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LABOR DEMAND IN TUNISIA: SIZE, STRUCTURE AND DETERMINANTS

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Send correspondence to:
Sofiane Ghali
University of Tunis
Sofiane.ghali@gnet.tn

Abstract

This paper explores the employment performance and capacities of the Tunisian private sector with a focus on the link between employment and investment and on the link between employment and exports. The analysis relies on the available INS statistics on the Tunisian industrial structure, mainly the data from the annual enterprise surveys and on the TLMPS 2014 data. The paper comprises four sections. First, the authors analyze the size and the structure of the Tunisian labor market. Second, the authors quantify the labor content of investments and exports and show that creating more jobs needs more effort by the private sector, which has to invest more, especially in new technologies, research and development, and in sectors that are intensively using skilled labor. The private sector also has to increase its share in the economy and to improve its competitiveness internationally. Third, they describe the intra- and inter-sectoral allocation of employment and variation of labor productivity. The purpose is to analyze the capacity of the economy to improve the quality of labor demand and absorb highly educated young people. Fourth, they analyze the link between firm size and labor demand and show the need for a new industrial structure allowing for a bigger share of larger and more dynamic enterprises which innovate more and can benefit from economies of scale and thereby create more and better jobs.

ملخص

تستكشف هذه الورقة أداء القطاع الخاص التونسي وقدراته مع التركيز على الصلة بين العمالة والاستثمار وعلى الصلة بين العمالة والصادرات. ويعتمد التحليل على إحصاءات المعهد الوطني للإحصاء المتاحة بشأن الهيكل الصناعي التونسي، ولا سيما البيانات المستمدة من الدراسات الاستقصائية السنوية للمؤسسات وعلى بيانات عام 2014. وتضم الورقة أربعة أقسام. أولا، يحلل المؤلفون حجم وهيكل سوق العمل التونسي. وثانيا، يحدد المؤلفون كمية محتوى العمل من الاستثمارات والصادرات ويظهرون أن خلق المزيد من فرص العمل يحتاج إلى مزيد من الجهد من جانب القطاع الخاص، الذي يتعين عليه أن يستثمر أكثر، لا سيما في التكنولوجيات الجديدة والبحث والتطوير وفي القطاعات التي تستخدم العمالة الماهرة بشكل مكثف. كما يتعين على القطاع الخاص زيادة حصته في الاقتصاد وتحسين قدرته التنافسية على الصعيد الدولي. وثالثا، يصفون التوزيع داخل القطاعات وفيما بين القطاعات للعمالة وتفاوت إنتاجية العمل. والغرض من ذلك هو تحليل قدرة الاقتصاد على تحسين نوعية الطلب على اليد العاملة واستيعاب الشباب المتعلمين تعليما عاليا. رابعا، يحللون الصلة بين حجم الشركات والطلب على العمل ويظهرون الحاجة إلى هيكل صناعي جديد يسمح بنصيب أكبر من المؤسسات الأكبر حجما وأكثر ديناميكية التي تستحدث المزيد ويمكنها أن تستفيد من وفورات الحجم وبالتالي خلق وظائف أكثر وأفضل.

1. Introduction

In this paper, we explore the employment performance and capacities of the Tunisian private sector with a focus on the link between employment and investment and on the link between employment and exports. To do so, we proceed in four steps. First, we present a brief description of the size and the structure of the Tunisian labor market. Second, we quantify the labor content of investments and exports to try to show that creating more jobs needs more efforts by the private sector. The private sector needs to invest more, especially in new technologies, R&D, and in sectors that are intensively using skilled labor. It also needs to improve its competitiveness internationally. Third, we describe the intra- and inter-sectoral allocation of employment and variation of labor productivity. The purpose is to analyze the capacity of the economy to improve the quality of labor demand and absorb highly educated young people. In the last section, we analyze the link between firm size and labor demand. The objective is to show the need for a new industrial structure allowing for a bigger share of larger and more dynamic enterprises which innovate more and are able to benefit from economies of scale and thereby create more and better jobs. The analysis relies on the available INS statistics on the Tunisian industrial structure, mainly the data from the annual enterprise surveys.

2. Size and Structure of the Tunisian Labor Market

The labor market in Tunisia suffers from a structural imbalance between labor supply and demand. The resulting unemployment is characterized by four major elements: high unemployment (15.6%), inadequacy between training and employment, high long-term unemployment (33%) and youth unemployment (32%), in particular, that of graduates of tertiary education (33%).

The labor supply in Tunisia reached 4.047 million people in 2016, registering a 15% increase since 2007. The female labor force grew faster than that of men, 22%, compared with 12%, between 2007 and 2016. On the other hand, total employment increased from 3,085 million in 2007 to 3,418 million in 2016 (Figure 1).

The employment rate remained at about 40% throughout the period 2007-2016. However, the male employment rate remained stable at 60%, while the female employment rate never exceeded 20% (Figure 2). The latter is explained by the fact that 74% of women of working age are at home or are still in school.

Tunisian economy has gradually shifted away from agriculture towards services. As shown in Table 1, the share of the agricultural sector dropped from 18.5% to 14.8% (- 4 percentage points) over the 2007-2016 period, whereas the share of the services sector increased from 49% to 52% (3 percentage points).

Regarding the manufacturing sector, the most remarkable fact is that the sector traditionally one of the largest suppliers of jobs, i.e. textiles, clothing, and footwear, has seen its share falling from 45.4% to 37.6% of the labor force in the manufacturing sector between 2007 and 2016 (Figure 3).

The service sector is the main employer of labor compared to other sectors of activity. It employs more than half of the employed workforce, i.e. 52%. The number of workers employed in this sector is 1,765.5 thousand people.

As shown in Figure 4, the education, health, and administrative services sector accounts for the largest share of the employed labor force. In 2016, this share corresponds to about 37.4% of employed workers, compared with only 26% in trade.

In 2013, the total salaried private employment was about 1.6 million people from which one million are in what the Institut National de la Statistique (INS) calls formal employment (employment covered by social security according to the INS definition) which represent

almost 30% of the economically active population. The remaining 600.000 represent self-employed people (legally registered people with no employees).

As shown in Figure 5, SMEs represent more than 99 per cent of Tunisian companies. Micro-enterprises, which account for 97 per cent of Tunisian enterprises, employ only 11.8 per cent of the private sector workforce. They are mostly active in retail trade (31.7 per cent), transport and warehousing (15.5 per cent) and, to a lesser extent, in manufacturing (11.7 per cent).

But this structure has not changed drastically since 1997. As shown in Figure 6, the share of the large firms increased in the periods 1997-2002 and 2005-2010 and stagnated in the periods 2002-2005 and 2010-2014. On the whole, we can see a relative stability of the structure, with a rise in the share of the large firms (+200), which increased by five percentage points since 1997, at the expense of the medium and small firms. The growing share of large firms in employment is consistent with the theoretical predictions that trade liberalization benefits large firms that are better able to compete internationally than SMEs.

As shown in Table 2, the distribution of employment by firm size is not uniform across activities. Large firms are the most important employers in Manufacturing (63%), Accommodation and Food Service Activities (59%), Financial and Insurance Activities (80%), Administrative and Support Service Activities (71%), but not in Wholesale and Retail Trade; Repair of Motor Vehicles, Motorcycles and Personal and Household goods (26%), Professional, Scientific and Technical Activities (30%), Education; Human Health and Social Work Activities (29%), Repair of Computers and Personal and Household Goods; Other Personal Service Activities (22%).

On the other hand, one-third of salaried employment in the private sector is in off-shore companies. This share is becoming increasingly important as it did not exceed 18% in 1996 (see Figure 7).

The issue of the role of offshore companies is closely related to inward Foreign Direct Investments. When decomposing employment in the private sector, we notice that the share of foreign companies has doubled 9.4% in 1996 to 19.5% in 2013 (see Figure 7)

The analysis of the mean number of employees per firm illustrates the importance of economies of scale in export performance. Indeed, offshore and foreign firms are the main engines of Tunisian exports because of their size. Indeed, in 2013, foreign companies employed, an average, 13 times more than local firms. To avoid the fixed and variable costs of exports, firms need to have a sufficient scale. On the other hand, the statistics in Table 3 show that foreign and offshore companies are smaller at the end of the period compared to mid-1990. On average, a foreign company was employing 19 workers in 1996 compared 13.5 workers in 2013. This may be due to a technological shift and/or a change in specialization from one sector to another. These issues will be analyzed in next sections.

3. Determinants of Labor Demand
Before analyzing labor demand in Tunisia, it is useful to remember its determinants. Labor demand is closely linked to the behavior of firms and the environment in which they operate. Firms which invest and grow more will demand more labor. Demand, as well as supply, factors in markets for goods and services could explain the determinants of labor demand. On the demand side, market size has a prominent role. First, the market size is itself linked to several factors: the income levels, the number of local consumers as well as the market potential (depending on the geographical position of a country and the income levels of neighbors as well as the level of tariff and non-tariff barriers to international trade). Market size will affect the demand for goods and services --local consumption levels as well as exports. Second, investment levels are very important, in the sense that they constitute one of the main components of demand at the macro level. The more firms invest, the more they will demand

goods and services from other firms, thus boosting labor demand in these firms. In addition, when investing, companies need employees in addition to machinery.

