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Improving skills and employment opportunities in Tunisia

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ECONOMICS DEPARTMENT

IMPROVING SKILLS AND EMPLOYMENT OPPORTUNITIES IN TUNISIA

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By Robert Grundke and Steven Cassimon

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ABSTRACT/RESUME

Improving skills and employment opportunities in Tunisia

Unemployment rates have been persistently high, particularly for young labour market entrants. Rising access to education has increased the supply of high-skilled labour, but the private sector has mainly created jobs in low-skill intensive and low-productivity activities, leading to high unemployment rates among tertiary graduates and particularly for women. Moreover, education and professional training systems operate in isolation from labour market needs and do not equip workers with the skills demanded by firms. Labour market policies and regulations discourage formal job creation and complicate the matching process in the labour market. To foster business dynamism and innovation and create more and better jobs, it is crucial to lower regulatory barriers to market entry and entrepreneurship, raise the international integration of domestic firms and adjust labour taxes. The quality of education and professional training needs to improve, and more cooperation with the private sector is necessary to better prepare youth and young adults for the labour market. Better targeting of active labour market policies and reducing barriers to labour mobility are key to improve labour market matching

This Working Paper relates to the 2022 *OECD Economic Survey of Tunisia* https://www.oecd.org/economy/tunisia-economic-snapshot/

JEL codes: J08, J23, J24, J48, I25, I28

Keywords: Labor market, skill mismatch, Tunisia, education, training, labor demand, business environment

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Améliorer les compétences et les perspectives d'emploi en Tunisie

Les taux de chômage restent élevés, surtout chez les jeunes arrivant sur le marché du travail. Le développement de l'accès à l'éducation a permis d'accroître l'offre de main-d'œuvre hautement qualifiée, mais, dans le secteur privé, la majorité des emplois ont été créés dans des activités peu productives et à faible intensité de main-d'œuvre qualifiée, si bien que le taux de chômage est élevé parmi les diplômés de l'enseignement supérieur, particulièrement chez les femmes. En outre, les systèmes d'enseignement et de formation professionnels ne tiennent pas compte des besoins du marché du travail et ne dotent pas les travailleurs des compétences exigées par les entreprises. Les politiques et la réglementation relatives au marché du travail entravent la création d'emplois formels et ne sont pas propices à une bonne adéquation entre les offres et les demandes d'emploi. Pour renforcer la dynamique des entreprises et l'innovation, mais aussi promouvoir la création d'emplois plus nombreux et de meilleure qualité, il est essentiel d'abaisser les obstacles réglementaires à l'entrepreneuriat et à l'entrée de nouveaux acteurs, d'accroître l'intégration internationale des entreprises et d'ajuster les impôts sur le travail. Il faut améliorer la qualité du système d'enseignement et de formation professionnels et favoriser la coopération avec le secteur privé pour mieux préparer les jeunes et les jeunes adultes aux besoins du marché du travail. Un meilleur ciblage des politiques actives du marché du travail (PAMT) et une réduction des obstacles à la mobilité de la main-d'œuvre sont indispensables pour rapprocher l'offre et la demande de travail.

Ce Document de travail se rapporte à *l'Étude économique de l'OCDE de la Tunisie* 2022 https://www.oecd.org/fr/economie/tunisie-en-un-coup-d-oeil/

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Mots Clés: Marché du travail, inadéquation de l'offre et de la demande des compétences, Tunisie, éducation, formation professionnelle, demande de l'emploi, climat des affaires

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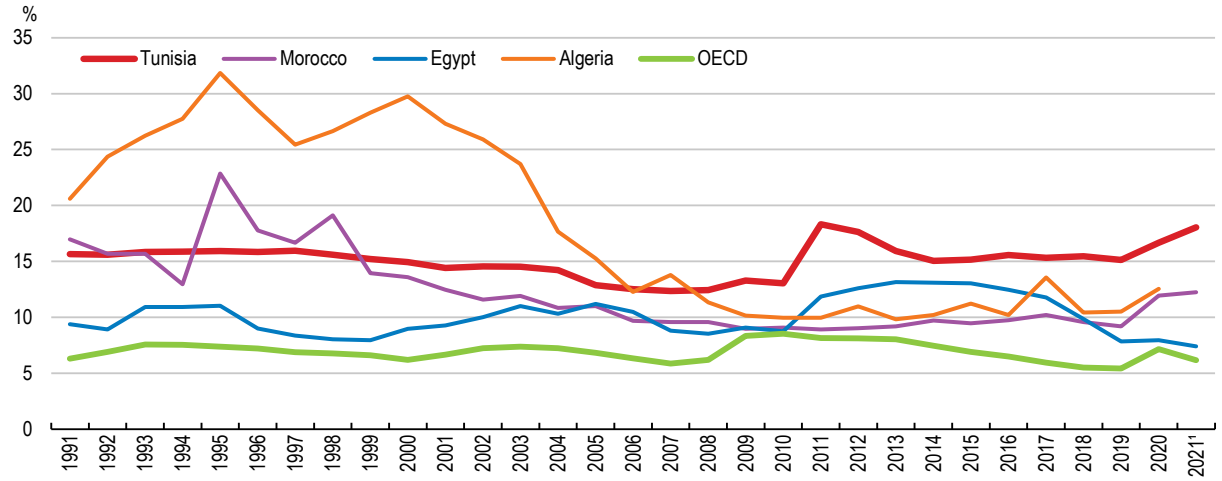
Improving skills and employment opportunities in Tunisia

