indeed, regression analysis indicates having one infant in the household (that is, a child less than 6 years of age) decreases female participation by only 4 percent (compared to 10 to 15 percent in countries like Turkey; see World Bank 2009b). The number of seniors (aged 65 and over), on the contrary, has a small but positive effect on labor force participation. The elderly, hence, seem to play a supportive role (for example, helping with household chores and children), instead of needing attention themselves. That said, the effect of household composition on female participation remains limited.
- **Education of the Household Head:** Characteristics of the household head (usually the male) also influence a woman’s decision to work. Surprisingly, results indicate that higher education of the household head is negatively associated with female participation. This could be due to two factors. On the one hand, a highly educated household head is more likely to be employed and to earn sufficient income. On the other hand, a less educated household head is more likely to work in a family business or in agriculture, in which case the woman would often help in the family business or on the farm. If the head of the household is female, the likelihood of another woman living in the household participating in the labor market increases by 8 percent.
- **Education of the Household Head’s Spouse:** Female role models can influence a woman’s decision to look for work, especially in societies driven by different cultural preferences and values. Women look at the behavior of other women in the household as role models, thus influencing their preferences. For instance, the education of the spouse of the household head is positively associated with female labor force participation. Women living in households where the head’s spouse has a university degree are 12 percent more likely to participate in the labor force than are women who live in a household with a spouse who attained primary education at most.
- **Local Labor Market Conditions:** Local labor market conditions (such as the prevalence of unemployment) could also influence female labor force participation. Women may be less motivated to enter the labor force if they feel there are limited employment opportunities (that is, discouragement). For instance, women living in localities where female unemployment rates are higher are less likely to participate in the labor force (an increase of the regional female unemployment rate of 1 percent decreases the probability of a woman participating by almost 1 percent). On the contrary, in regions where unemployment rates among men are higher, women tend to display higher rates of participation. This is explained because women’s reservation wages decrease if men in the household are idle, thus making it necessary for the household to get additional sources of income (an increase in the regional male unemployment rate of 1 percent increases the probability of a woman participating by almost 1 percent).



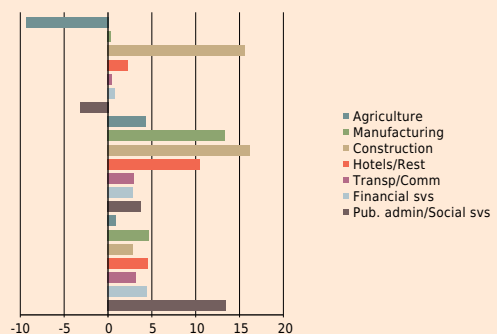
Although the Tunisian economy has been able to create jobs for the growing labor force, employment growth has not been enough to absorb all new entrants (nor to reduce the large stock of unemployed) and jobs have mostly been of low quality. Despite positive employment growth, there is an average annual net employment deficit of approximately 18 thousand jobs affecting disproportionately young highly skilled workers in urban areas (figure 1.7)<sup>5</sup>. In fact, employment creation has been concentrated in low-productivity activities and many of the jobs created for high-skill workers are of rather precarious quality (as discussed in Chapter Five). With few exceptions (that is, telecommunications and financial services), employment creation has been concentrated in low value added sectors, such as construction, trade, and non-financial services (figure 1.8). Construction, manufacturing, and services (economic activities that display high informality rates—as documented below) have been the main sectors for employment for low- and semi-skilled workers.

**Figure 1.7:** Employment Growth, 2005-2010, and Yearly Employment Deficit, 2007-2010



Source: Authors' calculations using the Tunisia Labor Force Surveys 2005, 2007 and 2010

**Figure 1.8:** Net Yearly Employment Creation by Industry, 2007 and 2010

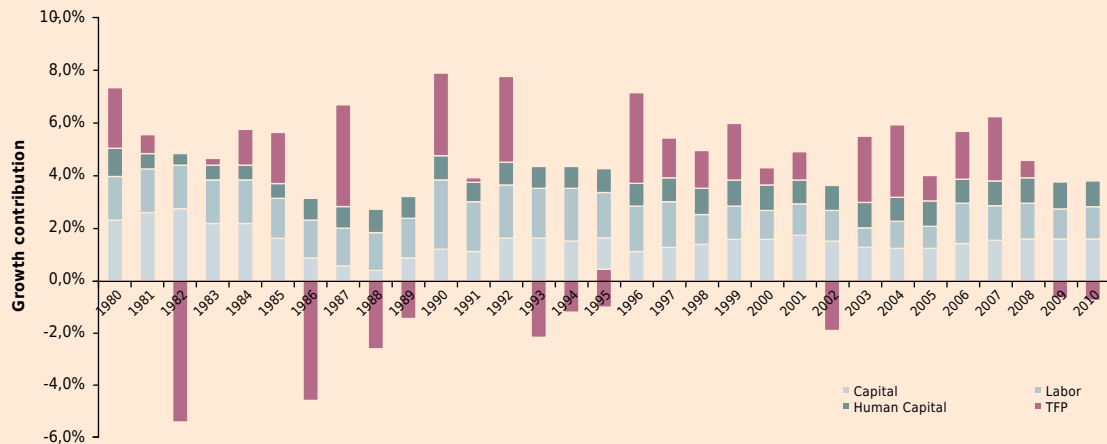


### **An Economy Affected by Low Productivity, Distortions, and Misallocation of Resources**

While most U-MICs experienced an economic take-off during this period, Tunisia was crippled by the failure to adapt its development model. An analysis of the decomposition of GDP growth highlights that Tunisia's growth over the past two decades was largely driven by factor accumulation, with only a small contribution from improvements in Total Factor Productivity (TFP)<sup>6</sup>. Hence, although as discussed above the levels of investment and employment remain insufficient, their increase accounts for most of the growth over the past two decades, suggesting the existence of shortcomings in the economy. Between 1990 and 2010, accumulation of capital and labor contributed on average 36 percent and 35 percent to growth, respectively<sup>7</sup>. Only the remaining 28 percent of growth can be attributed on average to improvements in Total Factor Productivity (TFP). This corresponds to an average annual TFP growth rate of approximately 1.3 percent, which is low when compared to fast growing countries<sup>8</sup>. This is important because TFP growth ultimately increases the demand for labor. Further, controlling for human capital, the growth contribution of capital, labor, and human capital in Tunisia becomes 36 percent, 35 percent, and 22 percent respectively, such that contribution of improvement in TFP shrinks to an

average 5 percent over the last two decades (figure 1.9)<sup>9</sup>. In other words, once we account for the improvement in the quality of the labor force, we find that productivity improvements have been very limited over the past two decades.<sup>10</sup>

**Figure 1.9:** Growth in Total Factor Productivity (with Human Capital-Adjusted Labor), 1980-2010



Source: INS; authors' calculations

Higher productivity growth is important because it implies greater wealth creation per capita, which results in more jobs creation and creation of better quality jobs (box 1.2). An economic growth strategy entailing large factor accumulation is appropriate when a country has a large stock of untapped human resources, such as is the case for Tunisia. Productivity growth, however, is required to generate more wealth per capita and ultimately faster jobs creation. The rate of TFP growth is a good indicator of the overall efficiency of the economy—it measures the improvement in the use of these factor inputs. Low TFP growth suggests the existence of barriers that prevent a reallocation of resources towards more productive activities and hamper the economy’s capacity to generate wealth and jobs. Increase in TFP (that is, efficiency improvements in the use of factor inputs) can take place within a given production activity or sector, or can be the result of a reallocation of resources across sectors.

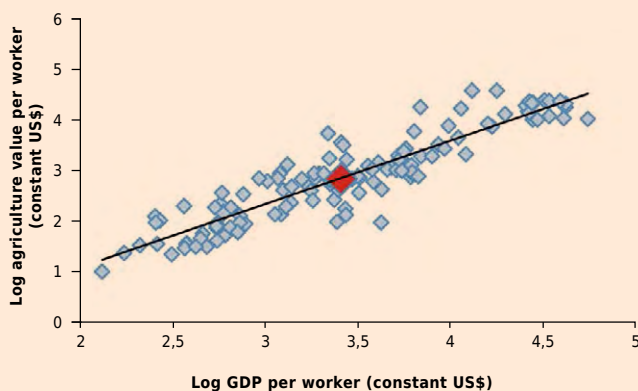
**Box 1.2: What is Productivity and Why Does It Matter?**

Productivity is a key driver of wealth and jobs creation. We can think of economic growth as the result of the accumulation of human and physical capital—that is, more (high-skill) jobs, and more investment—and increased “productivity.” Productivity shows how well people combine resources to produce goods and services. For countries, it is about creating more from available resources—such as raw materials, labor, skills, capital equipment, land, intellectual property, managerial capability, and financial capital. Higher productivity is therefore synonymous with higher production, higher value creation, and higher incomes. As a result, the higher the productivity of a country, the higher the living standards it can afford and the more it can improve the wellbeing of its citizens (for example, through healthcare, education, roads and telecommunications, security, and a stronger social support for people who need it). At the aggregate (economy-wide) level, productivity also brings more jobs and better quality jobs, as it stimulates additional growth in income and output to generate overall employment growth and for firms to pay better salaries.

Contrary to more advanced economies, developing countries tend to be characterized by large differences in productivity across sectors. Productivity gaps persist in developing countries across sectors and even across firms (Hsieh and Klenow 2009). As mentioned, these productivity gaps may be indicative of misallocation of resources. Large productivity gaps across sectors suggest that reallocation of workers from low-productivity to high-productivity sectors can be an important driver of growth<sup>11</sup>. In fact, in many high-growth countries, in particular in Asia, re-allocation of workers across sectors has contributed positively to growth during the last twenty years (McMillan and Rodrik 2011).

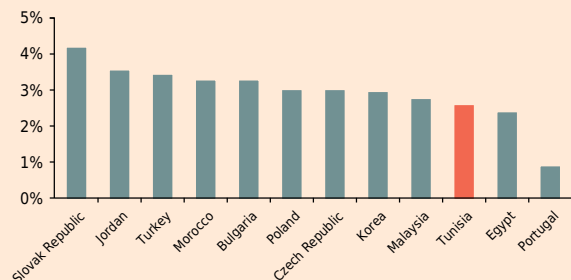
While Tunisia displays fairly large differences in productivity across sectors, it has surprisingly only a small productivity gap between manufacturing and agriculture, which underscores the low productivity of Tunisian manufacturing. This agriculture-manufacturing gap is very low in Tunisia compared to other countries<sup>12</sup>. In 2005, labor productivity in manufacturing in Tunisia was only 1.7 times higher than in agriculture—this is even lower than the 2.3 gap in Sub-Saharan Africa and much below the 2.8 in Latin America and 3.9 in Asia (McMillan and Rodrik 2011)<sup>13</sup>. Although the productivity of the agricultural sector in Tunisia is in line with that of other countries (figure 1.9), what is noteworthy is the low productivity of the manufacturing sector. In most developing countries, agriculture is the sector with the lowest productivity; however, in Tunisia manufacturing is not much more productive than agriculture, and in fact the textiles sector is less productive than agriculture<sup>14</sup>. As discussed below, this reflects the fact that with some notable exceptions manufacturing in Tunisia tends to focus on simple assembly and other low value added activities, which in turn explains the low quality of jobs. In a sense these findings capture the essence of the problem with the Tunisian economy.

**Figure 1.10:** Tunisia's Agricultural Productivity in International Comparison, 2009



Source: World Development Indicators (WDI); author's calculations.  
 Note: The red dot represents Tunisia.  
 Note: The measure of output per worker includes the impact of improvements in capital stock and in human capital

**Figure 1.11:** Output per Worker Average Annual Growth Rate, 2000-2010



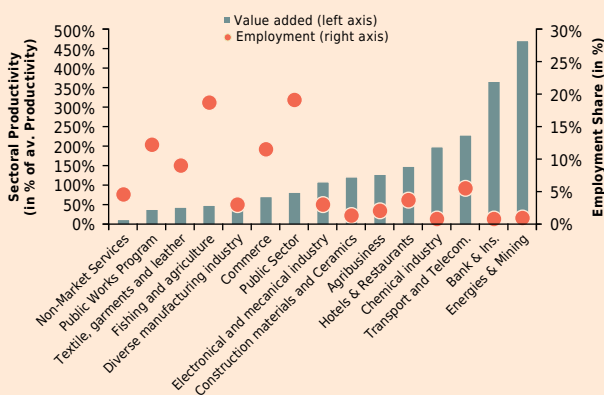
Source: World Development Indicators (WDI); author's calculations.  
 Note: The red dot represents Tunisia.  
 Note: The measure of output per worker includes the impact of improvements in capital stock and in human capital

Tunisia’s labor productivity remains low, and Tunisia has been losing ground with respect to benchmark countries over the past decade. The growth in output per worker (which we use as a proxy of labor productivity throughout this report) was around 2.5 percent on average in Tunisia over the past decade, below most benchmark countries in MENA (such as Jordan and Morocco) and take-off countries in the EU and Asia (figure 1.11). The low labor productivity reflects the production structure of the Tunisian economy, which is centered on low value added activities and low quality jobs<sup>15</sup>. It is worth noting, however, that wages increased by 2.1 percent on average during 2000-2009 (ILO 2011), below the increase in labor productivity over the period<sup>16</sup>. The wage restraint increased the competitiveness of Tunisian firms in labor-intensive products, notably assembly activities<sup>17</sup>.

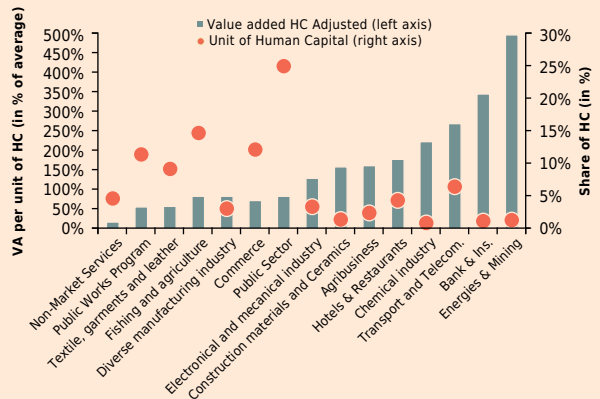
As much as 77 percent of Tunisia’s workforce is employed in low-productivity sectors. Low-productivity sectors here refer to sectors with below average productivity, which in 2009 included agriculture, textiles, most manufacturing sectors, commerce, the public sector, construction, and public infrastructure (figure 1.12). High-productivity service sectors—such as banking, transport, and telecommunications—absorbed only 7.7 percent of total employment. The share of workers in low-productivity sectors is high when compared to other developing countries<sup>18</sup>. Controlling for human capital reveals an even more profound misallocation of human capital (figure 1.12). In 2009, as much as 75 percent of Tunisia’s human capital-augmented labor was employed in sectors with below-average productivity, with 24 percent in public administration. Further, this pattern has persisted, with only minimal reallocation across sectors over time—and what reallocation has taken place has been largely from low-productivity agriculture into low-productivity manufacturing.

**Figure 1.12:** Sectoral Labor Productivity and Employment in 2009

a) Output per Worker



b) Output per Units of Human Capital



Source: Authors’ calculations based on INS National Accounts and Enquête Nationale des Entreprises-ENE.

Note: Public works programs refers to construction and public infrastructure

Note: In the graph of the right hand side, the units of human capital are calculated as the weighted average of the number of employees, where the weights are determined by their years of education and the annual return to education. We use information from the ENE to determine the share of workers with primary, secondary and university degree to make these calculations. The left axis compares the sector value added as a share of human capital (HC) to the average value added as a share of HC. The right axis shows the sectoral share of HC (such that all the red dot values sum up to 100%).

### **Limited Structural Change, 1990-2010: An Economy Stuck in Low-Productivity Activities**

To assess how much structural transformation has contributed to Tunisia's growth in the past, we carried out a different decomposition of GDP per capita growth. In order to explore the dynamics of the Tunisian economy we decompose GDP growth in the contribution of changes in the demographics, the level of employment and the level of productivity growth (box 1.3)<sup>19</sup>. The latter can then be further divided into two additional components: changes in sector level productivity ("within" component) and changes arising from a reallocation of labor between sectors ("across" component), which measures the speed of structural change in the economy<sup>20</sup>.