On the supply side, competition, industrial structure, entrepreneurship as well as productivity gains are the main sources of labor demand. The entrepreneurship levels in a given economy are very important insofar as they reflect the dynamism and the level of reallocation of resources and the capacity of innovation of the economy. Also, the degree of competition and the economic structure are important for labor demand through their impact on the growth of firms and the extent of innovation. As long as the latter is a process of creative destruction, an economy that is growing thanks to regulated sectors will not be able to create as many jobs as an economy relying on competitive activities. Entrepreneurship, market structure, and competition naturally boost labor demand, but also allow for a reallocation of resources between and within sectors, from less to more productive activities.

Lastly, the barriers to growth due to regulations, as well as the degree of informality could be of importance. Indeed, only large and growing companies (and exporting ones) are able to benefit from economies of scale. All these factors positively affect labor demand.

4. Small Market Size Despite a Competitive Geographical Position

The Tunisian market is relatively small. Indeed, Tunisian GDP does not exceed 50 billion USD. This small market size is not sufficient to have a diversified efficient economic structure. As compared to the revenue of the biggest multinationals in the world,[1] we see that the local market is not large enough to have firms with an appropriate scale, generating economies of scale and scope in different sectors and thereby allowing firms to grow and a generate dynamic labor demand.

This constraint could be avoided by a deep integration into the foreign markets. In theory, the Tunisian government followed this strategy since the 1970s when it replaced the import-substitution strategy with an export promotion strategy. This industrial policy has led to the development of an exporting industry, but the local market remained highly protected. At the end of the 1980s, Tunisia adopted a development strategy based on integration into the world economy as a way develop its industrial structure. Tusinia undertook several measure signalling its engagement to abide by the rules and provisions of the multilateral trading system, including joining the WTO in 1993, signing the free-trade agreement with the European Union (EU) in 1995, acceding to the Greater Arab Free Trade Area (GAFTA) in 1998, and negotiating more than 50 bilateral trade agreements. These measures aimed at achieving deeper liberalization of trade flows and a higher openness ratio. Figure 8 shows that the openness ratio has more than doubled since 1970 reaching around 100%. However, this performance is limited compared to that of European countries with comparable populations to Tunisia's, such as Belgium and The Netherlands, which have much higher ratios. Furthermore, the increase openness sugested by this figure could be somewhat exaggerated since it includes trade in oil. It is clear that the 1973 and 1978 oil crises, in addition to the sharp increase in oil prices in 2004, have contributed to the rising openness ratios.

Compared to the performance of other countries,[2] Tunisia has very mixed results in terms of export development (see Figure 9). Indeed, the ratio of exports of goods and services to GDP has remained stable from 1990 to 2014. The only country among the comparator countries in the figure with a similarly stagnating export share was Egypt.

Tunisia has achieved such limited integration into global markets despite the adoption of various policies to promote exports since the 1980s and the Tunisia's competitive geographical

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[1] Example: Wall Mart: 482 billion USD; Samsung: 305 billion USD, Volkswagen: 245 billion USD, Apple: 234 billion USD in 2013.

[2] Slovak Republic, Korea, Czech Republic, Morocco, Portugal, Turkey and Poland.

advantage. Indeed, Tunisia firms have significant market potential given their proximity to European markets and the important size of these markets. According to the World Bank World Development Indicators data (2013), the Tunisian market is ranked 46th among all markets (219 countries are included). This is a competitive advantage which is not sufficiently exploited by Tunisian firms to export more and increase their demand for labor. The problem is obviously not a matter of firms' behavior only. Business climate and all the constraints Tunisian private firms are facing to develop are major constraints to more recruitments. The poor export performance is also partly due to the inability to go further in regional integration within Maghreb countries. Border countries are an important leverage to develop exports.

To sum up, Tunisia has made appreciable efforts to liberalize its economy with limited results. After analyzing the market size issue, next section emphasizes the importance of export performance and foreign direct investment in creating jobs by the Tunisian private sector.

5. Export Performance and Foreign Direct Investment: The Main Drivers of Labor Demand by the Private Sector

The mixed results of Tunisia regarding export development have had important consequences on labor demand. Indeed, as shown in Figure 10, there is a clear positive link between job creation and exports in Tunisia. A simple linear regression shows that a 1% increase in exports increases job creations by 0.53%.

However, this result has to be qualified. The impact of exports on job creations was not constant over the last thirty years. Indeed, the economic structure is less and less able to create jobs through export development. Figure 11 illustrates this finding. At the beginning of the period, in constant terms, around 150 million dinars of exports were necessary to create 1000 jobs whereas, at the end of the period, this figure had almost doubled.

After assessing the link between exports and job creation in the private sector, we try in what follows to better explain this relationship by quantifying the share of off-shore companies in job creation in the private sector. In 2013, the Tunisian private sector employed around 1 million formal salaried people, (which represent almost 30% of the economically active population). Although the share employed in off-shore companies did not exceed 18% in 1996, it has increased to nearly one-third by 2013 (see Figures 6 and 7).

6. Private Investment

Investment in one of the main drivers of labor demand. By investing, firms increase their production capacity thereby requiring more workers. Figure 12 shows the lack of investments in Tunisia. The investment rate rarely exceeded 25% of GDP despite the need for a developing country for productive investments. Southeast Asian economies have grown thanks to investment rates higher than 30% for relatively long periods. In addition, for the post 2011 period, investment rates fell sharply to below 20% of GDP. These levels are surely insufficient to boost labor demand.

The investment rates statistics are worth analyzing, but we also need to see the decomposition of investments between private and public sectors, especially for the Tunisian case. Figure 13 shows a constant trend in the share of private investment. Apart from few exceptions due to the privatization of big companies, the share of private investment did not exceed 60% of total investments.

To sum up, the Tunisian economic growth is driven by exports and consumption. The investment rates are below the necessary levels to boost labor demand. In addition, the share of private investments has to increase in order to have labor demand levels which allows to absorb labor supply. The lack of investments is due to inappropriate business climate. In addition to the structural shortcomings such as access to finance and costs of credit, tax pressure, cronyism, corruption, bureaucracy, problems of rule of law and unfair competition

from informal imports. New challenges have emerged after 2011, including macroeconomic imbalances, social and political instability and security. All these constraints must be overcome in order to achieve the desired levels of private investments.

The issue of the role of offshore companies is closely related to inward Foreign Direct Investments. When decomposing employment in the private sector, we notice that foreign companies' share has doubled from 9.4% in 1996 to 19.5% in 2013 (see Figure 7)

The analysis of the mean number of employees per firm illustrates the importance of economies of scale in export performance. Indeed, offshore and foreign firms are the main engine of Tunisian exports because of their size. Indeed, in 2013, foreign companies employed, on average, 13 times more than local firms. To avoid the fixed and variable costs of exports, firms need to have sufficient scale. On the other hand, the statistics in Table 3 show that foreign and offshore companies are smaller at the end of the period compared to mid-1990. On average, a foreign company was employing 19 workers in 1996 compared 13.5 workers in 2013. This may be due to a technological shift and/or a change in specialization from sectors to other. These issues will be analyzed further in the following sections.

7. Entrepreneurship, Firm Size, Firms' Survival and Labor Demand

In addition to investment levels, entrepreneurship has a crucial role in labor demand. Indeed, new firms are not only a source of new jobs but also behind a fierce competition with existing companies. Also, they are very often a source of innovation and therefore economic growth. New business density in Tunisia is two times less than the world average and five times lower than that in developed countries (Figure 14). Entrepreneurship in Tunisia needs, therefore, to develop considerably.

The issue of entrepreneurship in Tunisia is problematic for two reasons: the number of new formal firms is low compared to international standards, and the employment intensity of these newly created firms is very low. As shown in Figures 15 and 16, more 96% of new firms were not employing any salaried person in 2013. They can be considered informal enterprises, and they are unable to boost labor demand. Newly registered firms employing more than two people have not exceeded 5% since 2003.

The newly created firms are in their majority not creating jobs, apart for the entrepreneurs themselves. More generally, employment is closely related to firm size. Indeed, 0.1% of firms (those employing more than 200 people) generate 41% of salaried-jobs in the private sector and 26% of total employment in the private sector.

We, therefore, conclude that entrepreneurship is weak and is mainly driven by self-employed people. These firms account for more than 95% of new firms. Big enterprises (more than 200 employees) do not exceed 0.2% of firms and account for more than 25% of private employment. This economic structure is, obviously not able to absorb labor supply. Very small firms are not only unable to generate economies of scale but also constitute an unfair competition to formal firms since they are semi-formal, they beneficiate from a simplified tax system, lower tax rates and very often regulations and administrative permissions that protect them. This dichotomy in the economic structure is socially important but economically inefficient. There is certainly an urgent need for a new industrial structure allowing for a bigger share of larger and more dynamic enterprises which innovate more and are able to benefit from economies of scale and thereby create more and better jobs.

One of the additional weaknesses of the Tunisian industrial structure is the incapacity of firms to grow and employ more and more workers over time. Figure 17 illustrates this ascertainment. Employment by firms created in 2000 has an inverted U-shaped trend over time. These 45,000 firms have employed 60,000 employees in 2000, 88,000 in 2002 to begin their decline since then. In 2013, they were employing no more than 50,000 employees.