By Robert Grundke and Steven Cassimon, OECD[1]

The different dimensions of labour market mismatch in Tunisia

For decades, high unemployment has been a characteristic of the Tunisian economy, with unemployment rates hovering above 12% since the 1990s (Figure 1). A broad range of structural factors complicates the adjustment of labour demand and labour supply and prevents the clearing of the labour market. These include institutional factors hampering business dynamics, investment and job creation, education and professional training systems that do not equip workers with the skills demanded by firms, and labour market policies and regulations that complicate the matching process in the labour market.

Figure 1. Unemployment has been persistently high

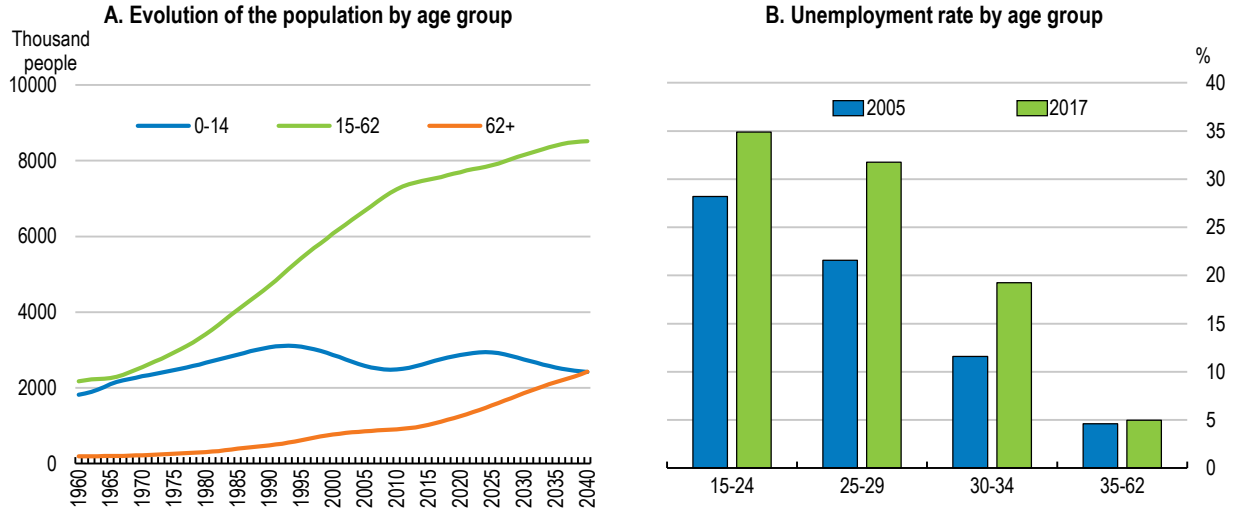


Note: The unemployment rate is calculated as the share of the unemployed in the labour force. National estimates were not available for Algeria past 2017 and ILO estimates were used.
1. The unemployment rate for 2021 in Tunisia is calculated as the average over the first three quarters.
Source: WB; ILO; INS; CEIC; and OECD Economic Outlook database.

[1] Robert Grundke and Steven Cassimon have been the Economist and the Statistician on the Tunisia Desk of the OECD Economics Department. The authors would like to thank Isabelle Joumard and Andrea Goldstein for guidance throughout the preparation of this paper. The paper greatly benefitted from financial and logistical support by the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit). Research inputs by Przemyslav Kowalski from the OECD Trade and Agriculture Directorate, Flavio Calvino, Francesco Manaresi, and Rudy Verlhac from the DynEmp team of the OECD Directorate for Science, Technology and Innovation, Bishoy Sadek, Jibrane Soltani, and Youssef Charfi are gratefully acknowledged. The Embassies of France, Germany and Italy in Tunisia supported the field research for this paper. Other valuable inputs and comments were received from the OECD's Centre for Tax Policy and Administration and the Directorate for Employment, Labour and Social Affairs.