#### **Box 1.3: GDP Decomposition and the Measurement of Structural Change in the Economy**

One of the key insights of development economics is that growth is driven by a structural shift from agriculture to the industrial sector. This process of structural change tends to be mirrored in the pattern of employment so that over time the labor force in the nonagricultural sector increases while employment in the agricultural sector declines (Kuznets 1967). As labor moves to the industrial sector, overall productivity rises and incomes expand. Reallocation of workers from one sector to another is hence an important aspect of economic development. Recent research highlights that as much as 85 percent of the international variation in aggregate Total Factor Productivity (TFP) can be attributed to differences in the relative efficiency across sectors, underlining the importance of enabling a dynamic economic environment (Chanda and Dalgaard 2008).

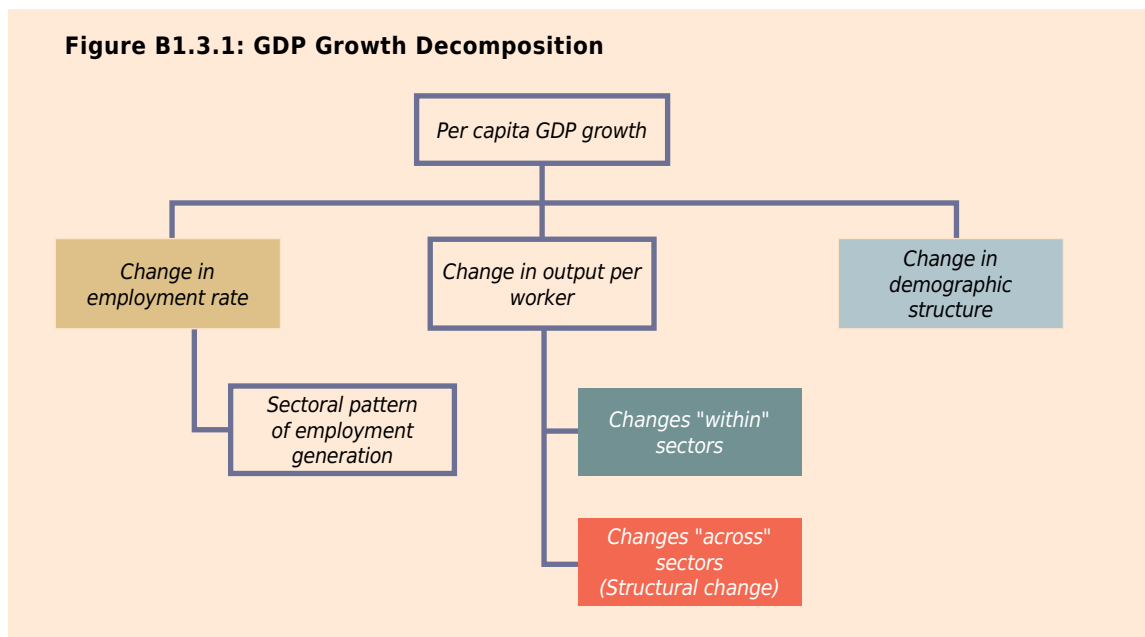
Reflecting the observation above, GDP per capita growth can be decomposed into the following components: (a) change in employment rate, (b) change in labor productivity (which we proxy by looking at change in output per worker), and (c) change in demographic structure. Each of these components is important in its own right: the employment rate and the demographic structure components reflect the change in the number of jobs, while the productivity component captures the change in the value creation of those jobs, which normally reflects the wages and quality of jobs. Labor productivity can be decomposed further into two additional components: changes in sector level productivity ("within" component) and changes arising from a reallocation of labor between sectors ("across" component). Using the Shapley decomposition (Shorrocks 1999), this can be written as:

$$\Delta y_t = \sum_N \frac{S_{i,t} + S_{i,t-k}}{2} \Delta y_{it} + \sum_N \frac{y_{i,t} + y_{i,t-k}}{2} \Delta S_{it}$$

where  $\Delta Y_t$  is the change in aggregate labor productivity between  $t$  and  $t-k$ ,  $\theta_{it}$  is the employment in sector  $i$  at time  $t$ , and  $y_{it}$  is the productivity level in sector  $i$  at time  $t$ . The first term is the "within sector" component, and the second term the "across sectors" component. The latter is a measure of how reallocation of labor has contributed to Tunisia's growth in the past, that is, the contribution of structural change to growth. Similar decompositions have been used in World Bank (2009b). An alternative methodology for decomposing labor productivity has been proposed by Pages (2010) and McMillan and Rodrik (2011) and is discussed in the DPR background report on "Tunisia's Structural Transformation: Evolution of Productivity, Employment and Exports" (World Bank 2014d).

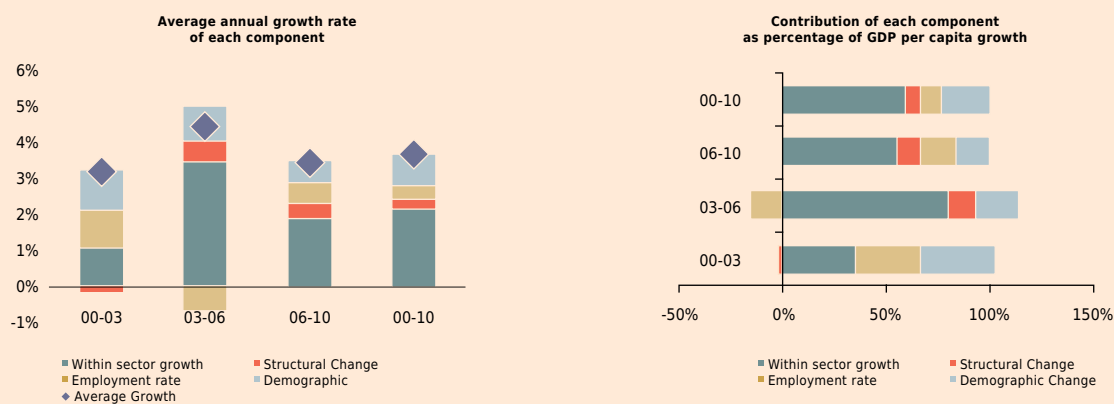
It should be highlighted that at the sectoral level the "within" component should also be considered as a measure of the profitability of the sector in that it measures the return to resources invested in that sector per unit of labor. While we use this as a measure of higher productivity, however, it can also reflect the ability of firms to extract rents from consumers. Similarly, it is important to underline that not all structural change is good. For example, productivity may be higher in sectors with monopoly power, and a reallocation to these sectors would contribute positively to structural change but would not necessarily promote growth or enhance welfare (for a more detailed discussion, see Lederman and Maloney 2012).

**Figure B1.3.1: GDP Growth Decomposition**



Demographic change and increased employment account for one-third of growth over the past decade. As mentioned above, Tunisia witnessed a rapid increase in working-age population over the past two decades (figure 1.4). This demographic change, measured as the growth in working-age population as a percent of total population, contributed about 23 percent to real per capita growth over the period 2000-2010 (or 0.8 percent to annual GDP growth per capita; figure 1.13). Similarly, although the rate of unemployment decreased only marginally, the economy has done quite well in terms of absorbing its youth bulge. Between 2000 and 2010, active population as a share of working-age population increased from 49.6 percent to 51.1 percent as the unemployment rate decreased marginally from 15.7 percent to 13.3 percent<sup>21</sup>. The change in the “employment rate” component contributed 10 percent to growth per capita over the period 2000-2010 (or 0.4 per year; figure 1.13).

**Figure 1.13: Contribution of Demographics, Employment, and Productivity to GDP Growth Per Capita in Tunisia, 2000-2010**

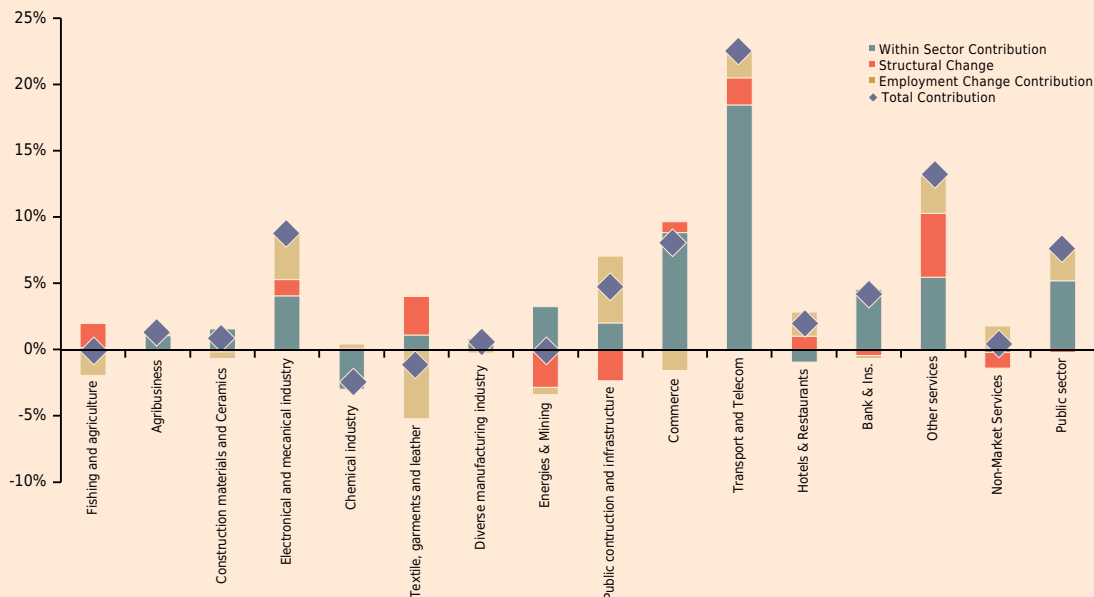


Source: Authors' calculations based on INS National Accounts and ENE.

The results confirm that the Tunisian economy has been characterized by low productivity and limited structural change over the past decade. Decomposing output per worker in its “within” and “across” components highlights that between 2000 and 2010 the contribution of structural change to economic growth has been positive but weak. As mentioned above, labor productivity increased at a rate of 2.5 percent per year, contributing roughly 68 percent to GDP growth between 2000 and 2010<sup>22</sup>. Most of this productivity growth took place “within” sectors, accounting for 60 percent of real GDP growth per capita over the period (or 2.2 percent per year; figure 1.12). Structural change, the reallocation of labor from low-productivity to high-productivity sectors, contributed only 8 percent to the change in real GDP per capita between 2000 and 2010 (or 0.4 percent per year; figure 1.13). For comparison, Macmillan and Rodrik (2011) calculated that during 1990 to 2005 the “within” component in China; Hong Kong SAR; India; Malaysia; Mauritius; Taiwan, China; and Turkey ranged from 7.8 percent per year to 1.7 percent per year, while the structural change component accounted for between 1.4 percent per year to 0.4 percent per year (figure 1.13). They also found, however, that in many Latin American and Sub-Saharan African countries “structural change” between 1990 and 2005 has been negative, depressing economic growth (McMillan and Rodrik 2011).

These results indicate that the Tunisian economy has been unable to efficiently reallocate resources from low-return to high-return activities but also highlight that, despite some reallocation of resources having taken place, the entire economy appears to have remained in a low-productivity conundrum. This means that the economy operates below potential, which is reflected in the relatively low rate of GDP growth and insufficient and low quality jobs creation. Performance was even weaker when we consider that our measure of productivity is inflated by the expansion of the public sector. A large share of our measure of productivity therefore simply reflects the increase in the size of the public administration: there is not a real increase in productivity but just an increase in public expenditures<sup>23</sup>.

**Figure 1.14:** Sectoral Contribution to GDP Growth in Tunisia, 2000-2010

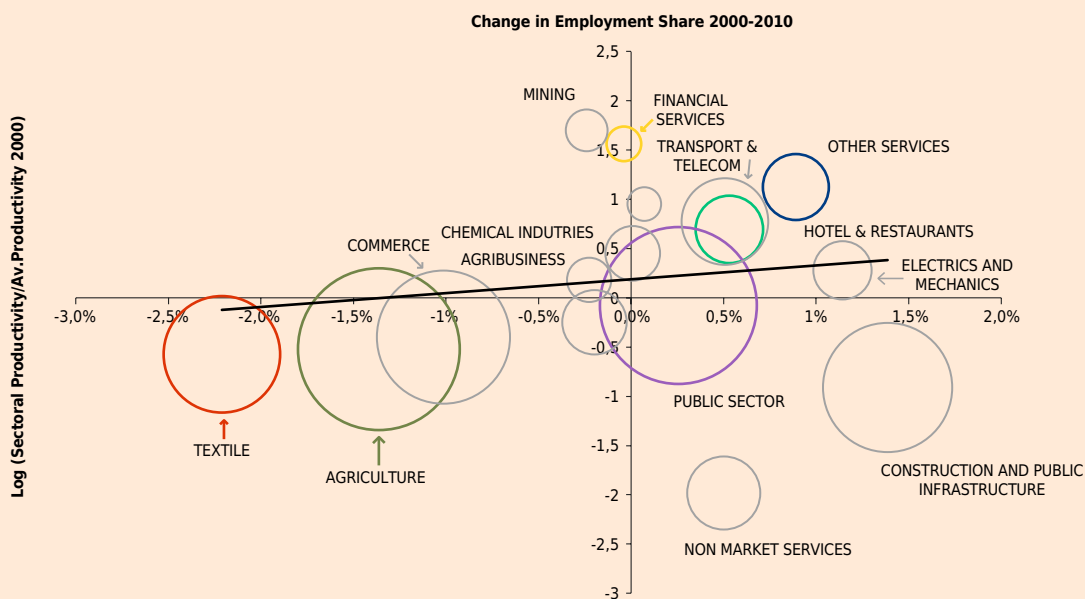


Source: INS; authors' calculations

Further, an analysis of GDP decomposition at the sectoral level highlights that our measure of productivity is inflated by the monopolistic profits in the transport, telecommunications, and commerce sectors. Performance was also lower when we consider that at the sector level productivity appears to have increased the most in transport, telecommunications, and commerce (figure 1.14), largely reflecting the rents which exist in these sectors as a result of the barriers to entry—only a few companies have been licensed to operate in these sectors, which in fact were primary targets of Ben Ali’s clan (see Chapter Three)<sup>24</sup>. As will be discussed in Chapter Two and in Chapter Three, the limited competition in these sectors allows incumbents to charge exorbitant prices to Tunisian consumers (and firms), in a sense syphoning off wealth creation from the rest of the economy.

The overall contribution of manufacturing to growth has been weak, lacking productivity and employment growth. In line with our previous discussion, the sectoral GDP growth decomposition also confirms that the contribution of manufacturing to growth has been weak overall, lacking both in productivity and employment growth. In fact, the average productivity of the manufacturing sector remains very low and not much greater than the agricultural sector. Overall labor productivity growth in the manufacturing sector contributed only 0.9 percent per year to real GDP growth per capita between 2000 and 2010. About half of this productivity growth can be attributed to the “within” component which contributed 5 percent in total to Tunisia’s GDP per capita growth over the period 2000-2010; the structural contribution accounts for 4.3 percent. Its employment contribution was negative, largely driven by shedding of jobs in the textile sector, which struggled to remain competitive after the phasing out of the multi-fiber agreement in 2005 (figure 1.15). The manufacturing sector with the highest productivity growth was the electronics and mechanical industry where productivity increased by 30 percent over this period. Productivity of the chemical sector shrank by 33 percent over this period<sup>26</sup>.

**Figure 1.15:** Sectors and Structural Change in Tunisia, 2000-2010



Source: INS; authors’ calculation  
 Note: The circles represent the sectoral employment shares in the year 2000.



#### Box 1.4: Tunisia's Offshore-Onshore Dichotomy

Tunisia's economic environment is characterized by a stark differential treatment of exporting and non-exporting firms. Already in the early 1970s Tunisia embraced an export-led growth strategy and instituted a special tax regime favoring exporting companies. This dual regime was consecrated in the 1993 Investment Incentives Code. While the Code has undoubtedly been successful in attracting foreign investors and boosting exports and served Tunisia well in the initial stages of industrialization after independence, the dual economic system is at the core of the shortcomings of Tunisia's economic model (see Chapter Four).