8. Labor Reallocation Across Sectors

The reallocation of resources between activities (within or between sectors) is one of the main characteristics of a dynamic labor market. But, in Tunisia, the reallocation process is rather slow. The share of different sectors in labor demand remains relatively stable over long periods. Apart from the services that are employing the larger shares (from 24% of total employment in 1990 to 32% in 2016) at the expenses of agriculture, public administration and manufacturing have maintained the same share over more than two decades (Figure 18). The stagnant share of manufacturing illustrates the fact that the sector has not benefitted enough from integration into foreign markets. Moreover, services, which are employing an increasing share of the labor force despite their over-regulations and protection. But, any specialization in non-competitive sectors cannot be a source of increased labor demand insofar as competition is one of the main sources of innovation and technological change. If firms are protected, incentives to innovate, invest and thereby grow are low, and labor demand will not develop.

Inside the industrial sector, there is an interesting trend of reallocation of labor resources from Textile and Leather products to Mechanical and Electrical firms (Figure 19). This reallocation is an interesting change in industrial specialization but is not sufficient to solve the problem of insufficient labor demand. As for employment in different services, we notice that gains in employment are mainly due to the trade sector (Table 4).

Analyzing the sectoral structure of employment is not adequate if we do not consider the structure of labor demand and the absorption rate of tertiary-educated workers. Figure 20 shows that administration is the first employer of educated workers, followed by market services and manufacturing. But, this trend is changing over time. Manufacturing is, unfortunately, employing only 10% of tertiary educated people. Improving the quality of labor demand by the industrial and services sectors seems to the only solution that can lead to the absorption of the increasingly educated new entrants in the labor market.

But, if we refer to a recent survey conducted by the "Institut Arabe des Chefs d'Entreprises"(I.A.C.E)[3], we can see that the problem is also a supply side problem. Indeed, it appears that 60% of job applicants do not meet the minimal skills criteria required by the firms. For 54% of them, their level of technical skills could be classified from medium to low. At the level of written and oral presentations of skills and experiences, almost two-thirds of applicants are judged incompetent, which means that the candidates are not able to write reports or elaborate projects.

Of the 49 jobs studied, in 42 cases the main argument to explain the lag time to fill the position (which could last up to three years in extreme cases) is the lack of skills. These problems have some impact on firms; the most significant are market losses for 26% of companies, difficulties to meet delivery deadlines (22%), difficulties in achieving the investment objectives (24%) and finally the withdrawal of products or services offered (16%). For small companies, the outcome in 42% of the cases is in terms of market loss. One of the main conclusions of the report published by the I.A.C.E is that the mismatch described above is intrinsic to the education and vocational training system and is not only to the firms' requirements.

On the other hand, according to the last survey on business climate conducted by ITCEQ (2016), 27% of surveyed companies report having vacant positions, especially at the skilled worker level, mainly due to inadequate training and profiles that are not available in the labor market.

In order to improve the training system and adapt it to the needs of enterprises, companies expressed their willingness to contribute to modernizing the vocational education and training system. 45% of companies expressed their willingness to be involved in training programs,

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[3] "Rapport National sur l'Emploi", I.A.C.E, 2016.

53% in need to modernize learning techniques and 22% in the development of demand-driven training and apprenticeships.

9. Administrative Services As "Employer in Last Resort"

The managerial staff rate saw a remarkable evolution between 1994 and 2015 but remains relatively low (less than 20%) (Figure 21). It is noteworthy that the administration has by far the highest rate of executive (cadre) staff (47%), followed by services (16.6%), manufacturing (11%) and non-manufacturing (including the construction sector).

In addition, there are large gender disparities: women have a better rate for administration and services, whereas in manufacturing the opposite is true (Table 5). The rate of female managers is twice that of men, thanks to their access to education. What we can see from the disparities in the managerial staff rates is that the public sector is an "employer of last resort" for graduates, especially women. This contrasts with the reliance of the private sector mainly on low-skill labor leading to the persistent mismatch between the skills demanded and the skills produced by the educational system.

10. Conclusions

This paper explored labor demand challenges in Tunisia. It is clear from this analysis that the Tunisian local market size is small. It hampers the development of labor demand. Deeper integration to foreign markets is one of the main solutions in this case. But, despite the relatively good geographical position and the efforts made since the early 1990s, openness is still insufficient. This is due to the lack of regional integration in addition to Non-Tariff Barriers to Trade and the focus done on industrial products whose competitiveness depends heavily on services, which are closed and over-regulated.

Moreover, the Tunisian economy needs to develop the export performance. Indeed, there is a clear link between exports and job creations. Foreign and off shore companies are more active than Tunisian and on-shore companies in creating jobs. They are bigger and more efficient, thereby able to overcome costs of exports. However, our analysis shows that the labor content of exports, the size of off-shore and foreign companies are decreasing.
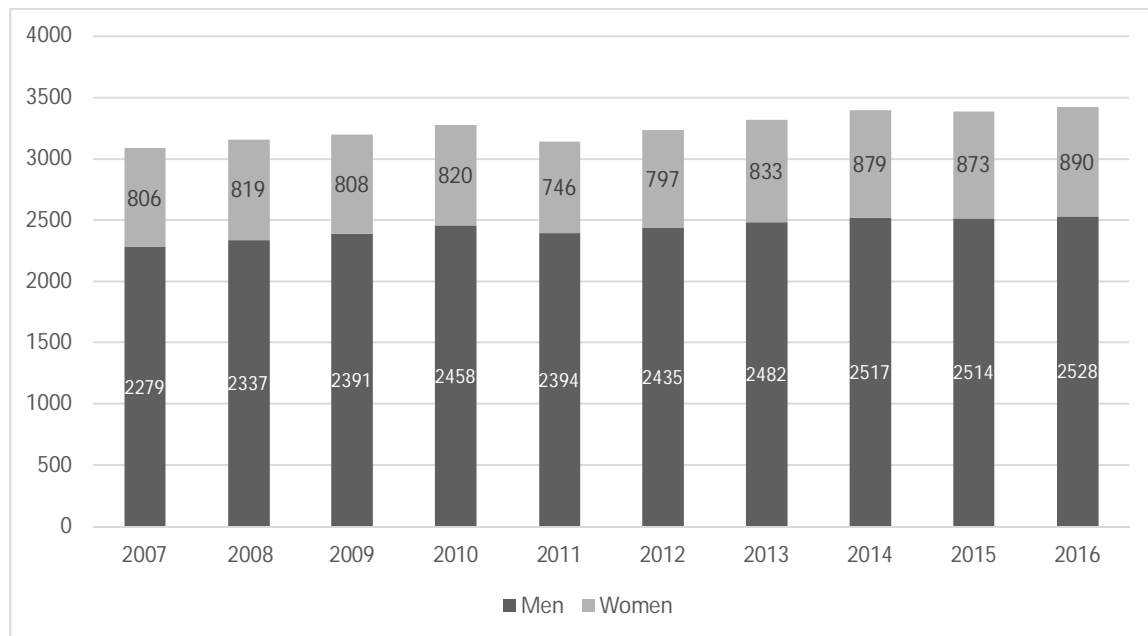
This paper has also emphasized the lack of investments in Tunisia. Investment rates are relatively low, which is certainly due to inefficient business climate: the regulatory framework, access to finance, costs of credits, cronyism, corruption, bureaucracy, and regulations prevent firms from investing more. We also argued that the level of entrepreneurship is insufficient. There are not enough new firms. In addition, the big majority of those new firms did not employ enough people and did not grow over time.

Lastly, there is a reallocation of resources between sectors: from agriculture to services and inside industry from Leather-Textile to mechanical and electrical industry. But, unfortunately, this reallocation has not helped to absorb labor supply because of the low quality of labor demand: educated people are mainly recruited in the public sector which is considered as an "employer of last resort" for graduates, especially women.

References

GHALI, Sofiane and Sami REZGUI (2015), "Structural Transformation and Industrial Policy in Tunisia", in *Structural Transformation and Industrial Policy: A Comparative Analysis of Egypt, Morocco, Tunisia and Turkey and Case Studies*, European Investment Bank, FEMISE, 2015.

IACE (2016), Rapport National sur l'emploi, Tunis.

Institut National de la Statistique (2016), Répertoire National des Entreprises, Tunis.

Institut National de la Statistique (2016), Les Comptes de la Nation, Tunis.

I.T.C.E.Q. (2016), "Rapport annuel sur la compétitivité", Mai, Tunis.

I.T.E.C.Q (2016), "Climat des affaires: principaux résultats de l'enquête compétitivité 2015", Tunis.

Ministère de l'Industrie (2008), "*Synthèse de l'étude stratégique industrielle à l'horizon 2016*", Tunis.

WEF (2016), "*Global Competitiveness Report*".

World Bank (2016), World Development Indicators, Washington D.C.

World Bank (2015), Doing Business, Washington D.C.

World Bank (2014), Tunisia: Development Policy Review. "The Unfinished Revolution: Bringing Opportunity, Good Jobs and Greater Wealth To All Tunisians", Report No. 86179-TN, May 2014, World Bank, Washington D.C.

World Bank (2010), "Towards Innovation-Led Growth: Republic of Tunisia Development Policy Review", *Report N°50847-TN*, January, Washington D.C.