The rise in the working age population has not been matched with sufficient increases in labour demand leading to particularly high unemployment rates among youth (Figure 2) (Boughzala, 2019[1]). The youth unemployment rate rose from 25% in the 1990s to 35% in the early 2010s (ONEQ, 2013[2]). In 2018, more than 85% of the unemployed were younger than 35 years, and more than two thirds younger than 30 years. After entering the labour market, it takes on average around 26.5 months for the young labour market entrants to transition to their first job (Boughzala, 2019[1]). This transition period to the first job has lengthened since 2011, signalling that the insertion of labour market entrants is becoming increasingly difficult (OECD calculations based on ANETI data). Labour demand dropped strongly due to the pandemic, exacerbating existing structural fault lines and leading to rising unemployment, particularly among youth (OECD, 2022[3]).

Figure 2. New labour market entrants have difficulties to find a job

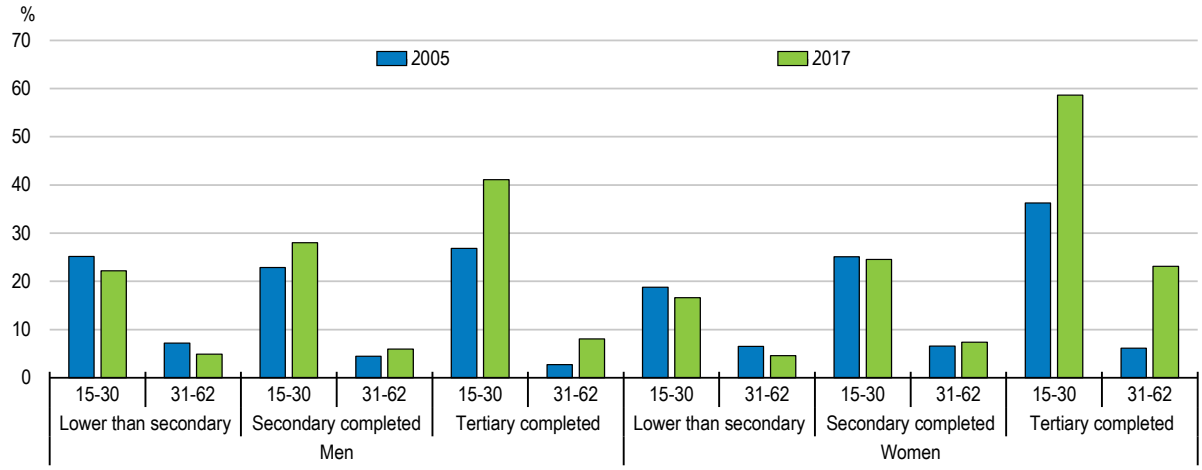


Source: UN Population Statistics; OECD calculations based on the Labour Force Survey, INS.

As access to secondary and tertiary education has significantly improved, the education level of labour market entrants has steadily increased (UNICEF and INS, 2019[4]). The share of the working age population with a tertiary degree has almost quadrupled since the 1990s and reached 28% in 2017. However, as the private sector has mainly created jobs in low-skill intensive and low-productivity activities, the rising supply of high-skilled labour has led to particularly high unemployment rates among tertiary graduates (Figure 3) (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Highly educated women are particularly affected, as they account for more than two thirds of tertiary graduates. Cultural norms, leading to relatively low interregional mobility of single women, as well as job offers with particularly low wages due to labour market discrimination, also contribute to high unemployment of tertiary educated women (Boughzala, 2019[1]).

Figure 3. Unemployment among tertiary graduates is high, especially for women

Unemployment rate by gender, skill level and age category, 2005 and 2017 (in %)