The Investment Incentives Code distinguishes between "fully exporting" or "not fully exporting" firms, commonly referred to as "offshore" and "onshore" enterprises. Fully exporting firms benefit from tax exemptions on profit and income taxes during the first ten years of their activity, a 50-percent reduction for another ten years, and full tax deduction for reinvested profits. The state also grants duty-free access to all inputs and equipment. It also often provides the necessary infrastructure and assumes employers' social security contributions during 5 years. These firms also benefit from streamlined customs procedures, corresponding to significant costs savings since the local administration is complex, unpredictable, and burdensome. A fully exporting enterprise may sell up to 30 percent of its turnover in the domestic market. Anecdotal evidence indicates that few enterprises choose this option, since the fraction of the production sold on the domestic market is exempt from the offshore benefits. This implies that the fraction sold on the domestic market is not only taxed under the general tax regime but also subject to standard local administrative procedures. Not fully exporting enterprises can export their production; however, enterprises are often split into two distinct entities: one dedicated to the onshore market and the other fully exporting. Imported intermediate goods required for these exports are exempt from import taxes if the corresponding exports take place within a three-month period. This results in costly administrative procedures, such as obtaining specific certificates of corresponding imported and exported goods from the customs officers confirming that they have actually seen the goods. As a result, domestic companies that start to export tend to divide themselves into two distinct entities: one dedicated to the onshore market and the other under the fully exporting offshore regime.

Offshore firms account for just over half of all exporters (52 percent) but almost three-quarters (72 percent) of all exports. Twenty-three percent of exporters are foreign-owned, and these are largely offshore firms. Roughly 6 out of every 10 offshore firms are in fact domestically owned. Although not all offshore firms are foreign and not all foreign firms are offshore, approximately 45 percent of all offshore firms (8,261 out of 18,211 offshore firms) are foreign, while only 1.8 percent of all firms are foreign owned, indicating that the offshore sector is an FDI magnet. Foreign offshore exporters account for 37 percent of all exports, thereby accounting for just over half of all offshore exports (recall that total offshore exports account for 72 percent of all exports;  $0.37/0.72=0.51$ ). Offshore firms accounted for roughly 33 percent of all wage employment in 2010, even though only 6 percent of all firms that offer wage jobs are registered as offshore firms. (Freund, et al. 2013).

As discussed in detail in Chapter Four, the offshore-onshore dichotomy imposes high costs on the economy. First, the manufacturing sector is considered important for economic growth since it tends to have strong backward and forward links with other sectors of the economy. The offshore-onshore dichotomy has weakened those links. Second, it weakens the dynamic links between the domestic market and the export sector. The export industry could play an important role in supporting the development of a network of domestic suppliers and incentivizing local innovation, but this does not happen in Tunisia due to the segmentation between the two regimes. Also, a vibrant domestic market is often considered a driving force for the export industry (Porter 1990), but instead segmentation keeps the onshore sector stuck in low productivity and low growth. Further, the complex administrative burden associated with the regime opens the door for corruption (see Chapter Three).

Only a few sectors contributed positively to structural change. Labor moved from textile, commerce, and agriculture toward transport and telecommunications, hotels and restaurants, electronics and mechanical industry, and other services (which includes business services). This structural change contributed positively to productivity as it entailed a contraction in below-average productivity sectors, which in turn enabled employment gains in sectors with above-average levels of productivity and better quality jobs (figure 1.15). That said, as mentioned above, the overall rate of structural change was limited. Comparing Tunisia's structural change with that of selected countries also confirms the low contribution of its manufacturing sector as well as its financial and business services (annex 1.4).

Overall sectors dominated by offshore firms had on average weak "within" productivity growth, while sectors dominated by onshore firms have been characterized by rents extraction. In order to explore the differences in performance between onshore and offshore sectors (box 1.4; see also Chapter Four for a detailed analysis of the onshore-offshore dichotomy), we carried out a growth decomposition distinguishing between sectors where more than 60 percent of firms are totally exporting (which we consider as prevalently "offshore sectors" and which to a large extent are confined to the manufacturing sectors) and other sectors (which we consider as prevalently "onshore sectors"). As expected, prevalently offshore sectors had on average weak "within" productivity growth over the past decade, reflecting the fact that offshore firms have largely remained focused on low value added manufacturing and assembly activities. Overall the offshore economy reduced employment without increasing productivity. The positive structural change in this sector is therefore unlikely to be the result of labor shedding toward more productive sectors, but rather reflects a possible loss of competitiveness. On the other hand, the prevalently onshore sectors show a large "within" contribution to growth. As discussed above, this reflects the rents extracted in key onshore sectors as a result of market access restrictions which allow only a few privileged firms to operate in these markets (see Chapter Two and Chapter Three). Structural change was negative in the onshore economy as high-productivity service sectors, such as financial intermediation services, shed labor and low-productivity sectors, such as enterprises services, absorbed them.

In sum, the Tunisian economy appears stuck in a low-productivity conundrum which is reflected in the limited and low quality jobs creation. The analysis of structural change highlights an economy that is performing weakly, as reflected in relatively low productivity growth and employment generation, because of the characteristics of the economy. On the offshore side (i.e. for the exporting firms) the low productivity is the result of a sector mainly focused on low value added and assembly activities for the EU. On the onshore side (i.e. the firms producing for the domestic market), rents extraction by the privileged cronies has undermined the growth of the rest of the economy. To make matters worse, the lack of structural change highlights an economy that lacks dynamics toward a more productive model.

### ***Tunisia's Feeble Export Performance, 1990-2010***

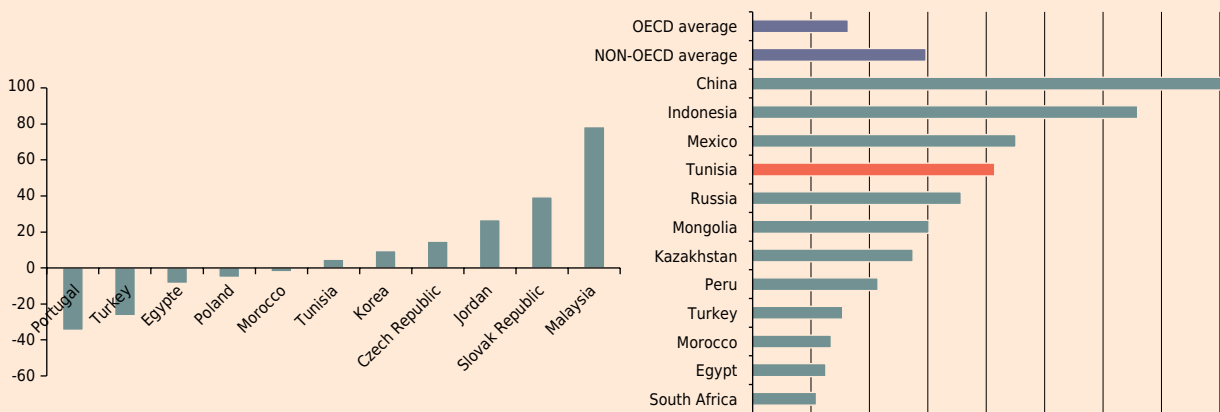
As a small economy with limited natural resources, Tunisia's trade integration and export performance are critical to its prosperity. Tunisian companies need to sell to foreign markets in order to expand, enjoy scale economies, and create more jobs. In fact, exporting is a way to expand the demand for locally made products and therefore also the demand for local labor. More generally, exports are another indicator of productivity, since by definition exporters successfully compete against international firms.

Tunisia remains a fairly closed economy, and its export performance has been relatively weak. Although the perception in Tunisia is that the economy is open and relatively well integrated, in

fact compared to benchmark countries Tunisia remains less open (as measured by the share of exports and imports in GDP) and quite protected. Based on GDP per capita, size of population, and whether or not a country is landlocked, Tunisia is less open than fast-growing countries such as the Czech Republic, Malaysia, the Republic of Korea, or the Slovak Republic—but more open than Egypt, Morocco, or Turkey (figure 1.16)<sup>27</sup>. This reflects the discussion in the previous section that most of the onshore economy remains protected and subject to severe market access restrictions (see also Chapter Two). Non-tariff measures remain common and used to protect the domestic market (box 1.5; Augier, et al. 2012). Similarly Tunisia continues to rank very low on the OECD FDI Restrictiveness index, ranking 42nd out of the 51 countries for which the index is available, below the non-OECD average and also well below Egypt and Morocco (figure 1.17 and figure 1.18)<sup>28</sup>.

Tunisia’s governments in the past pursued an export-led growth strategy (through the offshore sector); however, contrary to public perception in Tunisia, export performance has been weak. Tunisian exports growth (in volume) over the past 20 years was the second lowest in the region—just above Jordan—and the worst performer compared to other benchmark countries (figure 1.18). Tunisian exports growth was positive but slower than export growth in many other countries and also slower than Tunisian GDP growth. As a result, Tunisia’s exports as a share of GDP declined from 38 percent to 35 percent over two last decades, which masks an increase during the 1990s and a drop over the past decade. This contrasts with the increase in the share of exports in GDP over the period in all other benchmark countries, except Jordan<sup>31</sup>.

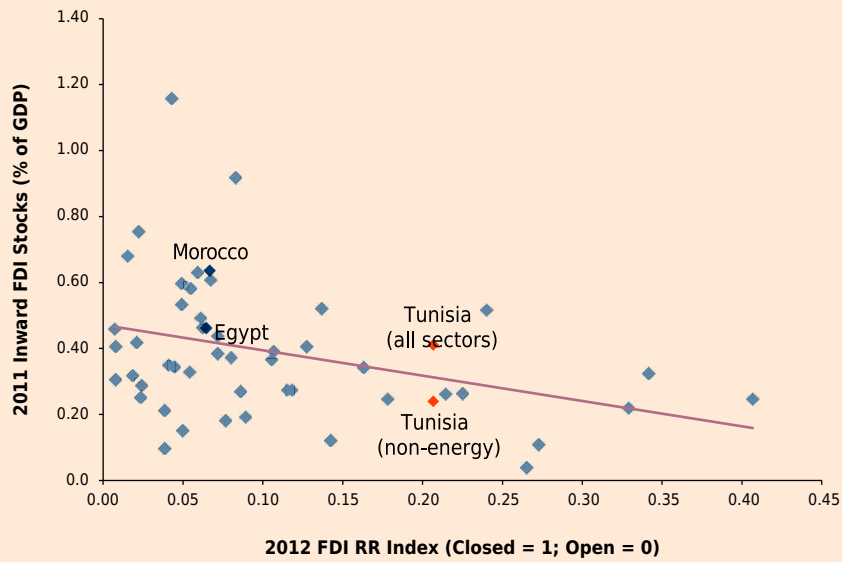
**Figure 1.16:** Degree of “Openness” of Tunisia and FDI Regulatory Restrictiveness Index, 2012



Source: Authors’ calculations based on WDI and data from OECD on the FDI Regulatory Restrictiveness Index.

Note: In the left hand side graph “openness” is calculated as the residual of an OLS regression of the share exports and imports in GDP on log GDP, log population and a dummy for landlocked countries.

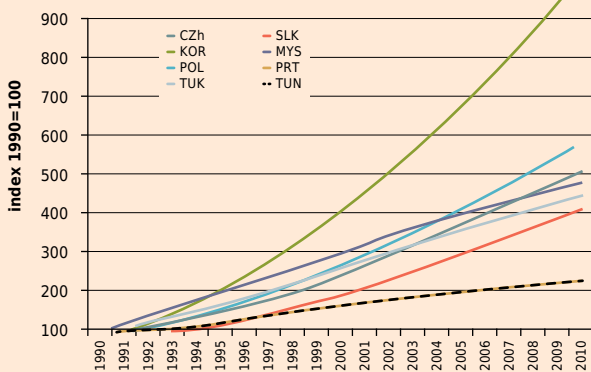
**Figure 1.17:** FDI Inflows and Regulatory Restrictiveness Index, 2012



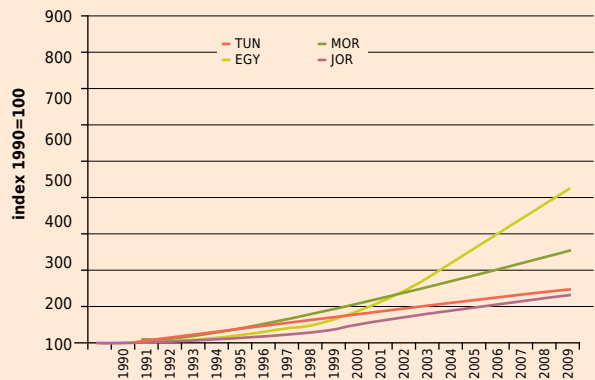
Source: Data from OECD on the FDI Regulatory Restrictiveness Index

**Figure 1.18:** Evolution of Value of Exports of Goods and Services (1990 = 100), 1990-2010

a) Among the benchmark countries (1990=100)



b) Among the regional comparators (1990=100)

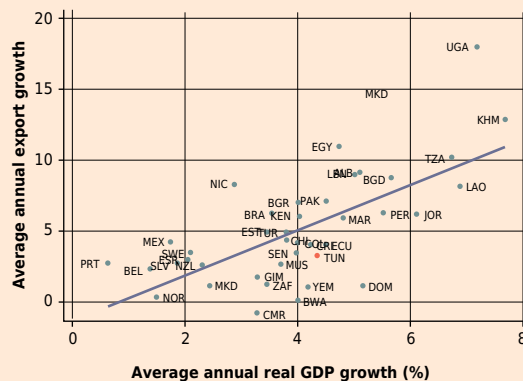


Source: WDI; authors' calculations  
Note: Evolutions in graph have been smoothed with HP filter.

Tunisia's share of goods exports in world trade has been declining in recent years. Between 2002 and 2010, Tunisia's trade share fell slightly while most benchmark countries and all regional comparators increased their export share in the world. Similarly, a regression of GDP growth and export growth in a number of countries shows that Tunisia falls below the regression line (figure 1.19), suggesting that its exports underperformed relative to the rest of its economy and that exports played a smaller role as a driver of growth in Tunisia than in other economies. As discussed below, a plausible explanation for this finding is that exports growth was to a large extent fuelled by imports, with little value addition in Tunisia, reflecting the fact that the onshore-offshore dichotomy attenuates backward links from FDI (see discussion in Chapter Four).

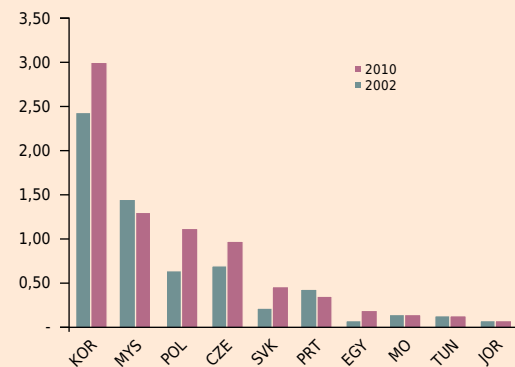
**Figure 1.19:** Tunisia's Exports growth in a Global Context

a) Export Growth and GDP Growth, 2000/2010



Source: Exporter Dynamics Database; Authors' calculations

b) Evolution of Goods Exports as Percentage of World Exports between 2002 and 2010



Source: WITS Comtrade; authors' calculation

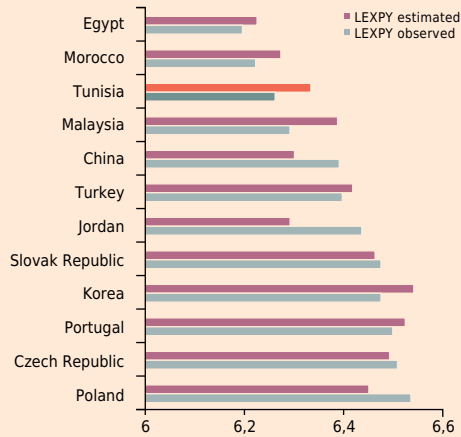
### Low Sophistication and Value Added of Tunisia's Exports

Tunisia's export sophistication is low compared to benchmark countries and has increased only slightly over the past decade. Even when controlling for GDP per capita, Tunisian sophistication of exports is significantly below what would have been predicted by its level of income, as measured by an observed EXPY of 6.26 against an expected EXPY of 6.33 (figure 1.20)<sup>32</sup>. Additional measures of export sophistication also confirm that technology intensity and the skill intensity of Tunisia's exports have increased only slightly over the past decade<sup>33</sup>. The slight improvement reflects the fact that Tunisia has increased its exports of goods in high-tech sectors—notably the recent increase in export of electronic appliances and the decline in textile related exports largely explains Tunisia's increase in EXPY<sup>34</sup>. In fact, as discussed below, these exports are largely only assembled in Tunisia, with little value addition and improvement in productive capacity.