World Bank (2009), "From Privilege to Competition: Unlocking Private-Led Growth in the Middle East and North Africa", *MENA Development Report*, Washington D.C.
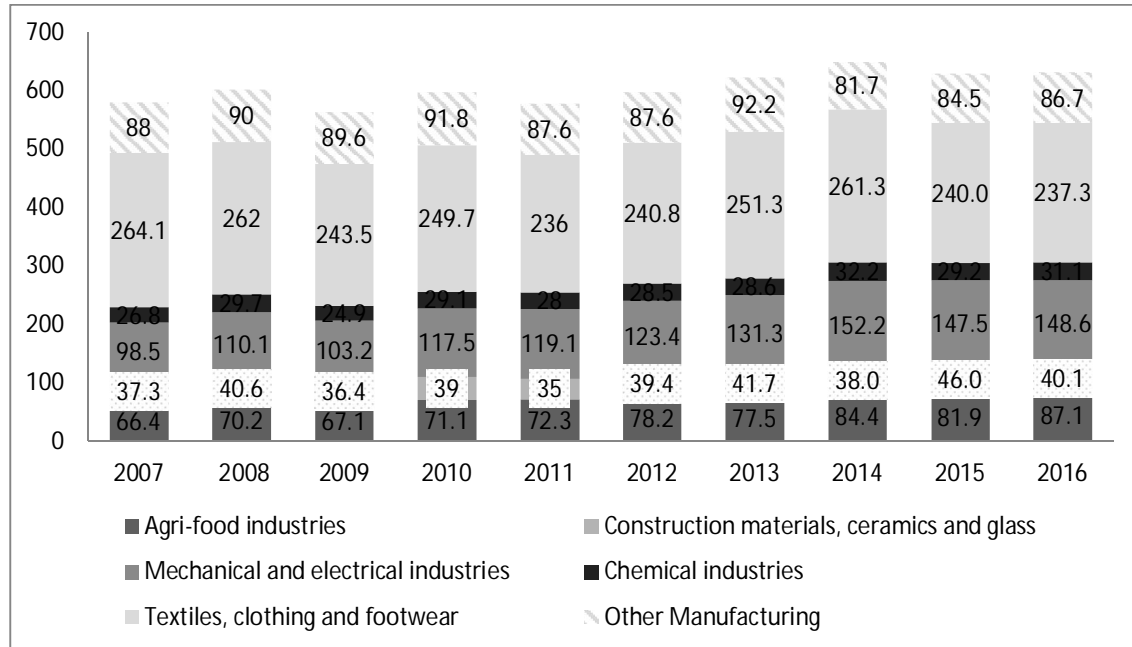
Figure 1: Total Employment (in thousands)

Figure 2: Total Employment (in thousands) and Employment Rate (2007-2016)
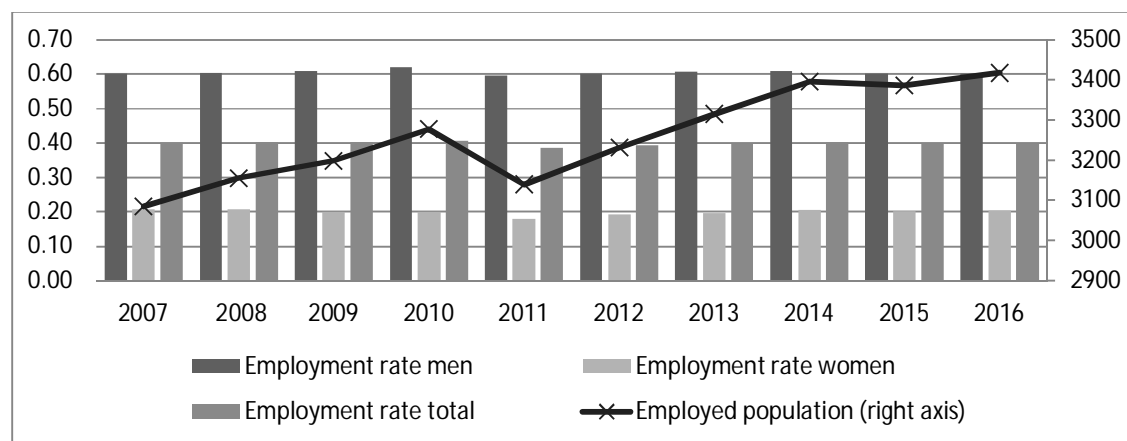
Figure 3: Employment in Manufacturing Sectors (in thousands)
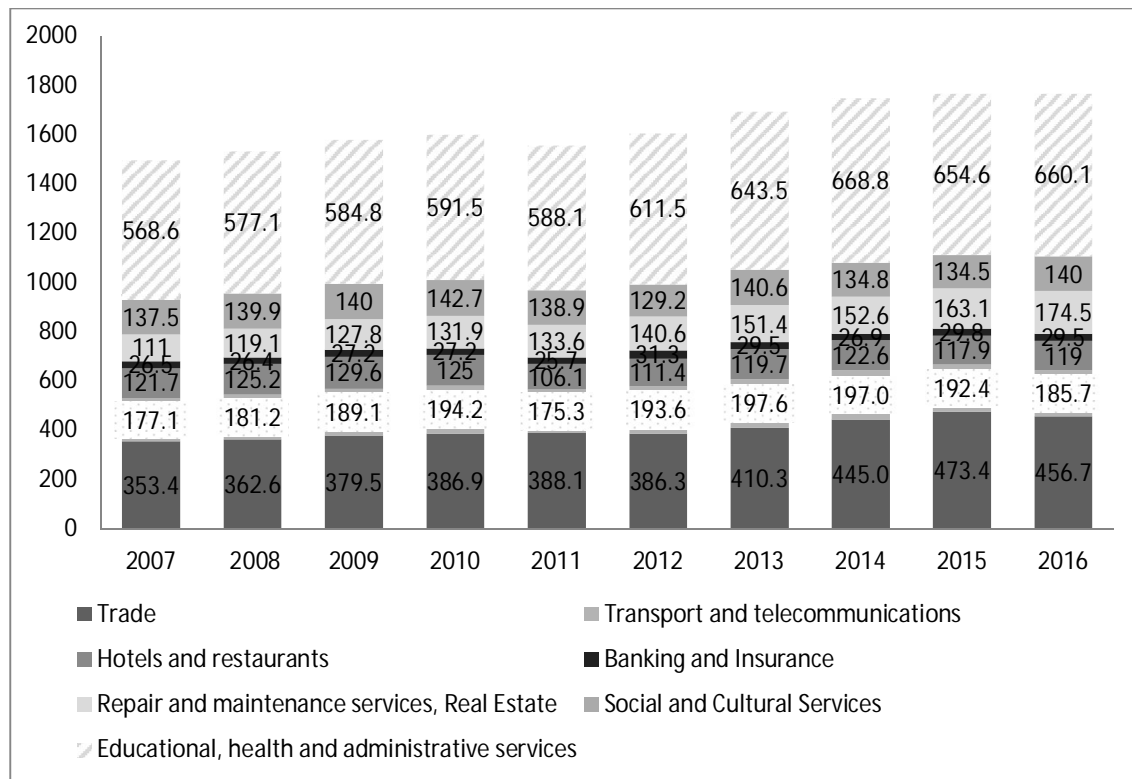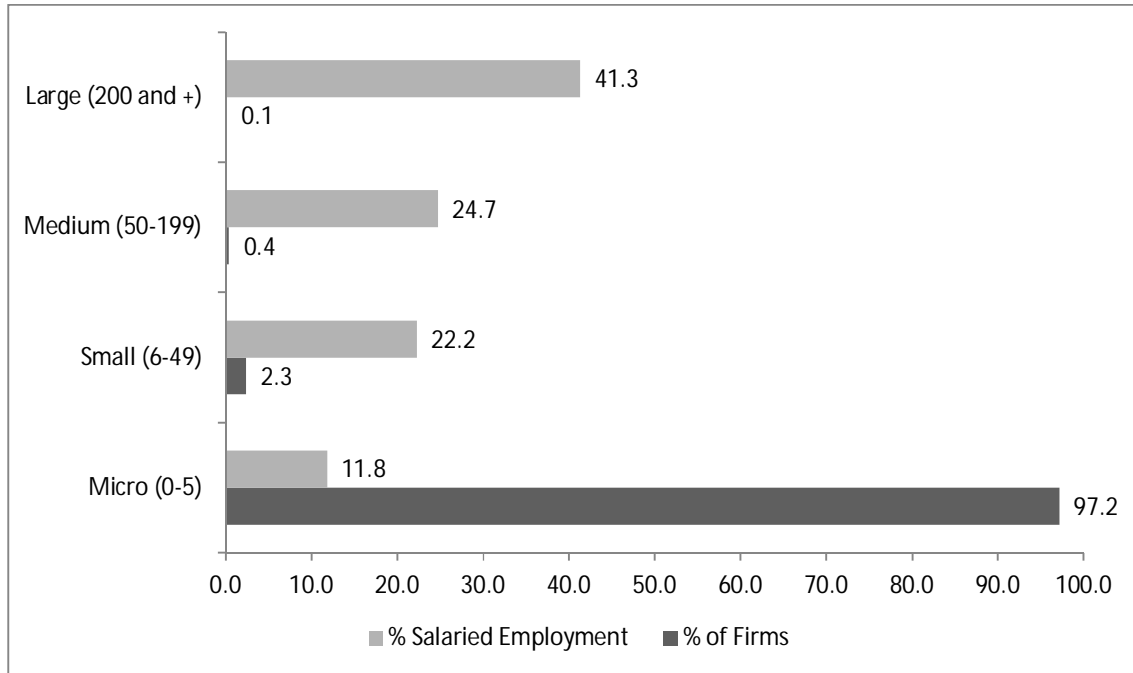

Source: Institut National de la Statistique, National Accounts.