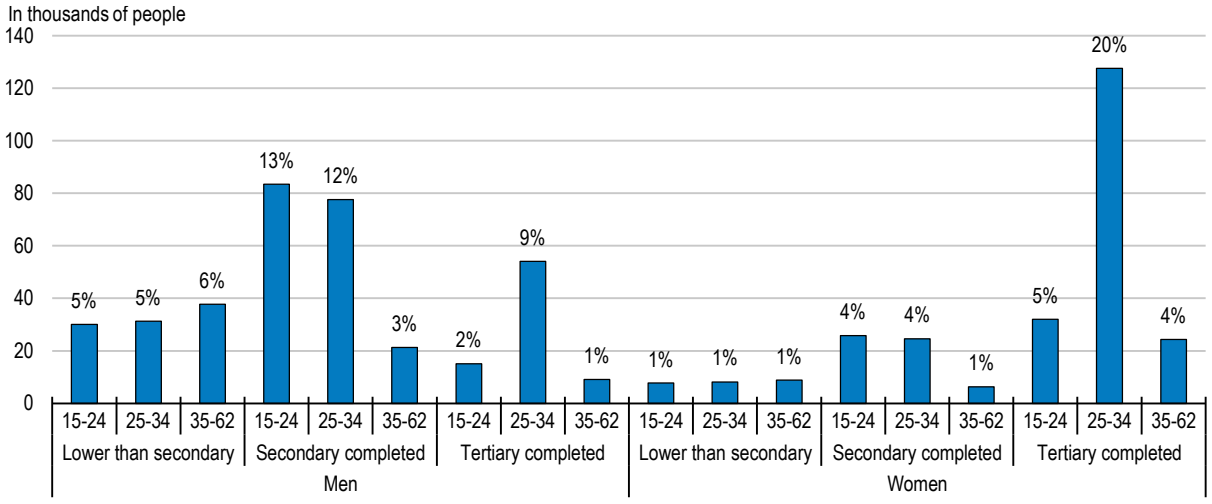


Source: OECD calculations based on the Labour Force Survey, INS.

Although unemployment rates for tertiary graduates are much higher than for other groups, around 60% of the unemployed have not obtained a tertiary education degree (Figure 4). This concerns particularly young men who have dropped out of secondary education or finished it with relatively weak results (Boughzala, 2019[1]). Due to their low level of technical and soft skills, including communication and language skills, they face strong difficulties in finding formal employment and typically end up in low-paid jobs in the informal sector, are long-term unemployed or participate in public work programmes (UNICEF, 2020[6]; Boughzala, 2019[1]). Informality is particularly high among young low-skilled men (see below). This group, despite being particularly vulnerable, has so far not been in the focus of active labour market and training policies and more attention is necessary to facilitate integration into formal employment (Angel-Urdinola, Nucifora and Robalino, 2015[5]).

Figure 4. Many young and low-skilled men are unemployed

Number of unemployed by age, skill level and gender, 2017 (in absolute numbers and shares of total in %)



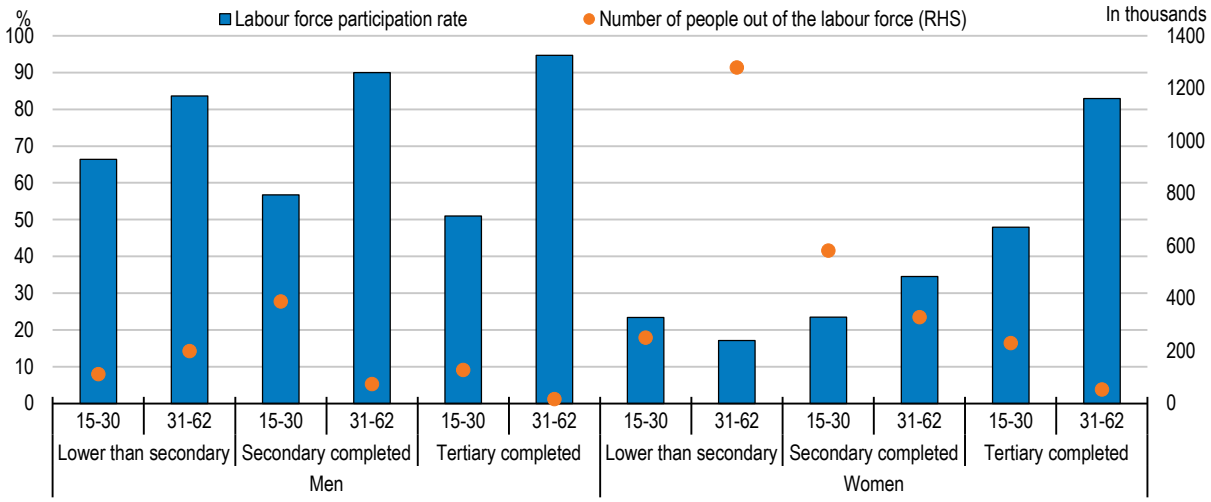
Source: OECD calculations based on the Labour Force Survey, INS.

In addition to the large group of unemployed youth, another group suffers from the structural weaknesses of the labour market: the large share of young women and men that have been discouraged in their job

search and have left the labour market (Figure 5). Although cultural reasons related to family and household work play an important role in the case of women, difficulties to find a job are the predominant reason for leaving the labour force (Boughzala, 2019[1]). For young women without a tertiary education degree, the labour force participation rate is below 25%, whereas it is around 50% for women with tertiary degree and above 70% on average for men (Figure 5). More than half a million of young women are not in education, employment or training (NEET) and do not search for a job (Boughzala, 2019[1]). Together with more than 400 000 young men who are unemployed, this means that more than one third of the young working age population aged between 15 and 29 years are not in education, employment or training (OECD, 2015[7]). This has serious consequences for their human capital, social cohesion and the growth potential of the economy.