The above measures of export sophistication are likely misleading, since they focus on the final exports and ignore the fact that the value added of Tunisian manufacturing exports has remained extremely low. The above measures of export sophistication say little about the domestic value added of an export good. Domestic value added does not so much depend on the good in itself but how (and how much of) the good is produced in a given country<sup>35</sup>. In other words, looking at exports of goods says little about the domestic net value added created at home. Using input-output tables for individual G7 countries, the value added of exports has been estimated to be approximately 70-80 percent and decreasing over time (Hummels, Ishii, and Yi 2001; NRC 2006). Conversely, estimates of value added of exports from countries heavily engaged in processing trade (for example, China) are on the order of 50 percent (Koopman, Wang, and Wei 2008). Using the same methodology, we calculate that the

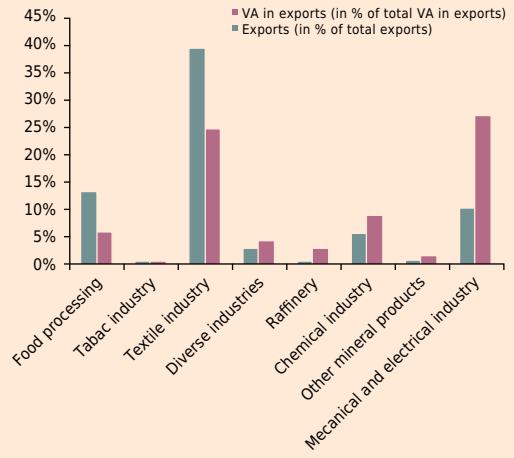
value added to exports ratio of Tunisian exports was only 33 percent in 2009<sup>36</sup>. This compares to a ratio of 43 percent for the Czech Republic and 38 percent for Hungary (Johnson and Noguera 2012).

**Figure 1.20:** Expected vs. Actual EXPY in 2009 in Tunisia and Benchmark Countries



Source: WITS Comtrade; authors' calculation

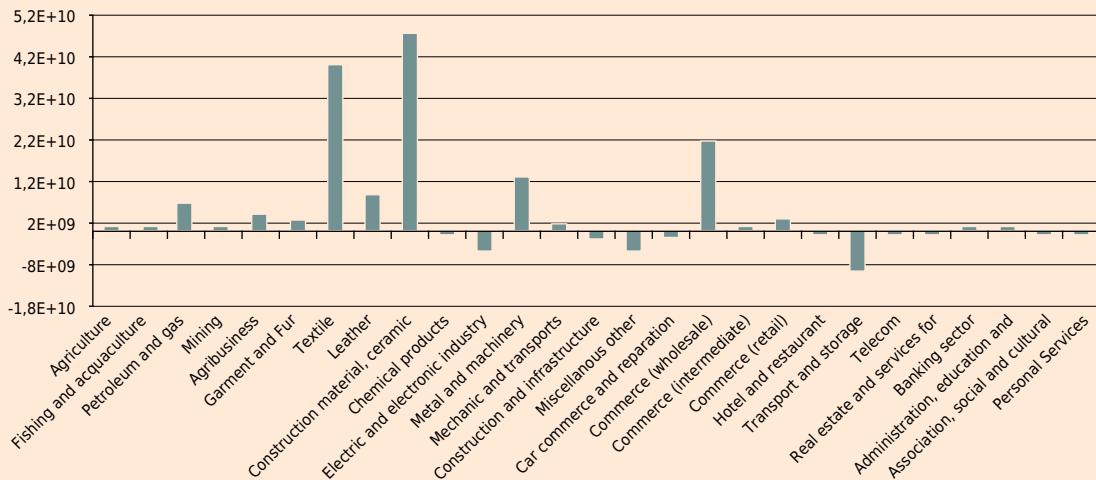
**Figure 1.21:** Value Added in Tunisia, by Export Sector



Source: WITS Comtrade; authors' calculation

More than half of Tunisia's exports are final goods, many of which are only assembled in Tunisia. There has been only a slight increase in exports of intermediate goods to some extent reflecting the increase in mechanical and electrical components. Although transport, real estate services, and telecommunication sectors create an important part of value added, their net exports are low (figure 1.21). It is chemical products, textiles, garments and leather, and the mechanical and electrical industry that contribute the most value added in export—as shown above, however, the contributions of these sectors to overall value added is very low (figure 1.22).

**Figure 1.22:** Net Exports by Sector in Tunisia, 2007



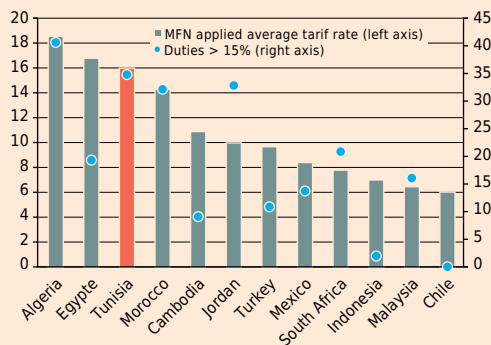
Source: Exporter Dynamics Database; Authors' calculations

### Box 1.5: Lukewarm Trade Integration Brings Lukewarm Results: Contrasting the Experience of Reforms in Tunisia with That of the Central European Countries

Eastern European countries cut tariffs and reduced non-tariff barriers at an early stage of their transition process in the 1990s and underwent drastic liberalization reform of their economies. Trade reforms were only one part of the comprehensive reforms package implemented by these countries. They implemented broad institutional and structural reforms that included domestic deregulation, some privatization, and other macroeconomic adjustments. Further, many of these economies were able to integrate in the EU. These countries now enjoy a liberal trade environment that supports their industries and has resulted in rapid increases in exports and incomes per capita.

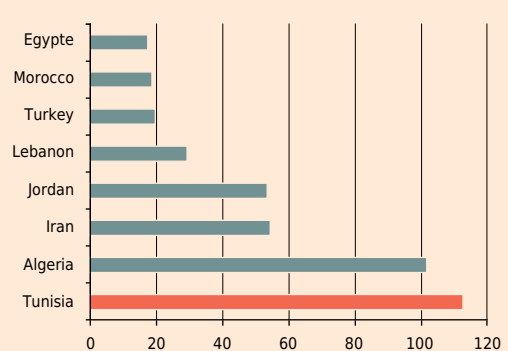
In contrast, despite the trade reforms since the mid-1990s, Tunisia's tariff structure and degree of openness remains very restrictive. Tariff reforms gradually reduced the average "most favoured nation" (MFN) tariff (calculated as the simple mean of MFN duties level at the HS 6-digits level) from 30 percent in 2002 to 16 percent in 2011; however, Tunisia's average tariff remains one of the highest among comparable countries. Tunisia also has one of the largest binding overhangs (calculated as the difference between the bound and applied MFN rates) in the MENA region and among WTO member countries and a high share of MFN applied tariff lines greater than 15 percent (at the HS 6-digits level). In fact, while tariffs have been gradually reduced, non-tariff barriers have become more prominent. Tunisia has relatively low non-tariff measures (NTMs) frequency and coverage ratios, but it has highly complex NTMs formalities (Augier, et al. 2012)<sup>i</sup>. It still has a high level of pre-shipment inspection and para-tariff measures<sup>ii</sup>. Its NTMs composition is closer to that of Uganda than of other emerging countries (which tend to have a higher portion of technical measures that replaced other types of NTMs). Importers in Tunisia spend nine days on average for customs clearance at port, and the share of export subject to inspection reaches 10 percent, placing Tunisia among the lowest performers of the region (see Chapter Four; Hoekman and Zarrouk 2009). Moreover, Tunisia continues to apply several implicit restrictions—such as an import quota on cars—that were to be abolished after the 2008 free trade with the EU and an import survey on products under surveillance, which serves as a de facto authorization for imports. These restrictions are part of the country's complex regulations, which create market distortions, increase costs to Tunisian consumers and firms, and create opportunities for non-transparent

**Figure B1.5.1 Levels of Applied Average MFN Tariff Rate and Share of Tariff Lines Above 15 Percent in 2011**



Source: WTO, World tariffs profiles 2012  
 Note: MFN applied average tariff rate is calculated as the simple average of the ad valorem duty for all products at HS 6-digit. Share of HS 6-digit subheadings subject to ad valorem duties greater than 15 percent. All data are for 2011, except for Jordan which shows 2010 data.

**Figure B1.5.2 Liner Shipping Connectivity Index Rank (out of 159 countries)**

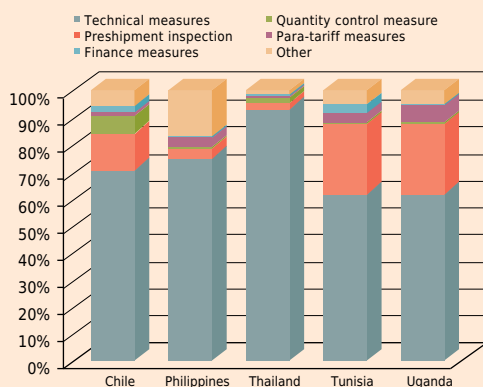


Sources: UNCTAD LSCI 2012  
 Note: The Liner Shipping Connectivity Index (LSCI) of the UNCTAD assesses how well a country is served by container shipping (countries with high activity or hosting shipping hubs have a better rank).

rents and abuse of the regulations (see Chapter Two and Chapter Three). In addition, Tunisia's actual trade costs are estimated to be very high because Tunisia has one of the lowest levels of shipping connectivity in the region. On the contrary, Morocco and Egypt have made large investments in transshipment activities and are among the countries with the best shipping connectivity in the world.

The result of the different speed and depth of trade reforms in the Central European countries as compared to Tunisia is reflected in stark performance differences in exports and income levels. The eight countries that accessed the EU in 2004 (EU8) increased merchandise exports from 26 percent of GDP in 1995 to 57 percent in 2011. Instead, while Tunisia had a higher level of merchandise exports in 1995 at 30 percent of GDP, it experienced much smaller progress—with exports accounting for only 39 percent of GDP by 2011. The process of trade liberalization and economic integration brought rapid growth in the Central European economies, resulting in increase in per capita GDP. For instance, Poland was among the poorest countries (in terms of per capita income) in the region in 1995. It implemented the most drastic and rapid reforms and has now become one of the richest countries in the region. These examples exist also in other parts of the world. Mexico implemented broad structural and regulatory reforms and removed many barriers to investment to accompany the opening up of trade with the United States under the NAFTA agreement. These reforms helped attract FDI during the 1990s and contributed to building Mexico's exports sector. Hence, although Mexico's per capita export level was similar to Tunisia's in the early 1990s, it is now more than double that of Tunisia.

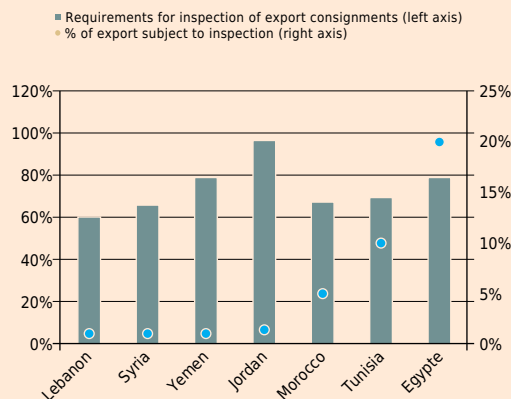
**Figure B1.5.3 NTMs Experienced by Exporting Companies as NTBs (based on ITC/UNCTAD firm survey), (as % of NTBs)**



Source: Data from Mimouni, Averbeck and Skorobogatova, 2009

Notes : (i) Tunisia has a lower frequency index than Morocco, but imposes more than five types of measures on the majority of products under NTMs, against Morocco which imposes only more than two types of measures (Augier, et al. 2012).  
(ii) A firm-level survey conducted by UNCTAD among exporters showed that 63 percent of NTMs in Tunisia are technical measures, while 23 percent are pre-shipment inspection, and 5 percent are para-tariff measures.

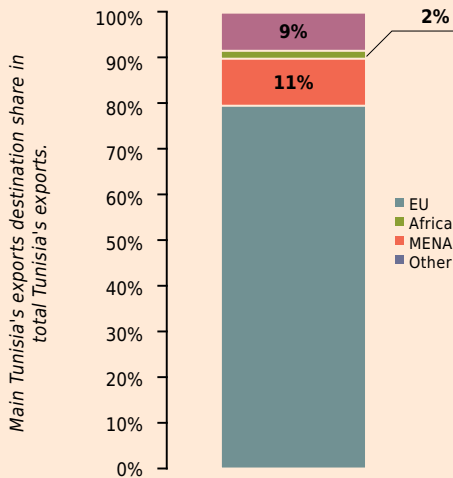
**Figure B1.5.4 Requirement for Inspection of Export Consignments (as a percentage) and Share of Export Subject to Inspection**



Source: Data from firms survey, Hoekman and Zarrrouk 2009.



**Figure 1.23:** Tunisia's Exports Concentration by Country, 2007



Source: WITS Comtrade; authors' calculations

**Table 1.4:** Tunisia's Exports and Imports Shares by Destination, 2007

	EU	MENA	Africa
Share of Tunisia's exports in region's imports	0.23%	0.25%	0.09%
Share of region's import in Tunisia's exports	79%	11%	2%

Source: WITS Comtrade; authors' calculations

Note: The year 2007 has been chosen as it is prior to the global financial crisis.

The value added of export sectors with a high share of high technology goods tends to be low in Tunisia, confirming that the sophistication of exports remains limited. Food processing, followed by the textile sector, has the largest domestic value added but does not produce any high technological products nor employ high skilled workers (figure 1.22). On the contrary, the mechanical and electrical industry is the manufacturing sector contributing the smallest share to value added, despite the fact that this sector seems to produce a relatively large part of high technological products<sup>37</sup>. This observation is consistent with the anecdotal evidence that Tunisia has mainly attracted assembly tasks in the value chain of sophisticated goods. The chemical sector exports the largest share of high technological products but domestic value added accounts for only 22 percent of production. In sum, while Tunisia's exports appear to have started to diversify into more sophisticated products, in fact largely only the assembly of these products is carried out in Tunisia and hence there is no real improvement in the sophistication of the production structure.

Tunisia's exports are concentrated on very few countries, reflecting the fact that a large share of Tunisian exports consists of goods assembled for France and Italy. Geographic diversification of exports has been very limited, with the EU absorbing nearly 80 percent of Tunisia's exports and within the EU France and Italy accounting for nearly 50 percent (figure 1.23 and table 1.4)<sup>38</sup>. This structure of exports is consistent with the reality of the Tunisian economy. In a sense Tunisia does not "produce" its manufacturing exports—it assembles them for or to France and Italy. Companies in these countries have outsourced the assembly tasks and other low value added tasks to Tunisia, taking advantage of

the very favorable offshore tax regime and the availability of cheap low-skilled human resources. This is not a problem in itself; however, the challenge is that the Tunisian economy has been unable to move beyond the assembly and low value added processes. As discussed in Chapter Four, this is largely the result of the duality between onshore and offshore sectors. The difference in tax regimes, combined with the heavy bureaucratic burden and limited competition in the onshore sector, discourages offshore companies from interacting with (and purchasing or selling intermediate inputs from or to) onshore ones, resulting in the segmentation of the economy and the lack of links and spillovers between these two parts of the economy. This means that the exporting offshore sector uses fewer intermediate inputs "made in Tunisia," contributing to keeping the Tunisian economy limited to low value added and assembly tasks, and offering mainly low quality jobs.<sup>39</sup>

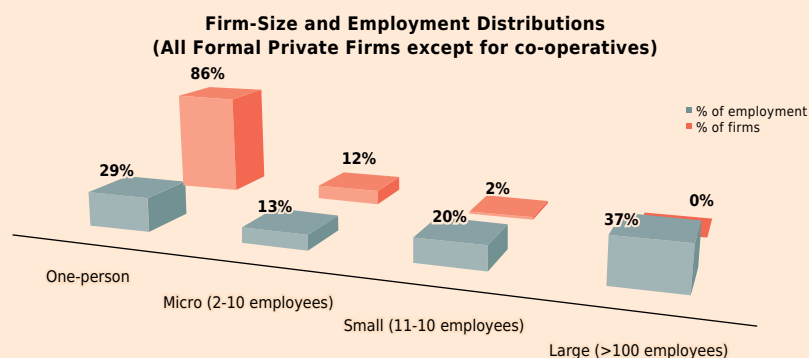
## 1.2 / Private Sector Paralysis: Firm Dynamics in Tunisia<sup>40</sup>

The limited dynamics of the economy at the macro level suggest that the performance of Tunisian private sector firms in terms of job creation, productivity, and exports growth is weak. In this section we examine the performance of Tunisian private firms in terms of job creation, productivity, and exports growth, which will pave the way to identify policy levers to promote employment creation and growth. We first focus on arguably the most salient policy issue, notably job creation, by examining which firms create the most jobs. Subsequently, we examine the drivers of productivity growth, arguably the most important determinant of income and jobs creation in the long run. Finally, we analyze Tunisian firms' trade performance and focus on which sectors and which firms have driven exports growth. The analysis of firm dynamics can shed light on Tunisia's jobs crisis, as jobs growth ultimately comes from firms' creation and growth. The analysis allows us to assess whether the process of "creative destruction" is working and driving productivity growth and jobs creation among private firms in Tunisia<sup>41</sup> and can also help us pinpoint problems in the business environment in which firms operate.