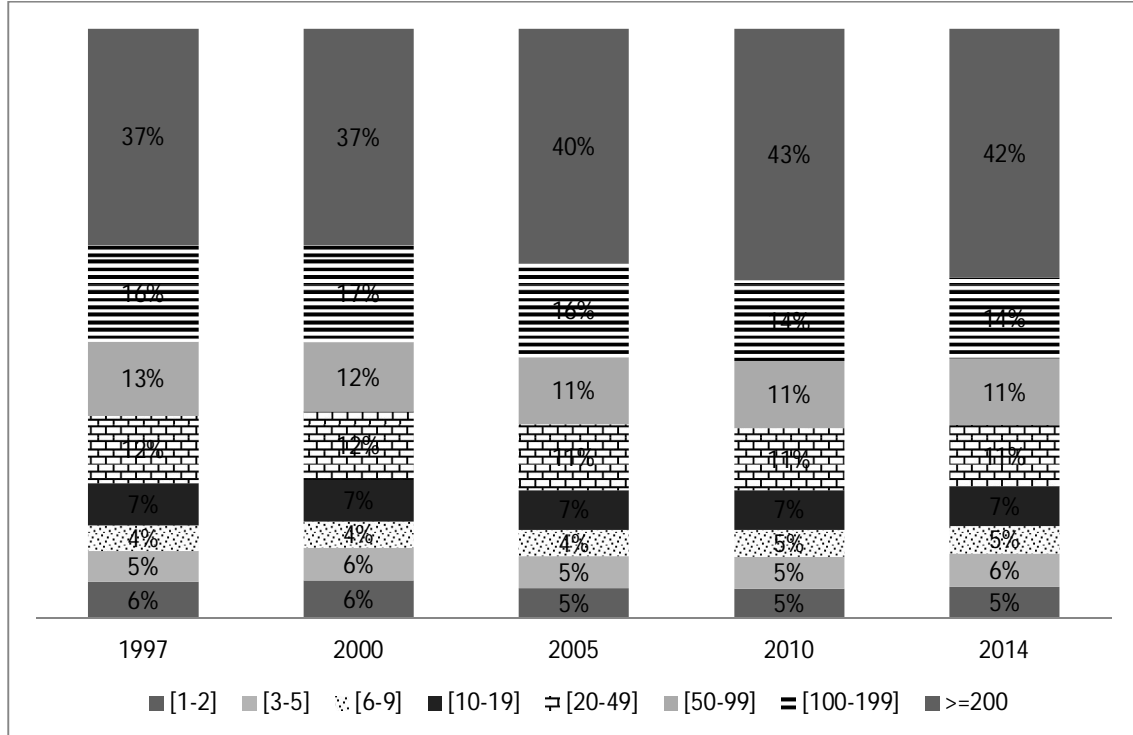**Figure 4: Employment in Services Sectors (in thousands)**

Source: Institut National de la Statistique, National Accounts.

**Figure 5: Distribution of Private Firms by Size and Salaried Employees (%, 2013)**

Source: Institut National de la Statistique, Répertoire National des Entreprises.

Figure 6: Distribution of Employees by Firm Size (2014)

Source: Institut National de la Statistique, Répertoire National des Entreprises.

Figure 7: Structure of Salaried-Employment in the Private Sector (Offshore, Onshore, Local, Foreign Firms) (% and number)
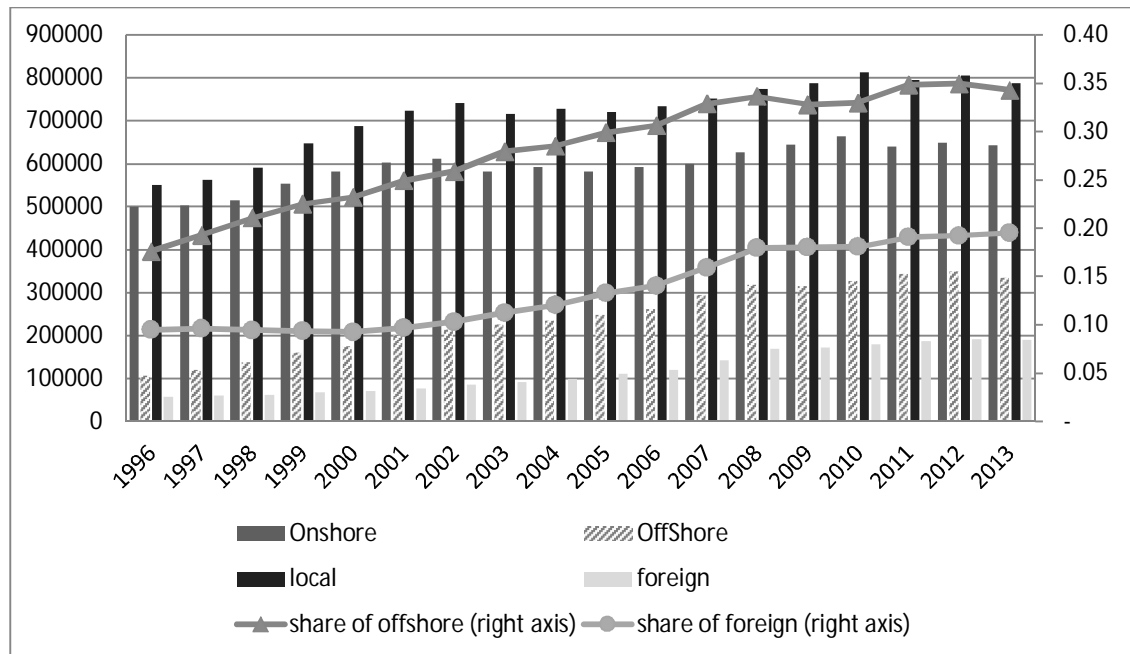
Figure 8: Openness Ratio

Figure 9: Export on GDP, Index (1990=100)
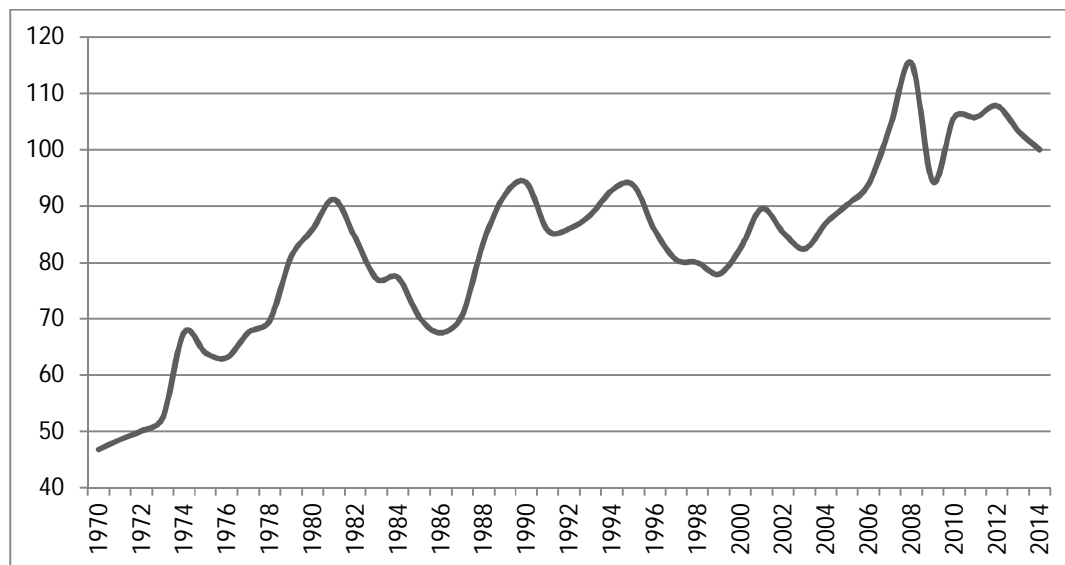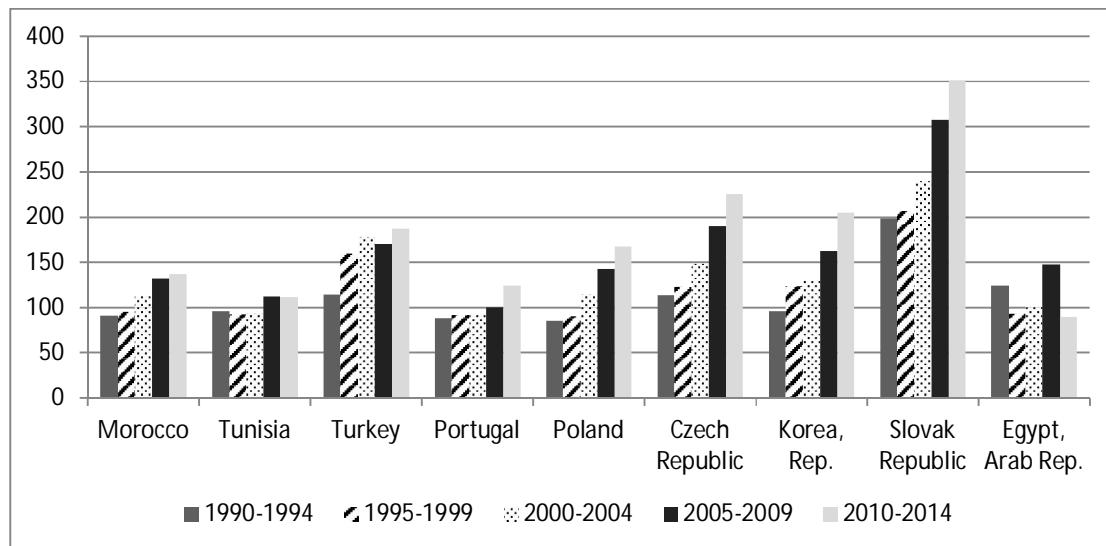
Source: World Development Indicators, The World Bank.