Figure 5. Many women without a tertiary education are out of the labour force

Labour force participation rate (in %) and number of people out of the labour force by gender, education and age, 2017



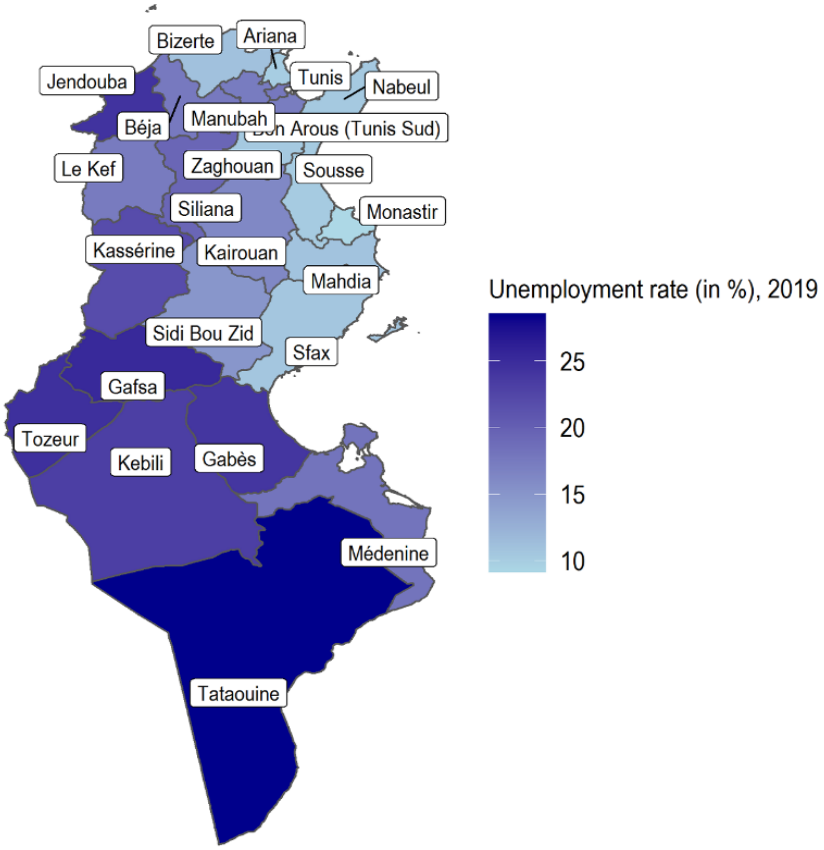
Note: The labour force participation rate is calculated as the share of workers and unemployed in the working age population by age groups.
Source: OECD calculations based on the Labour Force Survey, INS.

The regional dimension is key to understand the labour market mismatch in Tunisia. Unemployment rates range from below 10% in some coastal governorates to almost 30% in some southern ones (Figure 6). This is mainly due to a strong concentration of economic activity and job creation in coastal regions, which dates far back in history and is mainly related to access to maritime trade and favourable conditions for agriculture (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Past economic policies have reinforced regional disparities through the development of industrial clusters and special exporting ("offshore") zones close to the coast (OECD, 2015[8]). Infrastructure, industrial and innovation policies have favoured coastal regions and few economic linkages between firms in coastal regions and firms in interior provinces exist (OECD, 2018[9]; Angel-Urdinola, Nucifora and Robalino, 2015[5]). The strong centralisation of the state and public administration and the weak adaptation of economic and social policies to regional contexts have contributed to these inequalities (OECD, 2018[9]).

Persisting regional disparities in unemployment rates indicate a relatively low internal mobility of labour (Figure 6). Although migration from interior to coastal regions and in particular to the Tunis metropolitan area took place during the last decades, significant obstacles to labour mobility remain. Due to weak income support to the unemployed, many of them rely on support from the family for housing and food, which reduces their geographic action space in the labour market (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Moreover, cultural norms amplify these barriers for single women, who may face difficulties to travel and live alone far away from the family (Bouchoucha, 2018[10]). This is not only a problem for lower

skilled young women, but also for tertiary graduates, who have to return to their family after finishing their studies, if they do not find a job directly after graduation (OECD, 2015[7]). Rising house and rental prices complicate migration from interior regions to urban centres (OECD, 2022[3]). Weak road and public transport infrastructure make commuting difficult, particularly for low-skilled and poorer workers, who cannot afford a car or motorcycle. High tariffs and excise taxes as well as restrictive import and distribution licenses raise prices for these products, contributing to low labour mobility (WTO, 2016[11]).