### Low Entry of New Firms and Lack of Growth Result in Limited Job Creation

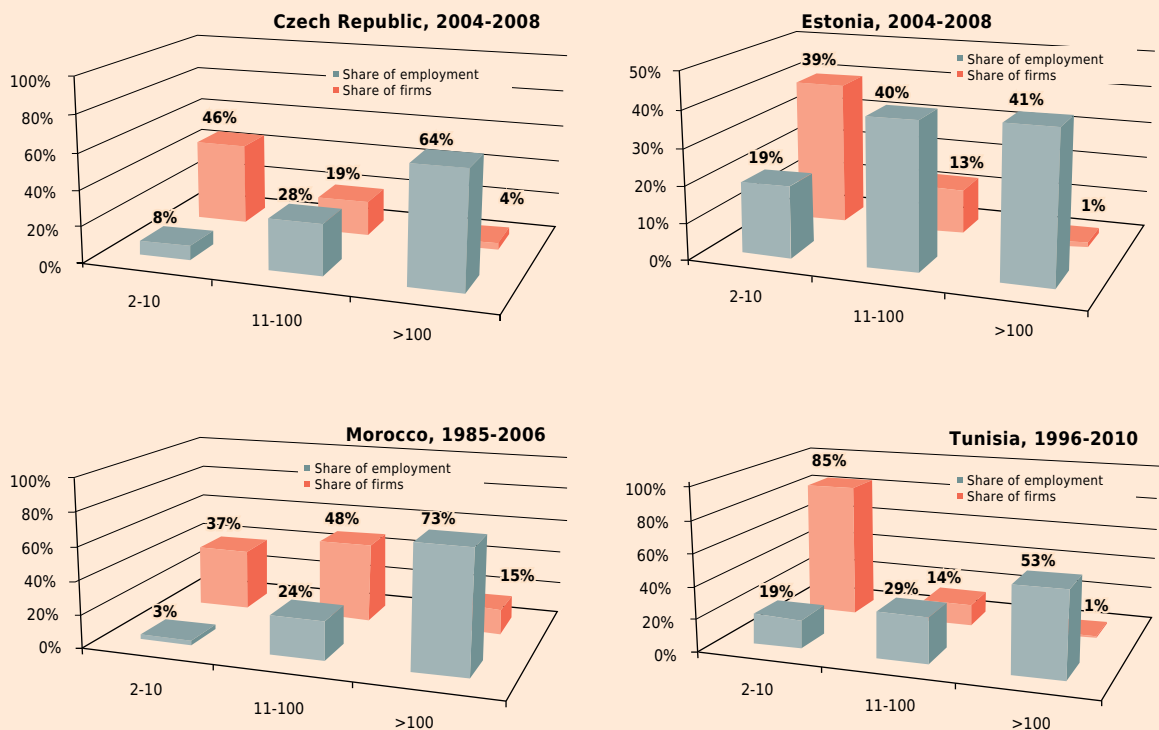
Tunisia's private sector is skewed toward small-scale activities. The distribution of private sector firms by employment size highlights that one-person firms account for the vast majority of enterprises; 86 percent of all Tunisian firms are one-person enterprises (meaning self-employment), and only 0.4 percent of all firms employ more than 100 workers (figure 1.24). These large firms, however, account for more than a third of all jobs in Tunisia, more than all one-person firms combined. Comparing the distribution of firm sizes in Tunisia with that in more developed countries, we find that it is skewed toward smaller firms—in fact, by international standards employment in Tunisia is concentrated in comparatively small firms (figure 1.25)<sup>42</sup>. In other words, the scarcity of medium and large firms appears to be a key explanation for the low level of jobs creation. This observation is confirmed by the analysis of the dynamics of firms' jobs creation (box 1.6).

Figure 1.24: Employment and Firm-Size Distribution, 1996-2010



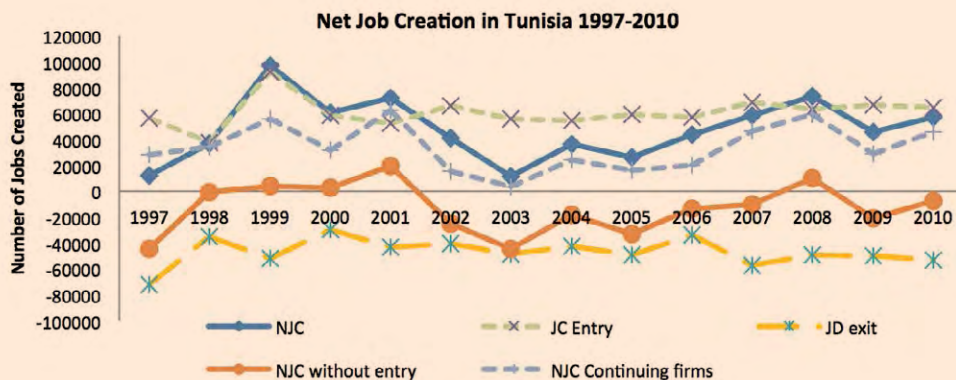
Source: Authors calculations using Répertoire National des Entreprises-RNE.  
Note: One person firms are synonymous with self-employment.

**Figure 1.25:** Employment and Firm-Size Distribution (Excluding Self-Employment) in the Czech Republic, Estonia, Morocco, and Tunisia



Source: Figures for Czech Republic, Estonia and Morocco are from: Hallward-Driemeier, Mary and Reyes Aterido (2014). "Firm Dynamics and Job Creation: Are Gazelles Born or Made?" World Bank, mimeo.  
 Note: Data for Tunisia are the same as presented in Figure 1.23, but we exclude self-employment to allow comparison with the other countries (for which data on self-employment is not available).

**Figure 1.26:** Aggregate Job Creation Patterns

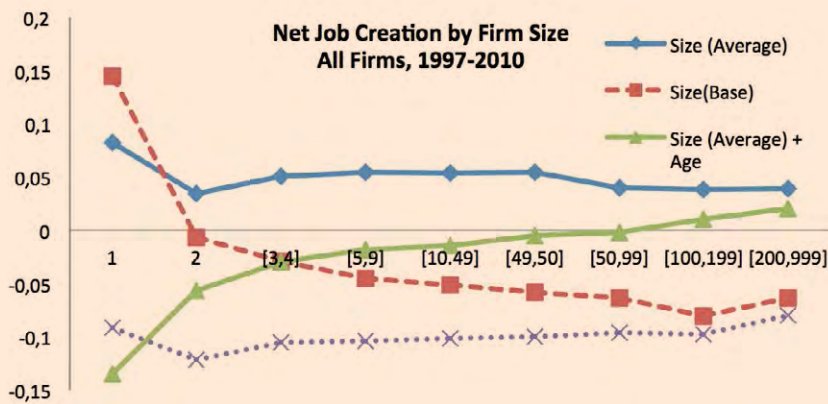


Source: Authors' calculations using RNE

### Box 1.6: Which Firms Create the Most Jobs in Tunisia?

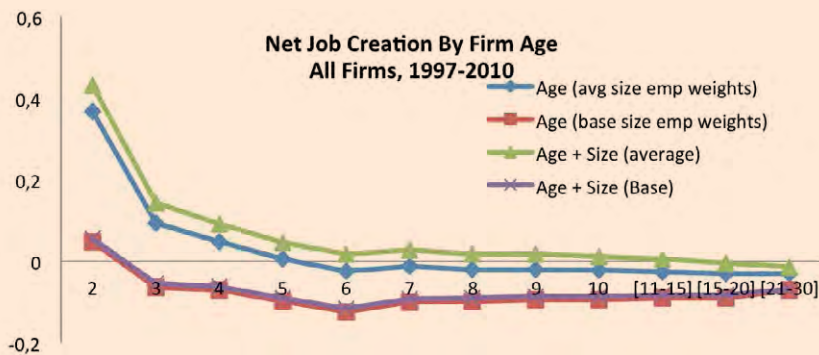
Small firms contribute the least to employment creation in Tunisia (once we account for firm age). Many SME promotion programs are predicated on the notion that small firms create more jobs than larger firms. The results of non-parametric regressions in which we regress firm growth, measured as the change in employment between period  $t$  and  $t+1$ , on firm size and age dummies are presented in the figures below. As shown below, when we control for firm age (the green and purple lines), the relationship between firm size and growth shows that small firms contribute the least to employment creation. In other words, small firms grow because they are young, not because they are small. In fact, young firms consistently record the highest rates of net jobs creation. Further the results indicate that, all else being equal, large firms create more jobs than do small firms. Promoting more entry would thus not only result in more job opportunities in the short run but would also likely generate more jobs in the medium run, since young firms grow faster than older firms. Promoting entry of large firms would pay a double dividend since large firms create more jobs from the get-go, and also have superior dynamic performance and jobs creation over time.

Figure B1.6.1: Net Job Creation by Firm Size



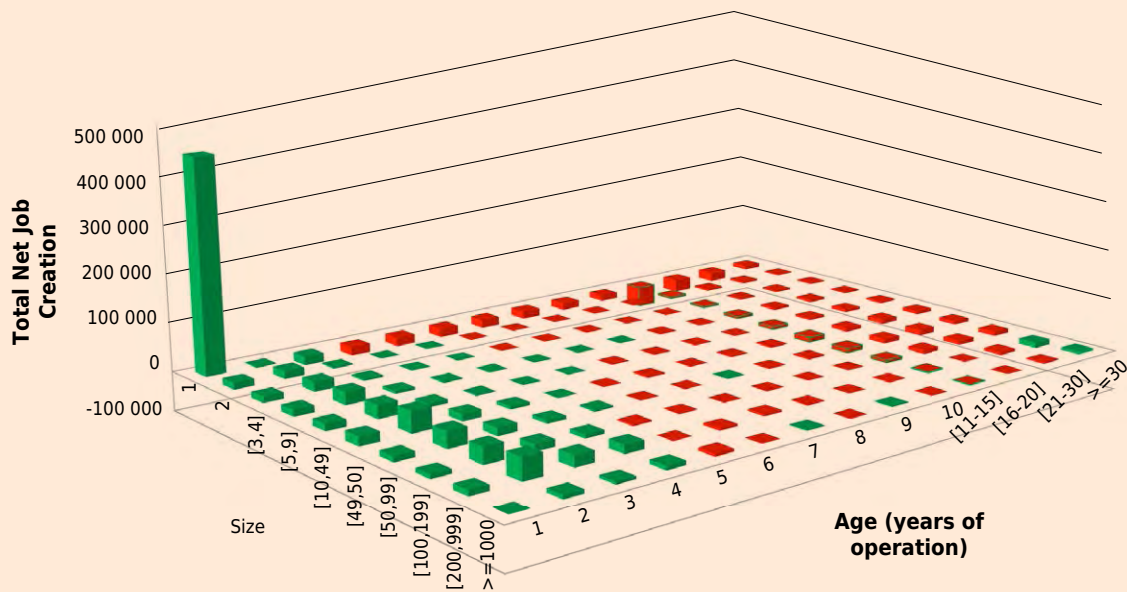
Notes: The dependent variable is the Davis-Haltiwanger-Schuh growth rate, which allows for an integrated treatment of the contributions of entering, continuing and exiting firms. The regressions are weighted and control for industry and year effects; the resulting coefficients are thus interpretable as conditional average net job flows. To minimize the impact of measurement error, we base our size dummies on average size categories. Since we have more than 7 million observations, all size category variables are significant at the 0.01 percent significance level.

Figure B1.6.2: Net Job Creation by Firm Age



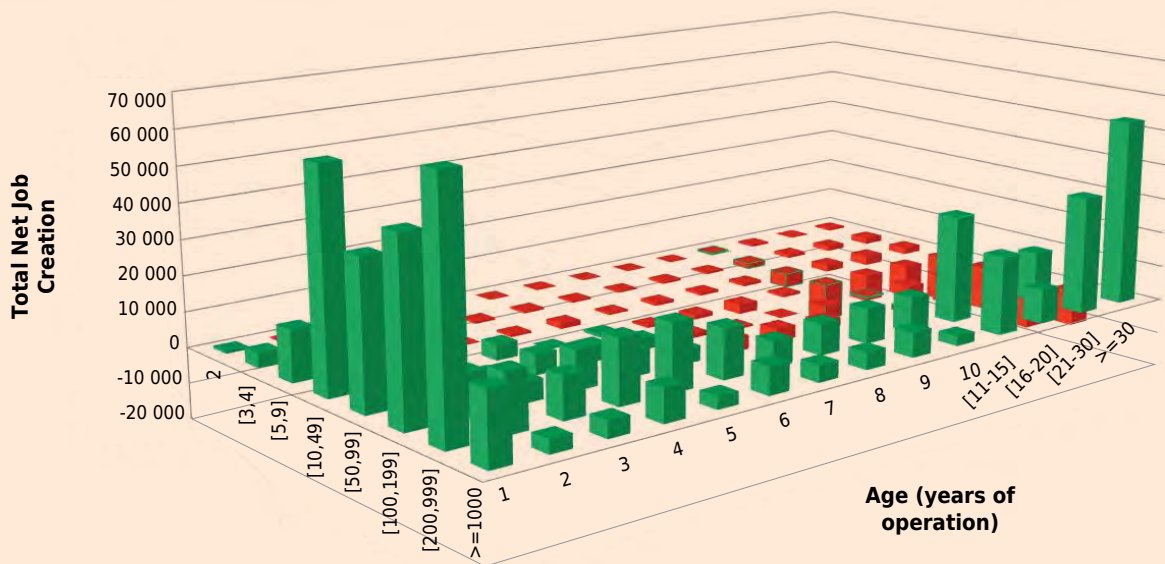
Notes: The dependent variable is the Davis-Haltiwanger-Schuh growth rate, which allows for an integrated treatment of the contributions of entering, continuing and exiting firms. The regressions are weighted and control for industry and year effects; the resulting coefficients are thus interpretable as conditional average net job flows. To minimize the impact of measurement error, we base our size dummies on average size categories. Since we have more than 7 million observations, all size category variables are significant at the 0.01 percent significance level. Source: Rijkers, et al. (2013).

**Figure 1.27:** Net Job Creation in Tunisia by Firm Size and Age, 1997-2010 (Green=positive, Red=negative)



Source: Authors' calculations using RNE.