Figure 10: Job Creation/Exports (Constant Prices 2005)
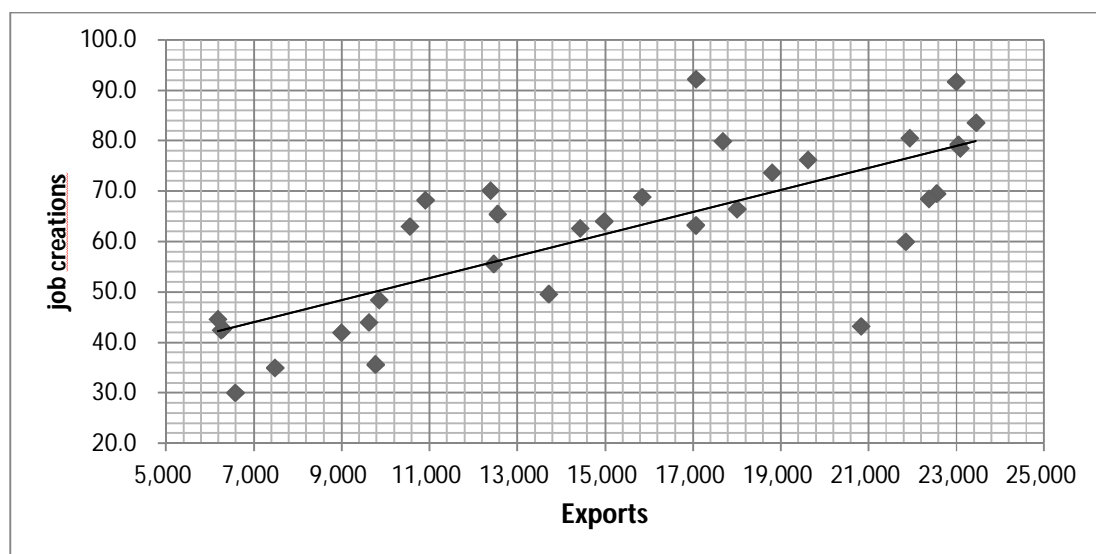
Source: Institut National de la Statistique, National Accounts

Figure 11: Employment Content of Exports
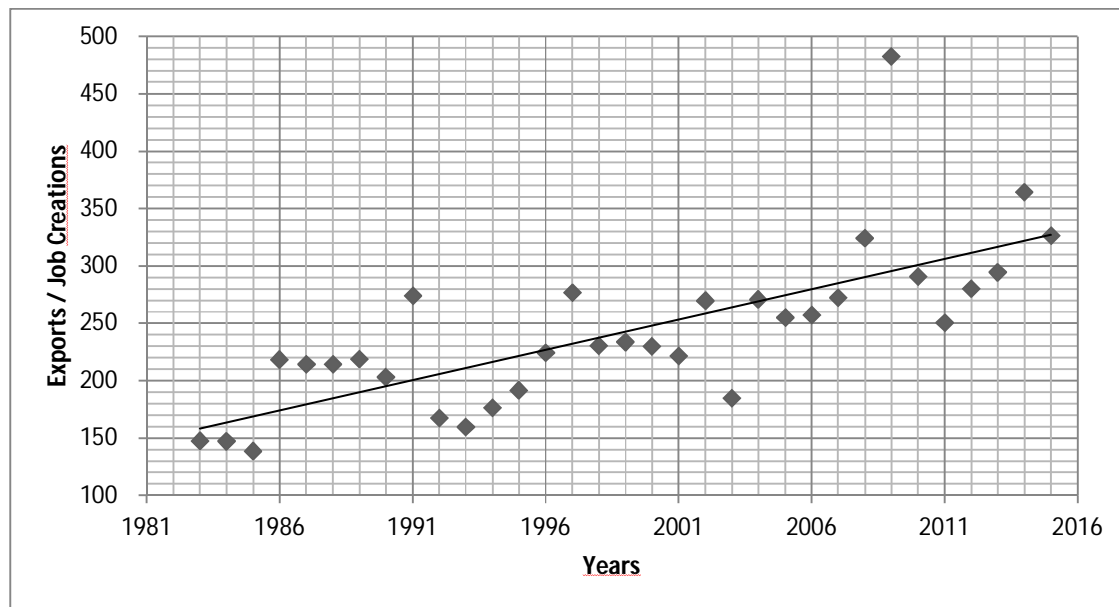
Figure 12: Investment Rate (% GDP)

Figure 13: Structure of Investment
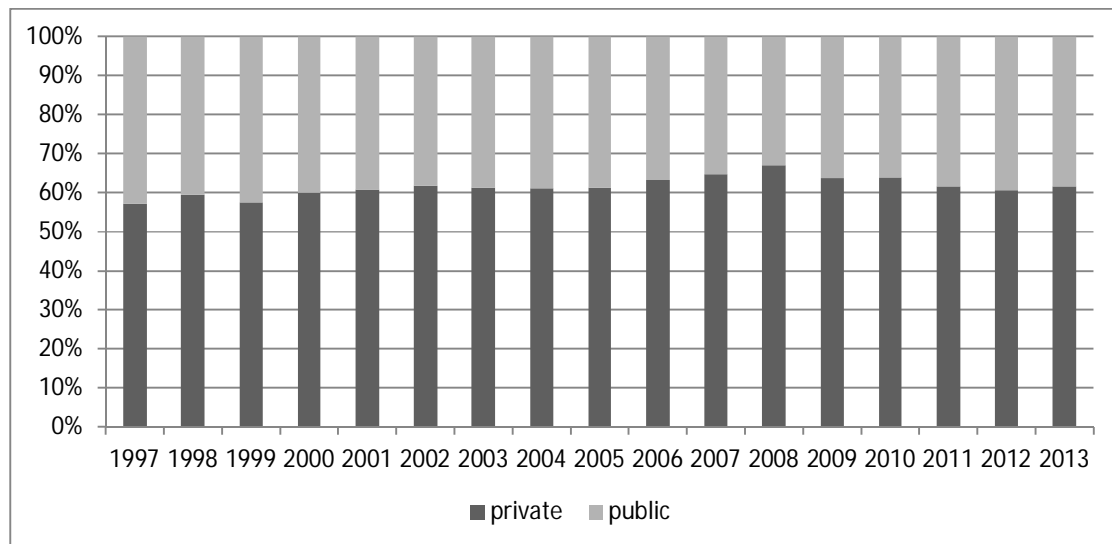
Source: Institut National de la Statistique, National Accounts.

Figure 14: New Business Density (New Registrations per 1,000 People Ages 15-64)
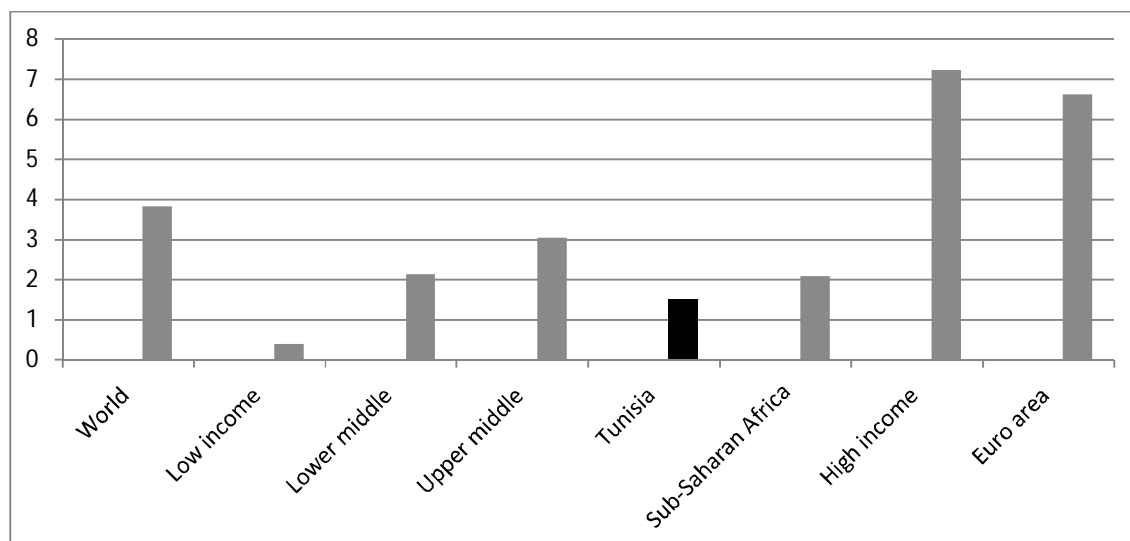
Source: The World Bank, Doing Business (2015).