Figure 6. Unemployment rates differ strongly across governorates



Source: Institut National de la Statistiques de Tunisie (INS).

Although unemployment rates are high, many firms in low-skill intensive sectors, such as textile, construction, tourism, and agriculture, report that they do not find workers with the skills they need (Boughzala, 2019[1]; IACE, 2019[12]). This is related to many idiosyncratic factors, but some common factors contribute to these mismatches between labour demand and supply. First, the regional concentration of economic activities combined with low interregional labour mobility reduces the potential labour supply for these sectors. For example, the textile industry is highly concentrated in the province of Monastir and tourism activities are mainly located in coastal areas, particularly in the bay of Hammamet. A second important explanation are skill and qualification mismatches resulting from the low quality of basic education, initial VET and tertiary education, which fail to internalise the skill needs of the private sector (see third section of this chapter).

Third, low wages, difficult working conditions and weak human resource (HR) practices in low-skill intensive sectors make job offers unattractive (Angel-Urdinola, Nucifora and Robalino, 2015[5]). In particular, reservation wages of unemployed tertiary graduates are relatively high due to the negative cultural connotation of blue-collar work and the high attraction of public employment, which has strongly

increased since 2011. Moreover, active labour market policies are mostly focused on tertiary graduates and coastal regions, failing to better prepare the lower skilled as well young tertiary graduates from interior regions and insert them into the formal labour market. Public employment services are weak and existing labour market institutions reduce labour mobility. These issues are discussed in more detail in the fourth section of this chapter. In what follows, the report sheds some light on the current and future structure of labour demand and policies to create better job opportunities.

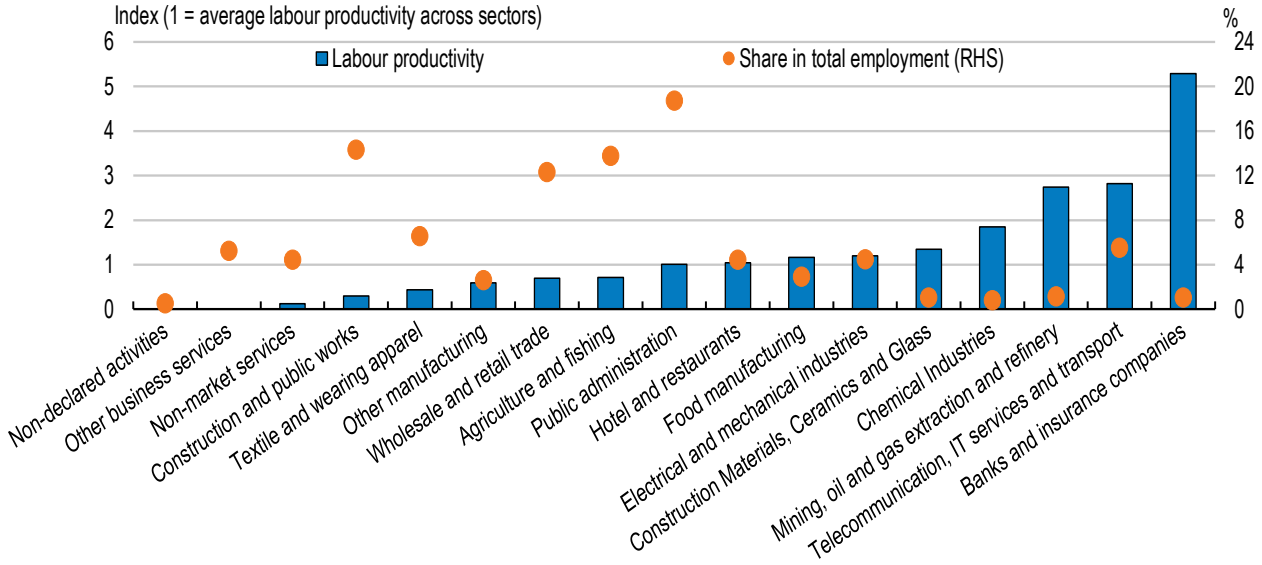
Creating more and better jobs to reduce unemployment

Job creation has been concentrated in low-productivity activities

Not only has net job creation been too weak in absolute values to absorb young labour market entrants and lower unemployment, but it has also been concentrated in low-productivity activities and skewed towards low-skilled employment (Figure 7) (Boughzala, 2019[1]). Compared to other Emerging Market Economies (EMEs), the share of workers in low-productivity sectors is high in Tunisia reflecting past economic policies that have focused on attracting low-value added activities (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Although textile and wearing apparel industries have slightly decreased employment, other low-skill intensive sectors such as retail and construction have been the main drivers of employment growth since 2007 (Figure 8, Figure 9) (Boughzala, 2019[1]).