**Figure 1.28:** Net Job Creation in Morocco by Firm Size (but Excluding Self-Employment) and Age, 1985-2006, (Green=positive, Red=negative)



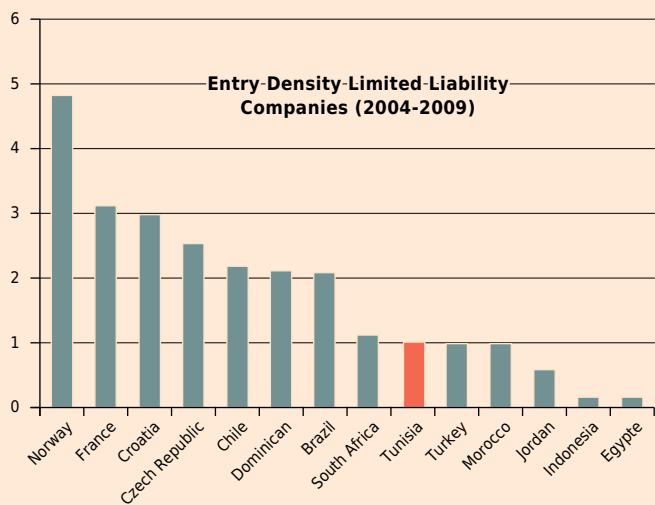
Source: Hallward-Driemeier and Aterido (2014).  
 Note: Excludes self-employment

Aggregate job creation has been highly disappointing and driven mostly by entry of one-person firms (self-employment). An analysis of net job creation over the period 1997-2010 decomposed into the contributions of entering firms, exiting firms, and continuing firms shows that most of the net new jobs (with the exception of 2001) were created in entering firms (figure 1.26). In fact, without these entrants, net new job creation over the period would have been negative. However, the bulk of net job creation is driven by entry of one-person firms, which accounts for 74 percent of all net new job creation. Annual average job creation patterns by firm size and age over the period 1997-2010 show that the contribution of start-up self-employment clearly dominates the contribution of all other groups of firms and is in fact larger than the sum of all other groups combined (figure 1.27). Furthermore, subsequent to entry, one-person firms on average exhibit far less growth, such that the net contribution to job creation of one-person firms is much more modest. Nonetheless, half of all net new jobs created between 1997 and 2010 were in self-employment. It is also interesting to note that across size classes net job creation is typically concentrated among the youngest firms: after approximately four years, firms on average start to shed labor. In fact, once we account for firms' age, we find that young firms create the most jobs. Other countries in the region show similar patterns of jobs creation. When we look at more dynamic and rapidly growing economies, however, much more of the net jobs growth takes place at the larger end of the firms' size distribution (figure 1.28; also annex 1.5 shows net jobs creation dynamics in Chile, the Czech Republic, Estonia, and Germany). It therefore appears that the lack of entry (and growth) of new medium and large firms is at the root of Tunisia's weak jobs creation (box 1.6).

Job creation is hampered not only by limited entry but also by a lack of (upward) mobility; very few firms grow both in the short and the long run. Aggregate net job creation rates show that post-entry job creation is low on average (figure 1.27). In principle this need not be inconsistent with high dynamism; low average job creation could mask a combination of both rapid expansion of a group of successful firms and high exit rates of less successful firms. Alternatively, low job creation could reflect stagnation across the board. To unveil which mechanism accounts for the disappointing net job creation numbers, we examine the transitions of firms between broad size-classes (table 1.5). The top panel in table 1.5 presents evidence on annual size transitions, whereas the bottom panel presents transitions between 1996 and 2010, the longest period available in our database. The matrices show the proportion of firms in a particular size class moving into another size class one year and, respectively, fourteen years later. The table reveals that most firms do not grow, even in the long run. Staggeringly few firms change size class, even during a fourteen-year period; one-person firms (the registered self-employed) are least likely to expand into a larger size class, and very few micro and small firms ever grow large. For example, only 2 percent of all firms employing between 10 and 50 people in 1996 employed more than 100 workers by 2010.

Entry rates other than self-employment are very low—in other words, the creation of new firms in Tunisia is very low compared to rates observed in other countries. The entry density of limited liability companies suggests that Tunisia enjoys lower entry rates than in advanced countries and many other developing countries (figure 1.29)<sup>43</sup>.

**Figure 1.29: Firm Entry Rates in Various Countries, 2004-2009**



Source: Klapper and Love 2010. Note: Entry density measures the number of newly registered limited liability firms per 1,000 working-age people (between ages 15-64).

**Table 1.5:** Employment Transitions

<b>EMPLOYMENT TRANSITIONS</b>								
<b>Short-Run: Annual Transitions (1996-2010)</b>								
Size in year <i>t</i>	Size in year <i>t</i> +1							
	Exit	1	[2-5]	[5,9]	[10,49]	[49,99]	[100,999]	>=1000
1	6.51	91.98	1.34	0.10	0.06	0.01	0.01	0.00
[2-5]	8.16	7.82	79.61	3.93	0.44	0.02	0.01	0.00
[5,9]	6.91	1.30	14.18	68.75	8.71	0.10	0.04	0.00
[10,49]	3.79	0.90	1.80	8.76	80.51	3.73	0.49	0.00
[49,99]	2.72	0.61	0.43	0.50	16.04	67.84	11.84	0.01
[100,999]	1.83	0.37	0.21	0.26	1.91	8.31	86.56	0.56
>=1000	1.59	0.00	0.14	0.14	0.14	0.14	11.56	86.27
<b>Long-Run: 1996-2010</b>								
Size in 1996	Size in 2010							
	Exit	1	[2-5]	[5,9]	[10,49]	[49,99]	[100,999]	>=1000
1	59.25	37.81	2.45	0.31	0.15	0.01	0.02	0.00
[2-5]	53.36	15.59	25.44	4.29	1.21	0.05	0.07	0.00
[5,9]	53.69	2.59	14.64	18.07	10.21	0.53	0.27	0.01
[10,49]	46.54	2.18	5.71	9.69	28.93	4.92	2.02	0.02
[49,99]	43.42	1.77	2.65	1.87	18.96	19.16	12.18	0.00
[100,999]	38.11	1.17	1.93	1.17	7.37	10.30	38.44	1.51
>=1000	18.75	0.00	0.00	0.00	3.13	0.00	37.50	40.63

Source: Authors' calculations using RNE

This is a clear symptom of the country's difficult business environment that prevents firm entry (or exit) and hence distorts the process of creative destruction, which would lead to faster productivity growth, investment, and jobs creation. It should be noted, however, that these entry rates (of limited liability companies) may not be good proxies for overall entry rates in the economy<sup>44</sup>.

The transition matrices also show that overall exit rates seem quite low, perhaps in part due to the limited competition (see Chapter Two) and complex bankruptcy procedures (see Chapter Six). While low exit rates help preserve job opportunities, they are also indicative of limited competitive pressure and a lack of dynamism. In other words, unproductive firms are somehow able to remain active in the market and feel no pressure to improve their performance. Keeping low performance firms indefinitely in operation, however, should not be interpreted as a positive feature—although jobs in incumbent firms are not lost, new and better performing firms are unable to enter and grow and thereby create even more and better quality jobs.

In sum, the lack of net job creation that underpins Tunisia's disappointing aggregate unemployment numbers does not appear due to excessive job destruction but rather reflects limited entry, especially of large firms, and a lack of upward mobility (limited firms' growth). These patterns of firm mobility, entry, and exit are at odds with the existence of an up-or-out dynamic observed often in developed countries in which entrants tend either to survive and grow or to exit.

Overall these findings are indicative of the existence of severe restrictions to market access and barriers to competition, which hinder the growth of new and existing productive firms (see Chapter Two)<sup>45</sup>. Removing market barriers and promoting more entry would thus not only result in more job opportunities in the short run but also likely help generate more jobs in the medium run, since young firms grow faster than older firms.

### ***Weak Relationship Between Firms' Productivity, Profitability, and Employment Creation***

Firm growth is only very weakly correlated with profitability and productivity—pointing toward severe barriers to competition and weaknesses in the reallocative process. Given the limited upward mobility, it is important to examine which firms are able to expand employment and what might be the impediments to firms' growth. The results of regressions indicate that productive firms and more profitable firms expand employment faster, but the relationship between productivity, profitability, and employment creation is weak. Although our proxies for productivity and profitability may suffer from substantial measurement error, taken at face value our estimate suggests that doubling output per worker is associated with only 1 percent to 5 percent higher employment growth. Similarly, moving up a decile in the profitability distribution (by sector and year) is associated with an acceleration of employment growth of approximately only 1-2 percent<sup>46</sup>.

Offshore firms grow faster—because they are larger, younger, and foreign owned and they export and import. For a limited number of years, notably 2006-2009, we observe whether or not firms are foreign owned and whether or not they are in the offshore sector. Despite the 2008-2009 trade collapse due to the global crisis, offshore firms consistently outperform onshore firms in terms of net job creation (table 1.6). The superior job creation performance of offshore firms is not in itself due to being in the offshore sector, but is instead due to offshore firms being larger, younger, and more likely to be foreign owned and to export (table 1.6).

Firms that both import and export grow the fastest. When we interact importing and exporting dummies, we find that firms that both import and export grow the fastest. This finding underscores the importance of linking into global value chains and resonates with a large literature on exporting firms that finds that such firms tend to be more productive and more likely to grow. That said, importing firms appear to be performing extremely well. This could be the result of benefiting from exclusive licenses for importing and distribution-retail of goods in the domestic markets, which enabled rents-extraction by cronies of former president Ben Ali (see Chapter Three). Put differently, the superior job creation by importing-only firms may be a symptom of a privileged access to import licenses. Alarming, this systematic preferential treatment has survived the 2011 revolution, and import activities remain highly vulnerable to corruption.

In sum, our results on firm dynamics are consistent with the findings of structural stagnation at the macro level: firm entry and exit are very low, and mobility is extremely limited and only weakly correlated with productivity. The fact that firm growth is only very weakly correlated with profitability and productivity points to the existence of barriers to competition and severe weaknesses in the reallocative process. We also find that offshore firms are the best performers, largely because they are larger, younger, foreign owned, and actively trading<sup>47</sup>. That said,



importing-only firms appear to be performing extremely well, possibly reflecting the rents associated with licenses for the import and distribution-retail of goods in the domestic markets (which was largely a privilege granted to cronies of the former president Ben Ali).

**Table 1.6:** Net Job Creation and International Orientation

**Net Job Creation and International Orientation**  
**OLS Regressions**  
**Dependent Variable: DHS growth measure**

<b>Average Size</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Offshore	0.074	0.021	-0.054	-0.050	-0.095	-0.055
Foreign		0.115	0.046	0.052	0.046	0.046
Exporting				0.046	0.006	-0.042
Importing					0.091	0.080
Exporting*Importing						0.053
Firm Size Dummies	No	No	Yes	Yes	Yes	Yes
Firm Age Dummies	No	No	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Activity Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Source: Authors' calculations using RNE

Notes: The dependent variable is the Davis-Haltiwanger-Schuh growth rate, which allows for an integrated treatment of the contributions of entering, continuing and exiting firms. The regressions are weighted and control for industry and year effects; the resulting coefficients are thus interpretable as conditional average net job flows. Note that since we have more than 400,000 observations, the estimates of the coefficients are typically statistically significant at conventional significance levels and we therefore do not report standard errors.

**Slow Productivity Growth and Persistent Allocative Inefficiency: Evidence from the Manufacturing Sector** <sup>48</sup>

Productivity of Tunisia's manufacturing firms increases with firm size and foreign ownership and is higher in the offshore sector. As discussed in Section One, the productivity of the manufacturing sector is very low, which is reflected in low quality jobs. Average total factor productivity increases with firm size, with the very largest firms being the most productive and the smallest firms being the least productive (figure 1.30). On average, firms that employ more than 200 workers are roughly twice as productive as firms employing between 6 and 9 people. In spite of the fact that larger firms are more productive, however, the data also suggests that allocative efficiency is rather low; high productivity dispersion within size categories is indicative of frictions and distortions. Productivity is also higher in offshore and foreign firms (see also Ghali and Rezgui 2008)<sup>49</sup>. The findings that offshore firms are both larger and more productive even when we control for their size attests to the existence of duality, the segmentation of the economy between the onshore and offshore sectors.

Productivity growth has been stagnant<sup>50</sup>. The evolution of productivity is arguably the most important determinant of income in the long run. In Tunisia, manufacturing sector (agro-food, chemical products, textiles, footwear, electronics, ceramics) growth in total factor productivity (TFP) and output per worker (as a proxy for labor productivity) have stagnated during 1995-2010, with the highest sectoral TFP growth rate being 1.5 percent for firms in the chemical industry and average annual growth rate of less than 1 percent for most sectors (figure 1.31). This compares to around 10 percent growth of output per worker hour in manufacturing in the Czech Republic or around 3 percent

in France during 2000-2007 (Bureau of Labor Statistics 2012). The high correlation between labor productivity and TFP growth reflects the fact that firms did not on average increase the amount of capital per worker; in fact if they had done so, one would see increases in labor productivity over time<sup>51</sup>. Thus, investment into physical capital has been limited. Investments in innovation have been lagging too; according to the *Institut Tunisien de la Compétitivité et des Etudes Quantitatives* (ITCEQ), R&D expenditure accounted for 1.2 percent of GDP in 2009, whereas OECD countries on average spend 2.3 percent of their GDP on R&D (ITCEQ 2010; OECD 2012). The lack of investment is consistent with the lack of firm growth documented above.

Allocative inefficiency persists, as there has been no significant reallocation of resources towards more productive firms. Sectoral

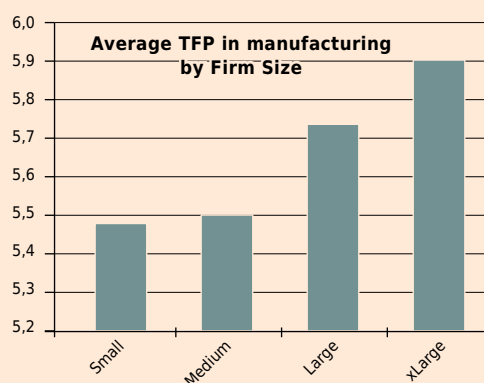
productivity is essentially a weighted average of the productivity of all firms in a sector, with weights corresponding to the market share of each firm. If the most productive firms have the largest market shares, the weighted average productivity will be much higher than a simple unweighted average. The difference between weighted average productivity and (unweighted) average productivity is thus a proxy for allocative efficiency; the larger the difference, the better the market is at allocating resources to firms that use them most productively (see Olley and Pakes 1996). Tracing the evolution of the difference between unweighted and weighted productivity thus enables us to assess to what extent productivity growth has been driven by increase in average firm productivity—the “within” effect—and the reallocation of resources from less to more productive firms—the “between” effect. The evolution of these measures over the period 1997-2007 for various manufacturing sub-sectors shows that the gap between weighted and unweighted productivity is low and has not increased substantially over time (figure 1.32). This suggests that “within” firm productivity growth has been the dominant driver of the limited productivity growth observed in Tunisia over the past decade; by contrast, reallocation of resources from the least productive to the most productive firms has been limited, accounting for roughly only 9 percent of overall growth. This is yet another piece of evidence pointing toward lack of creative destruction and structural stagnation, which are at the root of Tunisia’s feeble economy and low quality jobs creation.

In sum, these results reinforce the evidence of persistent allocative inefficiency in the economy, which resonates with the absence of a strong correlation at firms’ level between employment growth and productivity presented above and also with macro-level evidence showing a lack of structural change (see previous section). It is also consistent with the presence of relatively few large firms. On the positive side, it suggests there is scope for significant growth if distortions that obstruct efficiency can be removed (to enable the reallocation of resources across sectors and the growth of productive firms).

### Firms’ Export Performance

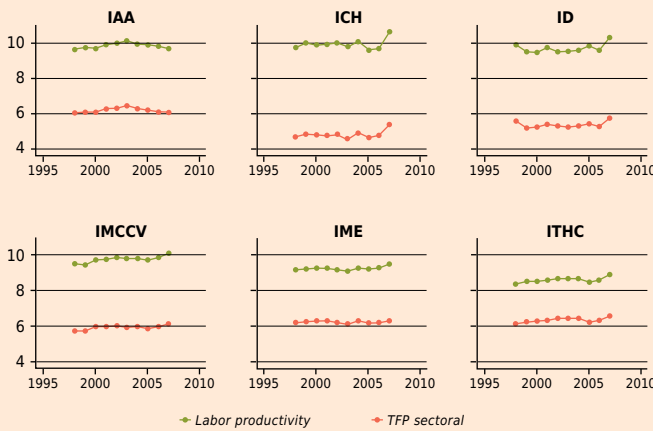
Tunisian exporters tend to operate in sectors with a low average exporter size and are in fact larger on average than their peers in similar sectors in other countries<sup>52</sup>. Econometric analysis shows

**Figure 1.30:** Productivity by Firm Size in Tunisian Manufacturing, 1997-2010



Source: Marouani and Mouelhi (2013). Productivity in Tunisian Manufacturing  
 Note: Small: 6-9 employees, Medium: 10-49 employees, Large: 50-199 employees, Xlarge: >=200 employees.