Figure 15: Number of New Firms
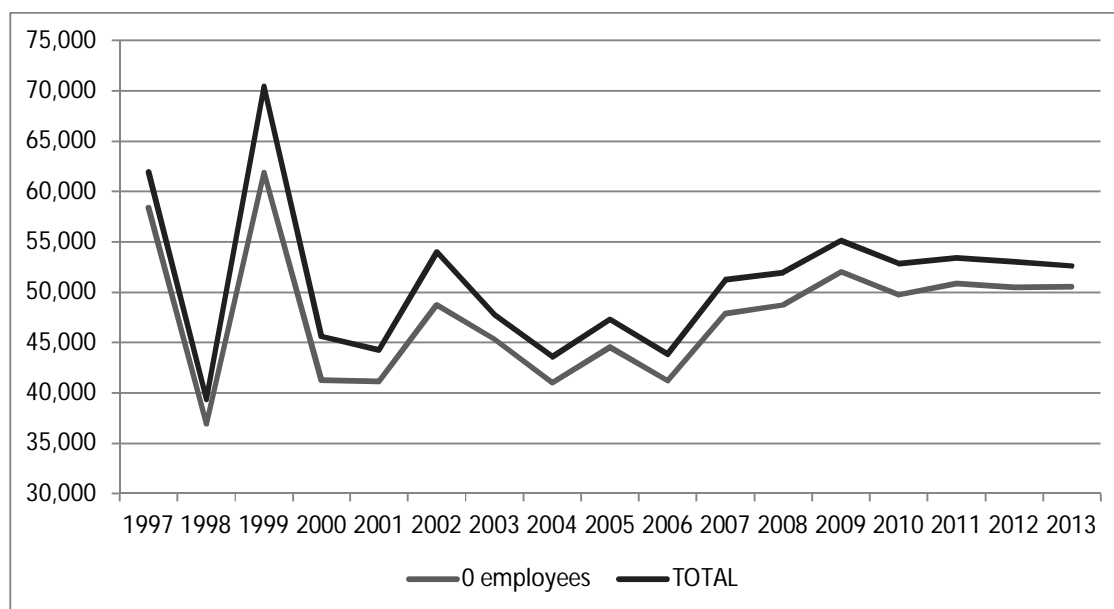
Source: Institut National de la Statistique, Répertoire National des Entreprises.

Figure 16: Distribution of New Enterprises According to their Employment
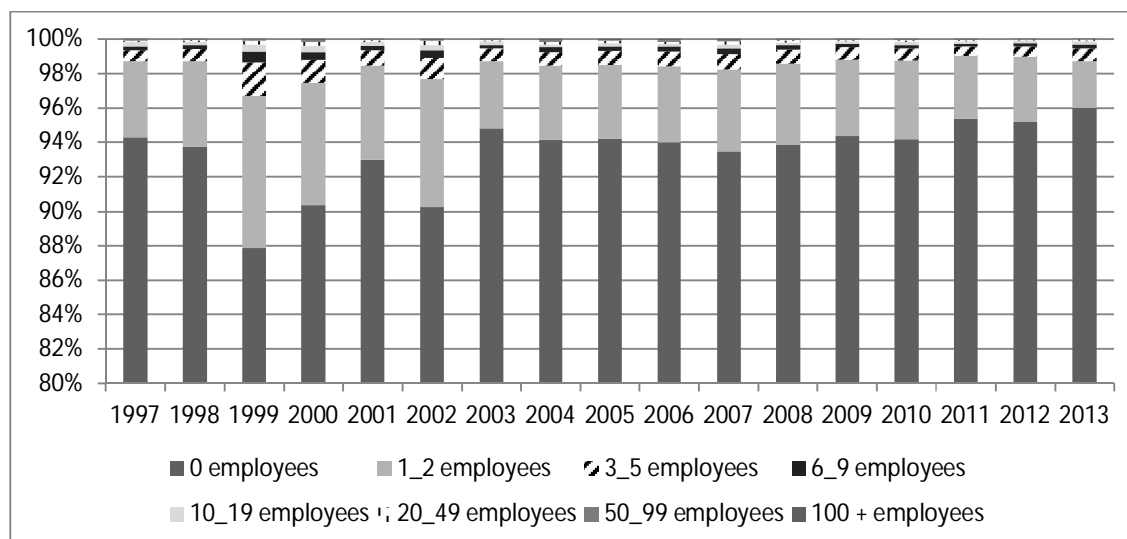
Source: Institut National de la Statistique, Répertoire National des Entreprises**.**

Figure 17: Evolution of the Survival Rate of Firms Created in 2000
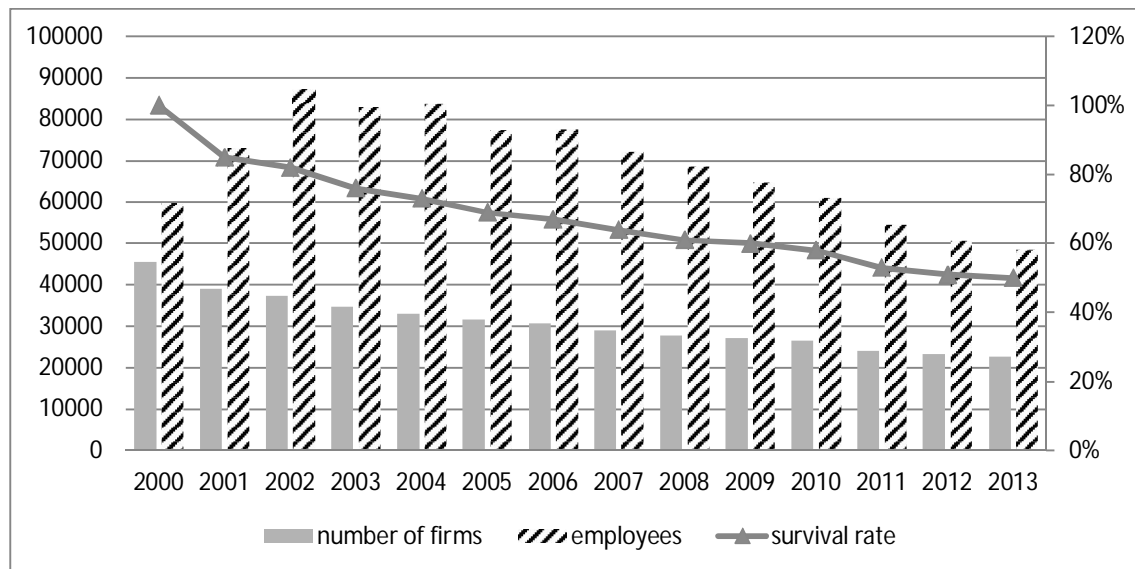
Figure 18: Labor Reallocation across Sectors

18
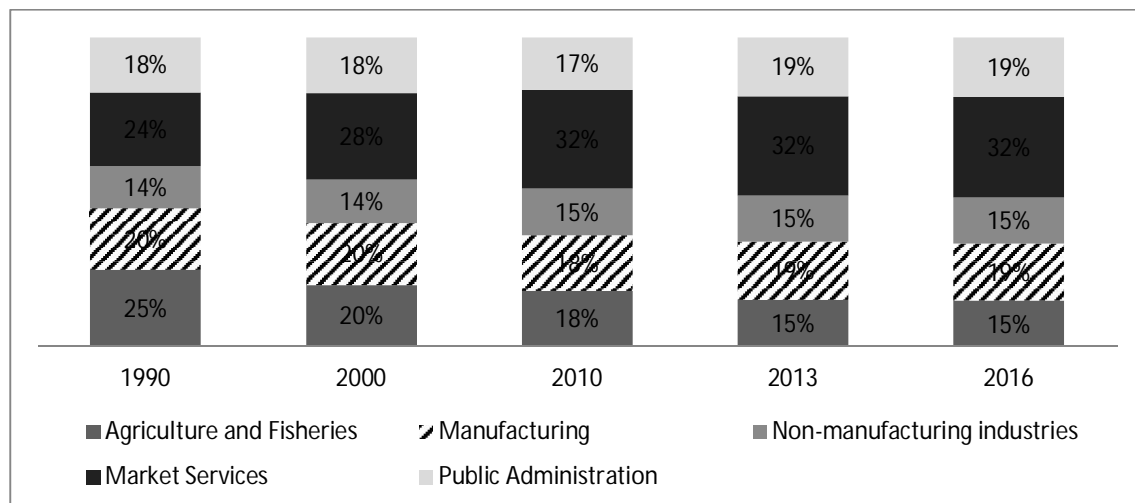
Figure 19: Labor Reallocation Within the Industrial Sector

	1990	2000	2010	2013	2016
Other Manufacturing	15%	15%	17%	16%	14%
Textiles, clothing and footwear	50%	50%	44%	42%	38%
Chemical industries	5%	5%	6%	5%	5%
Mechanical and electrical industries	10%	15%	22%	21%	24%
Construction materials, ceramics and glass	10%	5%	6%	5%	5%
Agri-food industries	10%	10%	11%	11%	14%

■ Agri-food industries ∷ Construction materials, ceramics and glass

■ Mechanical and electrical industries ■ Chemical industries

◿ Textiles, clothing and footwear ▨ Other Manufacturing

Source: Institut National de la Statistique, National Accounts.