Figure 7. Employment is concentrated in low-productivity activities

Employment by activity as a share in total employment (in %), labour productivity by activity normalised by average labour productivity, 2019

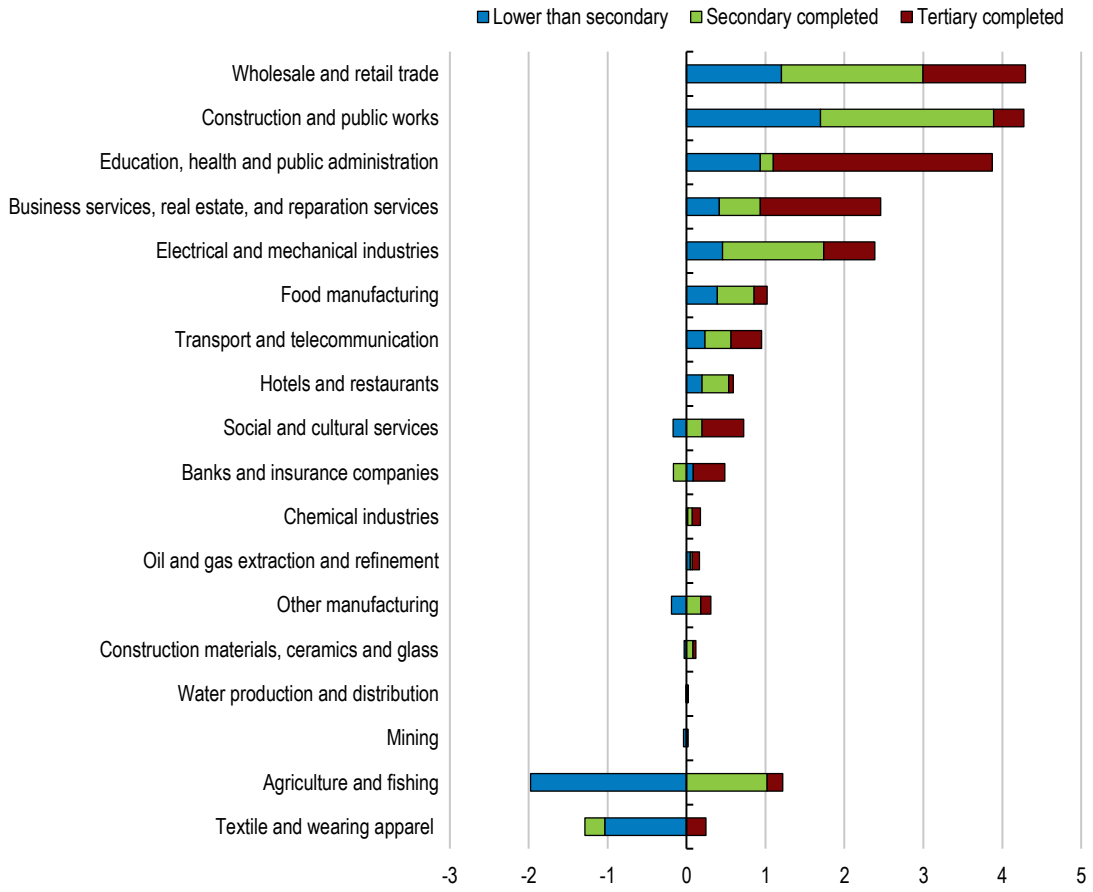


Note: Employment data from the labour force survey includes formal and informal employment. Labour productivity is measured as GDP at factor cost (in 2010 prices) divided by the total number of employees working in each sector. Labour productivity has been normalised by dividing labour productivity of each sector by the average labour productivity across sectors. Thus, an index higher than 1 implies that employees in that sector are more productive than on average across all sectors. As sectoral classifications for real estate, repair and business services could not be mapped between the GDP and the employment data, no estimate for labour productivity could be derived.
Source: OECD calculations based on data from CEIC and INS.

However, employment has also grown in some high-skill intensive sectors, particularly in the public sector (including public administration, education and health as well as state-owned enterprises), which has absorbed the largest share of tertiary graduates since 2007 (Figure 8). Other activities that have generated jobs for a significant amount of tertiary graduates are Information and Communication Technology (ICT) and business services, and retail. Although some manufacturing sectors such as mechanical and electrical industries have increased employment of tertiary graduates, 52% of jobs in mechanical and electrical industries are low-skilled blue collar and 28% are high skilled-blue collar (Figure 9). This indicates that many tertiary graduates might be overqualified for these jobs and that the absorption capacity for tertiary graduates in these industries is limited. This is confirmed by results based on a firm survey on skill needs conducted by the OECD, which shows that over-qualification is particularly high in automobile and mechanical and electrical industries leading to difficulties to retain employees (Annex A.1, Figure A.2). As the precarious fiscal situation will not allow to further increase public employment, increasing demand for high-skilled labour needs to come from a more dynamic private sector that expands into higher value-added activities (Boughzala, 2019[1]; Angel-Urdinola, Nucifora and Robalino, 2015[5]).