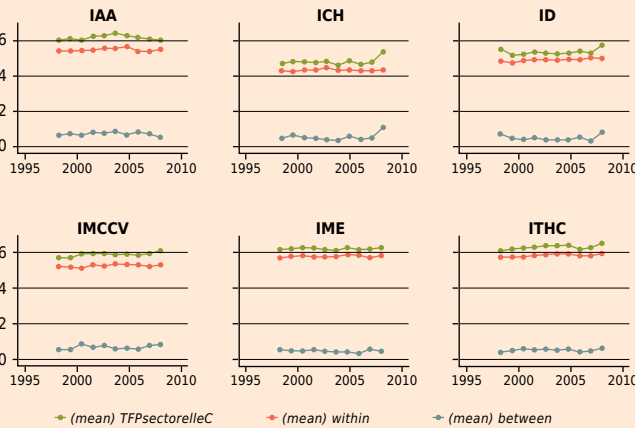
**Figure 1.31: Labor Productivity and TFP Evolution by Manufacturing Activity, 1997-2007**



Source: Marouani and Mouelhi (2013).

Note: Sectors abbreviation: Agribusiness (IAA); Chemical industries (ICH); Diverse industries (ID); Construction material, ceramics and glass (IMCCV); Mechanics and electrics (IME); Textile, Garment and Shoes (ITHC).

**Figure 1.32: Decomposition Overtime of Manufacturing Firms' Production Growth, 1997 - 2007**



Source: Marouani and Mouelhi (2013).

Note: Sectors abbreviation: Agribusiness (IAA); Chemical industries (ICH); Diverse industries (ID); Construction material, ceramics and glass (IMCCV); Mechanics and electrics (IME); Textile, Garment and Shoes (ITHC).

that Tunisian exporters are in fact on average larger when we compare them with exporters in the same sector in other countries (results are presented in the DPR background report on “Private Sector Paralysis: Firm Dynamics in Tunisia,” World Bank 2014b). They are on average seven times larger across all sectors and 14 times if we put greater weight on the sectors in which Tunisia has strong exports. These findings are in line with the observation that the size of private sector firms tends to be smaller on average in Tunisia and suggest that in fact Tunisian firms sort into sectors where firms tend to be small. In Tunisia exports are less concentrated in a relatively small number of “export superstars” than we observe in other countries (table 1.7)<sup>53</sup>. These findings are consistent with evidence that firms were trying to stay below the radar in order to avoid predation by the family of former president Ben Ali (see Chapter Three).

Small exporters are more likely to die and hardly ever grow large; the largest exporters start large. Underpinning these aggregate export dynamics we observe a lot of churning. Table 1.8 shows how firms that exported in 2000 fared ten years later, classifying firms depending on the value of their exports in 2000. It shows that only approximately a third of exporters survived and that the likelihood of export survival increases with the initial volume of exports; the exit rate of firms in the bottom export quartile in 2000 is roughly twice as high as that of exporters in the top 5 percent of the export value distribution. Moreover, it shows that virtually all large exporters (together accounting for the bulk of

all exports) either had been exporting large quantities for a long period of time or had started out exporting large export volumes from the beginning (approximately 26 percent of firms in the top 1 percent in 2010). Qualitatively, these results resonate with those observed for job creation, where we also observed that few small firms ever grow large, that small firms are more likely to die, and that most large firms had already been large for a while.

Foreign, larger, more experienced, and more diversified exporters are more likely to continue exporting. In fact, regressions of export survival (the chance that an exporter exporting in year  $t$  will also export in year  $t+1$ ) show that the probability of export survival increases both with the volume of initial exports and with export experience<sup>54</sup>. Survival chances also increase with the number of products being exported as well as the number of destinations; more diversified firms do better. Interestingly, foreign-owned firms are much more likely to continue exporting

**Table 1.7:** Skew Toward Large Exporters

Export Concentration			
	Share of top exporters in total exports		
	top 25%	top 5%	top 1%
Median of 44 countries	0.98	0.83	0.56
Tunisia	0.95	0.72	0.48

Source: Authors' calculations using RNE

**Table 1.8:** Exports Growth at the Firm Level

Percentile in 2000	Percentile in 2010						
	Exited	0≤Q<25	25≤Q<50	50≤Q<75	75≤Q<95	95≤Q<99	top 1%
0≤Q<25	78.9%	7.8%	7.3%	4.2%	1.4%	0.3%	0.0%
25≤Q<50	72.8%	5.6%	9.2%	8.0%	3.4%	0.9%	0.0%
50≤Q<75	61.4%	2.9%	8.2%	15.0%	11.4%	1.1%	0.1%
75≤Q<95	58.0%	1.4%	2.4%	8.7%	23.4%	5.8%	0.5%
95≤Q<99	36.2%	1.4%	0.4%	2.2%	20.4%	14.4%	5.0%
top 1%	38.0%	0.0%	0.0%	2.0%	7.0%	16.0%	38.0%
Share of New Firms per 2010 quartile that did not exist in 2000		82.3%	73.3%	65.3%	50.9%	35.0%	26.0%

Source: Authors' calculations using RNE

even if we condition on their size. By contrast, being an offshore firm is not in itself correlated with export survival. For surviving firms, exports growth is higher among firms that just started exporting, firms that are able to charge higher unit prices, and foreign firms. The results of these growth regressions therefore also resonate with those observed for net job creation, with the youngest exporters driving growth (albeit that this result is conditional upon survival) and foreign firms outperforming domestic firms, underscoring the importance of attracting FDI.

### 1.3 / Conclusions

The Tunisian economy registered some notable achievements since the 1970s, but has increasingly been stuck in low performance. Since the 1970s Tunisia experienced reasonably good levels of economic growth, one of the fastest in the MENA region, accompanied by rapid poverty reduction. Further, significant public investments in infrastructure and in education have endowed the country with a significant stock of capital and human resources<sup>55</sup>. Nevertheless, as shown by the January 2011 revolution, substantial shortcomings underpinned Tunisia's economic performance. Notably, the economy has been unable to accelerate growth and jobs creation and has in fact remained stuck in low productivity activities. As a result a high level of unemployment persisted, over time becoming increasingly concentrated in the growing number of university graduates, and the quality of jobs created was low.

This chapter has shown that indeed the Tunisian economy is not in good health. While growth performance was good by regional standards, Tunisia's GDP per capita since the 1990s was far below the growth rates observed in other upper middle income countries. Further, a large share of the growth has been driven by an expansion in the size of the public sector and some expansion in the offshore sector. Exports have decreased as a share of GDP and Tunisia's share in world exports has reduced over the past decade.

At the macro level the Tunisian economy is characterized by structural stagnation and a severe misallocation of resources. Although productivity gaps between the fastest growing sectors and the least dynamic ones are large, there has been little reallocation of resources from low-productivity to high-productivity sectors—that is, the contribution of “structural change” to growth has been weak, reflecting the economic stagnation which affects the country. Similarly, “within sectors” productivity growth and job creation in sectors dominated by private firms have been weak. Tunisia is suffering from weak productivity growth in key sectors, especially in manufacturing, which is then reflected in limited jobs creation and low quality jobs. Overall, our results suggest that Tunisia is suffering from a large misallocation of labor and human capital. Today 77 percent of Tunisian workers and 75 of its human capital-adjusted labor work in sectors with below-average levels of productivity. These symptoms are indicative of barriers to competition and abundant distortions that impair Tunisia's structural transformation and prevent a more efficient allocation of resources—ultimately resulting in stunted growth and lower quality jobs creation.

This stagnation is reflected in stunted firms' dynamics: Tunisia is experiencing a private sector paralysis. Firm-level productivity growth has been very low. Firms remain active in low-productivity sectors—mobility is extremely limited and only weakly correlated with productivity, reflecting the allocative inefficiency seen at the macro level. Structural stagnation prevails. In terms of job creation, the greatest net employment creation is in young firms one to two years of age. However, very few firms enter the market, and in particular very few new large firms are created. Most firms stagnate, and very few firms grow. As such, aggregate net job creation has been disappointing. This is in spite of low firm exit rates, which themselves are a manifestation of limited competitive pressure.

The analysis has shown that Tunisia's private sector is suboptimally skewed toward relatively unproductive small firms. Tunisian firms are small on average compared to their counterparts in other countries; and very large firms are scarce, both in absolute and in relative terms. This is important because the results also indicate that, all else being equal, large firms in Tunisia perform better and create more jobs than do small firms. Since larger firms have superior performance (in terms of productivity, export, and jobs creation), their scarcity is a symptom of Tunisia's weak private sector performance. Exporting firms specialize in products for which firms tend to be smaller than in other sectors, but within these sectors they are larger than their peers in other countries. This suggests that sectoral specialization is not due to imperfections in financial markets (which limit the access to credit in certain sectors) and instead reflects deeper distortions under which private sector operates, hampering firms' (and the economy's) performance. Part of the explanation for these paradoxical findings could be that (onshore) firms try to stay below the radar to minimize the risk of predation during the time of Ben Ali. Overall, the evidence indicates that the process of “creative destruction,” an important driver of productivity growth and economic performance, is attenuated in Tunisia, resulting in private sector paralysis.

Firms' performance is also impaired by the onshore-offshore duality. The analysis also provides evidence for significant duality between the onshore and offshore sectors, manifested in among other things differences in the firm-size distribution, average productivity, and export performance. The offshore sector has performed better than the onshore sector as an engine of job creation and

exports growth, stemming to a large extent from its ability to attract FDI. However, offshore firms rely heavily on imported inputs, as they mainly focus on low value added assembly activities, with limited links to the domestic economy. The results also highlight that importing firms are among the best performing in terms of profitability, likely reflecting the rents extracted as a result of exclusive import licenses. It was common under Ben Ali for exclusive import licenses (for import and distribution of specific products) to be awarded to cronies and family members. More generally, as discussed in Chapter Two and Chapter Three, there is strong evidence that the dual economy system, entailing restrictions to market access and regulatory control especially in the onshore sector, has been systematically abused by cronies to receive special privileges and extract rents, thereby stifling competition and investment.

The chapter has also shown that, although the perception in Tunisia is that the economy is open and integrated with the EU, in fact international indicators suggest it remains very protected and closed to international trade. The export performance has been weak, especially in terms of value added. In fact, more than half of Tunisia's exports are final goods, most of which are only assembled in Tunisia. Export sophistication is low compared to benchmark countries and has increased only slightly over the past decade. The value added of export sectors with a high share of high technology goods tends to be low in Tunisia, confirming that the sophistication of exports remains limited. Although Tunisia may appear to be integrated with the EU, in truth Tunisian exports are concentrated almost only on France and Italy. In a sense Tunisia does not produce its exports but rather assembles components from or to the EU (and largely for France and Italy). This superficial trade integration reflects the fact that Tunisian firms have been unable to move beyond the assembly and low value added processes.

By documenting the symptoms of stagnation, this chapter underscores the importance of reforming the policy environment to promote competition and remove barriers to market access. The stunted pace of structural change suggests the presence of widespread barriers to the efficient operation of markets, preventing the reallocation of resources to the most productive sectors. At the firms' level, the evidence suggests the existence of severe distortions that attenuate the process of creative destruction. To facilitate a more dynamic economic environment and unleash private sector growth, the focus needs to be on how to remove the restrictions to market access and barriers to competition that undermine productivity growth and ultimately job creation, as well as to promote entry of new firms, especially of large firms, and to remove constraints to firms' growth, enabling small firms to grow large.

The evidence presented in this chapter also highlights some more focused policy actions that would be beneficial to Tunisia. The analysis has highlighted that the level of FDI is low and limited to few sectors of the economy—Tunisia could triple its level of FDI to achieve the same levels as Morocco if it reduced the regulatory and entry barriers to foreign investors. Promoting entry of large firms would pay a double dividend since large firms create more jobs from the get-go, and also have superior dynamic performance and jobs creation over time. The finding that, all else being equal, large firms create more jobs than do small firms is also relevant for industrial upgrading strategies because it questions the usefulness of targeting small firms, as is often done by programs such as the *Programme de Mise a Niveau* and the FAMEX program. Moreover, the success of the offshore sector (relative to the onshore) in generating jobs and attracting foreign investment suggests that, when considering policy reforms to minimize the duality between the onshore and offshore sectors, it is important to minimize distortions and to release constraints that impede the growth of domestic firms.

There is a spectrum of reasons that lead an economy to exhibit such low productivity and the absence of creative destruction. As discussed in the next chapters, the economic environment in Tunisia is characterized by pervasive barriers to entry and competition, giving rise to rents and privileges for

the few at the expense of the majority of Tunisians. As discussed in Chapter Two, the restrictions to market access and the prevalence of statutory monopolies have closed the domestic economy to competition and have created an onshore environment stagnating in terms of productivity such that, as was shown in this chapter, good firms are unable to grow. Further, as will be shown in Chapter Three, these rents have been captured by cronies of the former president, creating a system that is not only inefficient but also highly unfair. Following chapters will also discuss how current investment policies, the bureaucratic regulatory environment, labor market policies, and the inability of the financial sector to channel resources to productive projects all contribute to distort and hinder the performance of Tunisia's private sector and thereby keep the economy below potential.

## Notes

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1. It is important to emphasize that these foreign investments are desirable and create jobs; the challenge for Tunisia is how to also attract investments in higher value added activities that create more wealth and can employ skilled workers. As discussed in the next chapters, the current set of economic policies hampers Tunisia's ability to attract higher value added activities.
2. The tertiary education system in Tunisia offers various tracks: two-year programs on technical education (Technicien Supérieur, BAC+2), three-year bachelor programs (Licence beaux arts, BAC+3), four-year programs on humanities (Maîtrise; BAC+4), and 5-year university programs (e.g. doctors, engineers, and architects; BAC +5).
3. While the statistical series suggests a decrease in unemployment from 16 percent in 1989 to approximately 13 percent in 2010, in fact the reduction in unemployment has been smaller, since approximately 1.5 percentage points of the reduction in the unemployment rate can be attributed to the change in the definition of unemployment introduced in 2008 to align Tunisia to the ILO definition. More recently unemployment rose to 18.9 percent in 2011 following the revolution and declined to 15.3 percent as of December 2013.
4. Despite the recent increase, the share of active population remains much lower than in comparable middle-income countries in Latin American and the Caribbean and in Eastern Europe and Central Asia (at 36 percent and 44 percent, respectively).
5. The Tunisian economy is creating jobs for low-skilled individuals at rates that are faster than their entry into the labor force, contributing to a general decrease in unemployment among low-skilled individuals.
6. Our growth accounting methodology is described in Annex 1.1 and the underlying data in Annex 1.2. Total Factor Productivity (TFP) is a commonly used measure of productivity. In a nutshell TFP is calculated as the residual growth that cannot be attributed to increased use of labor and capital. In other words, everything not captured by changes in labor or capital is picked up by TFP growth. This includes measurement errors and changes in utilization rates of factor inputs. It should be noted that estimating the capital stock is beset with problems. We use the Perpetual Inventory Method to estimate the capital stock using investment data since 1960. Available data did not allow us to separate private and public investments. It is worth noting that Total Factor Productivity can be shown to be a component of labor productivity (which we will discuss below), but that the two do not coincide as the latter is also influenced by the amount of capital per worker.
7. It is worth noting that the large contribution of capital accumulation to GDP growth was largely driven by FDI in the offshore sector, which, as mentioned above, largely consisted of investments in energy and in low productivity activities with limited spillovers (such as the textile sector).
8. Many developed countries experienced TFP growth of more than 50 percent between 1950 and 1970 (Christensen 1980), with TFP growth rates higher than 2 percent per year. The Republic of Korea's 8. Many developed countries experienced TFP growth of more than 50 percent between 1950 and 1970 (Christenson, Caves, and Swanson 1980), with TFP growth rates higher than 2 percent per year. The Republic of Korea's annual TFP growth rate was a record average 4 percent during the 1980s. Productivity in Republic of Korea later 'slowed down' to 2.6 percent during the 1990s and 1.9 percent during 2001 to 2006. Over the same periods, Malaysia's TFP growth rate was 1.5 and 1.7 percent respectively (World Bank, 2010a).
9. Unfortunately no country comparisons can be made in the level of TFP with human-capital adjusted labor, as estimates are not yet available for most countries.
10. It should be noted that the role of human capital may be overestimated in our analysis since, as discussed in more detail in Chapter Five, many graduates are underemployed (that is they have jobs below their qualification) and/or mismatched (that is, their jobs are in a specialties other than those in which they are qualified).
11. Labor productivity in mining, Tunisia's most productive sector, was 12.9 times higher than productivity in the sectors with the lowest productivity in 2005. In comparison, this ratio is 12.7 in Turkey and 11.2 in Chile (McMillan and Rodrik 2011).
12. This analysis is based on average productivity. Under perfect competition, marginal labor productivity should be equalized. Assuming a constant returns production function, since labor share is not necessarily negatively correlated with average productivity, large gaps in average productivity may reflect large gaps in marginal labor productivity. There are some caveats. For example, high average labor productivity in capital-intensive sectors, such as mining, may simply reflect the fact that the labor share is low.
13. One possibility is that we overestimate productivity in the agricultural sector because employment in the agricultural sector may not be well captured in the *Enquête Nationale des Entreprises* (ENE) or *Répertoire National des Entreprises* (RNE). However, both ENE and RNE include information on micro-enterprises and self-employed.
14. It is worth noting that this result is not a result of good weather in any one year. Productivity in agriculture (output per worker) has been higher than in the textile sector over the entire decade 2000-2010 with a bigger discrepancy since the middle of the decade. This result suggests that textiles in Tunisia have extremely low productivity. A different explanation could be that international textile firms that operate part of their production in Tunisia practice "transfer pricing," such that part of the value created in Tunisia is in fact accounted for abroad.
15. Further, over the past two decades Tunisia has gradually been moving towards the bottom of the group reflecting the structural stagnation of the economy in low productivity sectors (See the DPR background report on "Tunisia's Structural Transformation: Evolution of Productivity, Employment and Exports," World Bank 2014d).
16. The wage restraint was made easier by the state policy to heavily subsidize the price of basic food and fuel products and to keep affordable the price of basic utilities (notably public transport, water, electricity, and gas). In addition, access to education and to health care was reasonably priced. Even beyond the basic commodities, Tunisia has one of the lowest costs of living in the whole of Africa.
17. The results of the Investors Motivation Survey carried out in Tunisia by the World Bank Group in 2012 indicate that availability of cheap labor is one of the top motivations for entrepreneurs to invest in Tunisia (see Chapter Four). In fact,