Figure 20: Absorption Rate of Tertiary-Educated Workers by Sector (%)
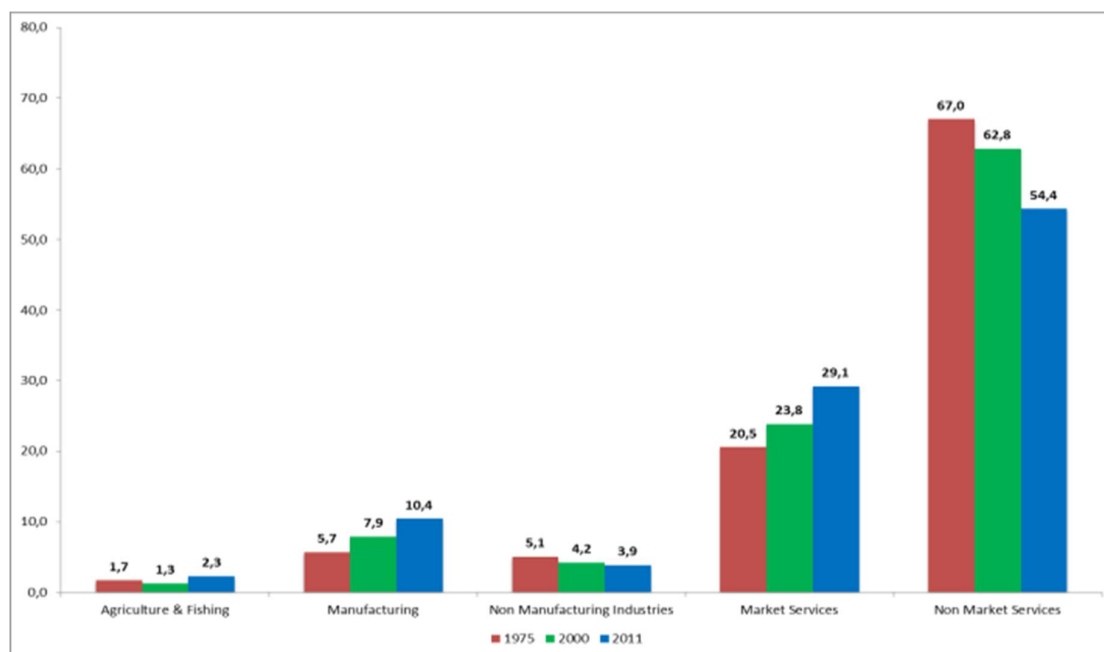
Source: Institut National de la Statistique and Authors.

Figure 21: Evolution of the Managerial Staff Rate

Source: Institut National de la Statistique, ITCEQ and Authors.

Table 1: Sectoral Structure of Employment (in thousands)

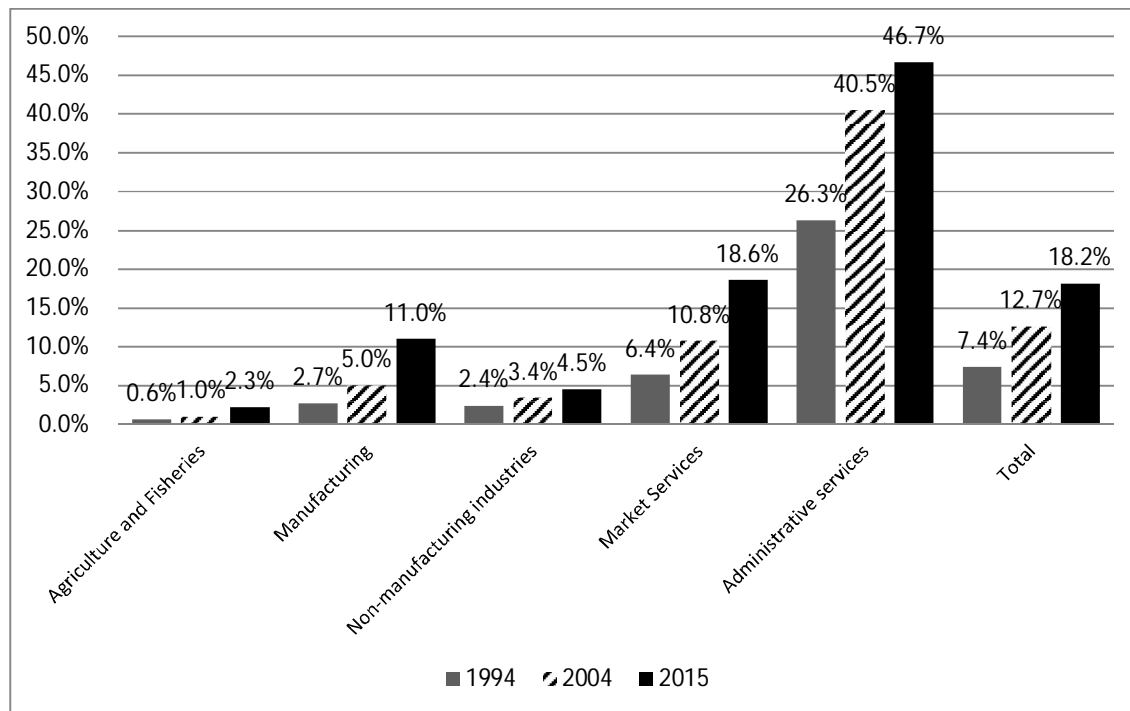|	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agriculture and Fisheries	565.9	557.8	578.9	575.8	510	550	507.4	494.2	499.5	502.4
Manufacturing	581.1	602.6	564.7	598.2	578	597.9	622.6	649.8	629.1	630.9
Non-manufacturing industries	412.8	435.1	448.4	474	473.3	469.6	480.0	494.0	491.8	504.0
Services	1496.1	1531.5	1578	1599.4	1555.8	1603.9	1692.6	1747.5	1765.7	1765.5
Total	3055.9	3127	3170	3247.4	3117.1	3221.4	3302.6	3385.45	3386.1	3402.8

Source: Institut National de la Statistique, National Accounts.

Table 2: Distribution of the Formal Salaried Employees of the Private Sector by Main Activities and by Size of the Firms Measured by the Number of Employees

	[1-2]	[3-5]	[6-9]	[10-19]	[20-49]	[50-99]	>=100	TOTAL
Agriculture, Forestry & Fishing	418	570	888	2 174	3 563	2 745	10 814	21 172
Manufacturing	8 606	15 478	15 684	24 325	55 036	63 462	312 260	494 851
Construction	3 581	5 137	4 204	6 413	8 852	6 996	31 699	66 882
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	18 381	18 428	12 435	15 069	15 100	10 654	32 097	122 164
Transportation and Storage	1 218	1 347	1 528	2 525	3 566	3 232	14 199	27 614
Accommodation and Food Service Activities	5 820	7 211	3 588	3 154	3 389	4 857	40 575	68 594
Information and communication	980	1 150	961	1 757	2 558	1 928	9 592	18 924
Financial and Insurance Activities	526	457	256	567	703	1 182	15 519	19 208
Professional, Scientific and Technical Activities	5 452	3 807	2 466	2 863	3 825	2 589	9 118	30 120
Administrative and Support Service Activities	1 373	1 852	1 706	2 942	5 443	6 565	49 587	69 468
Education; Human Health and Social Work Activities	7 184	2 061	1 586	2 268	1 717	2 840	7 399	25 055
Repair of computers and personal and household goods; Other personal service activities	1 467	663	341	362	605	443	1 097	4 978
Other Activities	895	1 066	892	918	1 292	1 017	3 205	9 285
TOTAL	55 901	59 226	46 535	65 337	105 648	108 508	537 158	978 313

Source: Institut National de la Statistique, RNE (2013).

Table 3: Average Number of Employees Per Firm (Private Firms)

	onshore	offshore	Local firms	Foreign firms	Total
1996	1.4	48	1.56	19.3	1.71
1997	1.4	45	1.58	17.6	1.73
1998	1.4	44	1.56	17.2	1.71
1999	1.5	42	1.76	24.6	1.93
2000	1.6	37	1.83	26.2	2.01
2001	1.5	37	1.85	25.4	2.03
2002	1.5	35	1.80	24.6	1.99
2003	1.3	33	1.65	22.7	1.84
2004	1.3	31	1.61	22.0	1.81
2005	1.2	29	1.52	21.1	1.74
2006	1.2	26	1.48	19.6	1.70
2007	1.2	23	1.47	18.6	1.72
2008	1.2	22	1.45	20.3	1.74
2009	1.2	19	1.41	18.6	1.69
2010	1.1	17	1.39	16.5	1.66
2011	1.1	17	1.35	16.6	1.63
2012	1.1	15	1.31	15.1	1.59
2013	1.0	13	1.23	13.5	1.49

Source: Institut National de la Statistique, Répertoire National des Entreprises.

Table 4: Share of Employment, Services

	1990	2000	2010	2013	2016
Trade	0.08	0.1	0.12	0.12	0.13
Transport and Telecommunications	0.05	0.06	0.06	0.06	0.05
Hotels and restaurants	0.03	0.03	0.04	0.04	0.03
Banking and Insurance	0.01	0.01	0.01	0.01	0.01
Other services	0.07	0.08	0.09	0.1	0.09
Market services	0.24	0.28	0.32	0.33	0.32
Administration	0.18	0.18	0.17	0.19	0.19
Total services	0.42	0.46	0.49	0.52	0.52

Source: Institut National de la Statistique, National Accounts

Table 5: Evolution of the Managerial Staff Rate, by Gender

	1994 (%)			2004 (%)			2015 (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agriculture and Fisheries	0.7	0.1	0.6	1.0	0.1	1.0	2.4	1.5	2.3
Manufacturing	5.2	2.2	2.7	7.4	3.2	5.0	13.1	8.3	11.0
Non-manufacturing industries	2.6	24.1	2.4	3.6	34.1	3.4	3.9	31.7	4.5
Market Services	7.0	11.8	6.4	9.8	17.2	10.8	15.7	28.1	18.6
Administrative services	26.6	38.2	26.3	35.6	51.9	40.5	39.1	59.7	46.7
Total	7.1	10.6	7.4	10.8	17.5	12.7	14.8	28.0	18.2

Source: Institut National de la Statistique, ITCEQ and Authors.