Tunisia's competitiveness over the past two decades has been centered on the availability of cheap labor and the provision of generous incentives to attract investment in the low-tax export-oriented "offshore sector" (see box 1.3).

18. The average share of workers in low-productivity sectors of seven Latin American countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and República Bolivariana de Venezuela) was 66 percent in 2005, ranging from 53 percent in Mexico to 81 percent in República Bolivariana de Venezuela. In Asia, the share of workers in low-productivity sector was high in India, amounting to 84 percent, but significantly lower in countries with a strong manufacturing base such as Malaysia (64 percent), Republic of Korea (66 percent), Taiwan, China (56 percent), and Thailand (70 percent).

19. For a discussion of data sources used in this analysis, see the DPR background report on "Tunisia's Structural Transformation: Evolution of Productivity, Employment and Exports" (World Bank 2014d).

20. It should be noted that this methodology does not prove any causal relations but rather reflects associations between the variables of interest, such as demographic change and growth.

21. For the purpose of this analysis, the "employment rate" component captures the combined effect of changes in labor force participation rate (that is, active population as a share of working-age population) and the actual employment rate (that is, employed as a share of active population). We likely overestimate the impact of the employment rate component since, as mentioned above, approximately 1.5 percentage points of the reduction in the unemployment rate is due to a change in the definition introduced in 2008 to adopt the ILO definition of unemployment.

22. In fact this contribution includes both the impact of increased capital stock and human capital.

23. Measuring productivity of the public sector is notoriously difficult since it produces non-market outputs whose value cannot be directly observed. As a result, public sector output is generally calculated by equating it to its inputs (that is, the amount spent on producing this output, which to a large extent consists of wages). The economic rationale behind equating output and input is that "rational" governments would spend up to the point where the marginal benefit from spending was equal to its marginal cost. This implies that increases in public spending translate automatically into one-to-one increases in output, rendering an analysis of public sector productivity based on national accounts data meaningless. In other words, in our analysis the increase in value added of the public sector reflects simply an increase in the budget expenditures on wages.

24. The expansion in the telecommunications sectors was also the result of growth in the mobile market over the period. In 2002, Tunisia allowed the private provider Ooredoo Tunisie (which until April 2014 was called Tunisiana), a joint venture of Egypt's Orascom and Kuwait's Wataniyya, to enter the mobile phone sector, leading to a steep decline in prices and increase in coverage rates. A 35 percent stake of Tunisie Telecom was privatized in 2006. And a new mobile and 3G license was issued in 2008 to a consortium led by France's Orange. The family of President Ben Ali held stakes in both the Ooredoo (formerly called Tunisiana) and Orange operators. Nevertheless, prices of telecommunications in Tunisia remain some of the highest in the world (see Chapter Two), reflecting the monopolistic power of these operators who are able to extract enormous rents from consumers—see also the DPR background report on "Opening Markets to New Investment and Employment Opportunities in Tunisia" (World Bank 2014a).

25. As mentioned not every structural change is good. In the case of Tunisia, the decline of employment in the low-productivity textile sector significantly contributed to Tunisia's positive structural change. To pass judgment on whether this change was welfare improving and growth promoting, however, would require a more in-depth analysis—looking at marginal productivity of the sector and whether the labor resources were reemployed in other economic activities.

26. A detailed analysis of "structural change" with a 90-sector breakdown is presented in annex 1.3 and in the DPR background report on "Tunisia's Structural Transformation: Evolution of Productivity, Employment and Exports" (World Bank 2014d).

27. To enrich the analysis in this section we compare Tunisia to a set of regional and international benchmark countries. Benchmark countries include those that are 100-300 percent richer than Tunisia, have grown dynamically over the last twenty years, and have similar factor endowments. These criteria are in line with the key selection criteria for benchmark countries proposed under the Growth Identification and Facilitation Framework (see Chapter Seven; Lin and Monga 2010). These criteria apply to the Czech Republic, Malaysia, Poland, the Slovak Republic, and Turkey. Average growth rates of these countries were 4.3 percent, similar to Tunisia's growth rate but higher than the median growth of other countries with a similar income level. Countries with higher growth rates in this income category include, for example, Chile, Lebanon, and Panama, which have very different economic structures than Tunisia. Moreover, while Tunisia's real exports have grown by 3.7 percent on average, exports of these countries have grown nearly twice as fast. Benchmark countries also include Korea as a high-performing country and Portugal. Portugal's economic structure twenty years ago was very similar to Tunisia's current economic structure. Regional comparators are Egypt, Jordan, and Morocco (see Chapter Seven).

28. Within the MENA region, FDI in Morocco and Egypt for instance face much less restrictions, including in the agricultural and service sectors. Morocco allows far greater flexibility to FDI in the service sector (see also figure 1.2). Moreover, the FTA between the United States and Morocco served to clarify Morocco's investment regime, as it inventoried its FDI restrictions on the basis of a negative list. Morocco gradually moved toward international best practices regarding transparency and dialogue with investors. Their application is being extended to broader fields related to FDI including from other countries. As such, FDI in Morocco is much more diversified than in Tunisia.

29. For a detailed discussion on the evolution of Tunisian exports also see El Ej (2012).

30. Exports growth was driven mostly by an expansion of electrical machinery and mineral fuels exports that offset a rapid (30 percent) contraction of not-knitted apparel exports. Exports of other important sectors such as knitted apparel and footwear saw only a minor increase. The poor performance of these sectors probably was due in large part to the gradual dismantling of the multi-fiber agreement completed in 2005, which meant that Tunisian apparel exporters had to face competition from China and other countries.

31. In general, export performance of MENA countries is weak. Standard gravity models conclude that MENA countries export significantly below their potential, that is, what would be expected given their economic, cultural, and geographical characteristics (Bhattacharia and Wolde 2010; Behar and Freund 2011). Exports in East European benchmark countries such as the Czech Republic, Poland, and the Slovak Republic accelerated over the 1990s as they transitioned from

communist regimes into market economies. Their export growth gained further speed as they integrated into the European Union. Korea's performance was outstanding as the value of its exports almost quadrupled over the period.

32. The EXPY index was developed by Hausmann, Hwang, and Rodrik (2004). The EXPY is linked to the productivity level of countries exporting these goods, building on the assumption that the export products predominantly produced by higher income countries are more likely to be associated with a higher productivity level. The EXPY is based on PRODY. The PRODY of an exported good is calculated as the GDP per capita of each country exporting the good weighted by the export of each given country as a share of the sum of all export shares. Goods primarily exported by richer countries are presumed to be more sophisticated and receive higher PRODY. A country's EXPY is thus calculated as the PRODY of each good that country exports weighted by the share of these goods in the country's exports basket. Jordan is the only MENA country to have an EXPY superior to what has been expected given its GDP per capita level (as the two largest exporting industries in Jordan are the pharmaceutical industry and minerals).

33. Sophistication of exports can be measured along several dimensions. For a detailed discussion of the sophistication of Tunisia's exports, see Ghali (2012).

34. Products that have the largest contribution to Tunisia's EXPY are petroleum, electronic appliances, and olive oil. Petroleum and olive oil tend to be exported by higher income countries and therefore have a higher PRODY. These three products alone contributed about 28 percent to Tunisia's EXPY in 2010. On the contrary, the PRODY of textile products tend to be weak.

35. One of the most famous examples, in this context, is the Chinese exportation of iPad. China's export value of one iPad is 499 USD, but the domestic value added per iPad is only 10 USD (2 percent) because China's role in the iPad is relegated to assembly of the final product. Increased trade links among countries have come hand in hand with a fragmentation of production (Jones and Kierjowski 2001). Goods and services once produced in a single country have become part of a production chain spanning different countries around the globe. Today, trade in intermediate inputs accounts for roughly two-thirds of international trade.

36. In fact this estimate is likely to significantly overestimate the share of domestic value added in the case of Tunisia's exports. A key assumption of the approach developed by Hummels, Ishii, and Yi (2001) is that the intensity in the use of imported inputs is the same between production for exports and production for domestic sales. This is unlikely to be the case in countries with a lot of processing exports—that is, import for exports—which is the case of Tunisia's offshore sector. Countries like Tunisia may exhibit significant differences in the intensity of imported intermediate inputs in the production for processing exports as compared to the production of domestic final sales and non-processing exports. Koopman, Wang, and Wei (2008) show that for these countries the above formula is likely to lead to a significant over-estimation of the domestic value added in exports. While more than half of Tunisia's exports are final goods, in fact many of them are only assembled in Tunisia. Given this significant share of processing exports, actual value added of exports may even be lower.

37. A large part in the domestic value added of exports tends to be created in the services sectors, in particular transport, real estate services, and telecommunications. Disentangling the domestic value chain into its sectoral components would therefore be important in understanding the direct and indirect employment impacts of trade.

38. Nevertheless, as discussed in Chapter Seven, the EU remains the market with the greatest potential for absorption of Tunisian exports.

39. That said, it should also be noted that the EU policy is also only to decentralize low value added jobs, and those countries resist fiercely any moves by companies to outsource any higher quality jobs. Tunisia's policy, however, plays right into the hands of the EU strategy.

40. The analysis in this section uses data from the Repertoire National des Entreprises (RNE), an administrative database containing information on all registered private sector enterprises, including one-person firms, maintained by the Institute National de la Statistique. Note that one-person firms are synonymous with self-employment; these are firms that do not hire any paid laborers and for which the owner provides all labor input.

41. The term "creative destruction" was developed by the Austrian economist Joseph Schumpeter (1883-1950). It refers to the idea that economic growth is the result of a dynamic, evolving system—it results from technological change and the innovations of new goods and services that emerge from the ashes of obsolete industries. The paradigm has been subsequently elaborated in Aghion and Howitt (1992). It relies fundamentally on three underlying ideas. First, long-run growth relies on process innovations, namely to increase the productivity of production factors and/or organizational innovations to make the combination of production factors more efficient. Second, innovations result from investments, firms' investments in skills, and the search for new markets that are motivated by the prospect of monopoly rents for successful innovators. Third, new innovations tend to make old innovations, old technologies, and old skills obsolete, such that growth involves a conflict between the old and the new: the innovators of yesterday resist new innovations that render their activities obsolete. The Schumpeterian growth paradigm thus places firms and entrepreneurs at the heart of the economic performance and growth process and stipulates that economic progress is the result of continuous changes in the structure of the economy.

42. For example, in the United States as much as 48 percent of all employment is accounted for by firms employing more than 10,000 workers (Haltiwanger, et al. 2013), whereas no such firm is observed in our data: the maximum employment size ever observed between 1996 and 2010 was 9,222 workers.

43. In our sample of emerging economies, only India and Indonesia had a lower entry density than MENA countries mainly due to India's and Indonesia's high shares of rural population and non-registered (informal) firms.

44. Reliable cross-country data on entry rates are difficult to come by. In interpreting the figure it is important to bear in mind that limited liability companies comprise only a subset of all firms, and the numbers may thus not be representative of the private sector at large.

45. The lack of mobility may also in part be driven by restrictive labor regulations that make firing of workers with open-ended contracts both costly and difficult (see Chapter Five) and by financial markets that have been unable to channel resources toward productive projects (see Chapter Six).

46. To conserve space, the results are not presented here but are discussed in detail in Rijkers et al. (2013).

47. The relatively better performance of the offshore sector shows the virtues of an open and competitive economic environment. While the performance of the offshore sector has remained stunted, compared to the rest of the economy the

offshore sector has been an engine of job creation and exports growth, stemming to a large extent from its ability to attract FDI. For instance, according to the specification in column 6 of Table 1.5, firms that have foreign ownership have job creation rates that are 4.6 percent higher than other firms. Hence, it is important not to lose sight of the fact that offshore firms on average have a much better performance in terms of jobs creation, productivity, and exports, compared to the firms in the protected onshore sector.

48. This section draws on Marouani and Mouelhi (2013). The analysis uses data from the Enquête National des Entreprises (ENE), which contains information on manufacturing firms with more than 5 employees.

49. Marouani and Mouelhi (2013) estimate that offshore firms are roughly 18 percent more productive on average than onshore firms, even after we account for the fact that offshore firms tend to be larger. It should be noted, however, that official tax data records do not yield the same monotonic relationship between productivity—proxied by output per worker—and firm size, most likely reflecting the impact of measurement error and differences in sectoral composition (see Rijkers, et al. 2013).

50. Analyzing the drivers of Total Factor Productivity (TFP) growth and allocative efficiency requires firm-level data on capital, labor, and value added, available only for manufacturing firms, which account for roughly one-fifth of aggregate employment and output. This section uses data from

the Enquête National des Entreprises (ENE), an annual firm survey that covers approximately a third of all manufacturing firms; the main findings are briefly presented here (and are elaborated upon in Marouani and Mouelhi 2013).

51. This matches the results of the growth decomposition presented in Section One, where we saw that the contributions of the increase in capital and labor to GDP growth were roughly similar.

52. With exports accounting for just over half of GDP, firms partaking in international trade are an important source of income and jobs. Only 8 percent of firms that offer wage jobs are involved in exporting and 5 percent in importing. Firms that export (import) account for a third (half) of all employment. In fact, it is noticeable that the offshore firms, which are predominantly focused on exporting, accounted for roughly 33 percent of all wage employment in 2010, even though only 6 percent of all firms that offer wage jobs are registered as offshore firms.

53. In a typical country the top 1 percent of firms account for 56 percent of all exports, and the top 25 percent account for almost all export value (Freund and Pierola 2012).

54. See details in DPR background report on “Private Sector Paralysis: Firm Dynamics in Tunisia,” World Bank (2014b).

55. As discussed in Chapter Ten; however, significant differences in infrastructure and human capital persist across regions.

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