Figure 8. Some high-skill intensive activities have increased employment

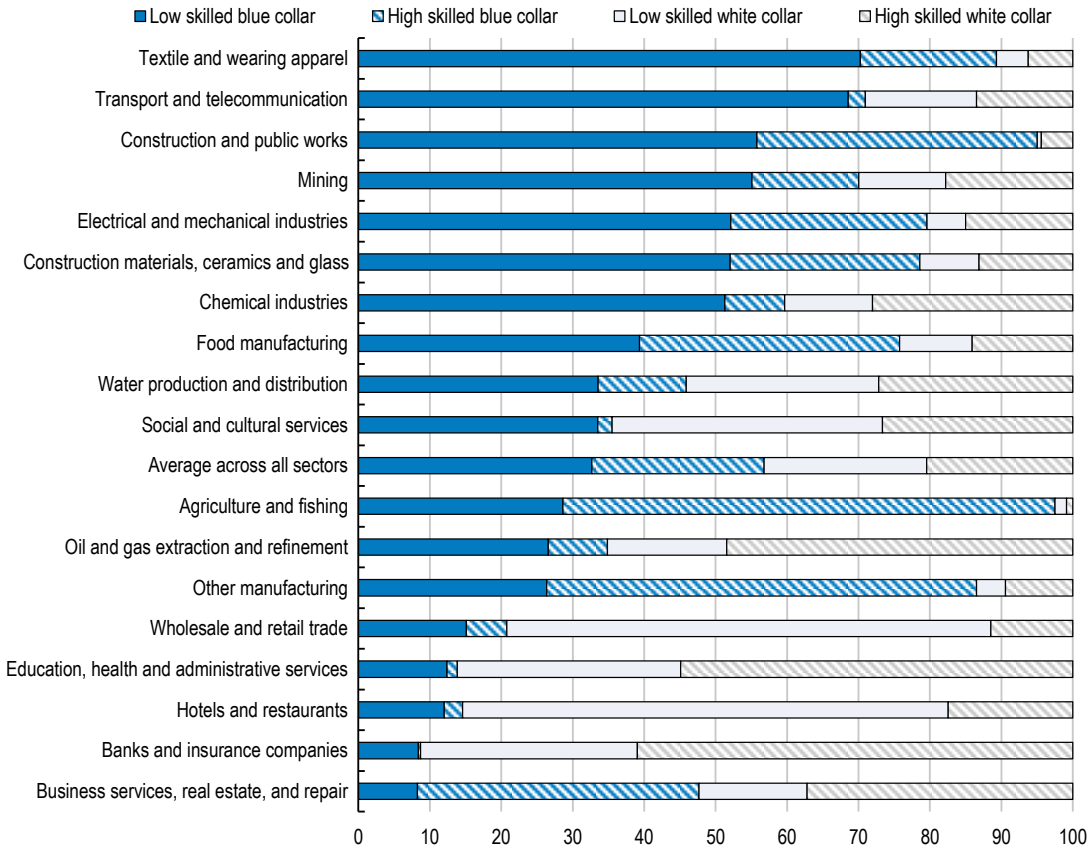
Contributions to total employment growth by activity and education level, 2007-2019 (in percentage points)



Note: Employment data from the labour force survey includes formal and informal employment.
Source: OECD calculations based on data from the Labour Force Survey of the National Institute of Statistics.

Figure 9. Many manufacturing industries predominantly created low-skilled blue collar jobs

Share of workers by occupation category and by activity, 2017 (in %)



Note: According to the International Standard Classification of Occupations (ISCO 08) low-skilled blue collar workers comprise plant and machine operators and assemblers and elementary occupations. High-skilled blue collar workers include skilled agricultural and fishery workers and craft and related trades workers, whereas low-skilled white collar workers include clerks and service workers and shop and market sales workers. High-skilled white collar workers include legislators, senior officials and managers, professionals as well as technicians and associate professionals.
Source: OECD calculations based on data from the Labour Force Survey of the National Institute of Statistics.

Formal job creation in the private sector has been dominated by offshore firms, which are predominantly export-oriented and enjoy preferential conditions in terms of taxes, tariffs, administrative procedures, and access to customs and trade infrastructure (Joumard, Dhaoui and Morgavi, 2018[13]; World Bank, 2020[14]). Offshore firms account for 47% of formal sector jobs created by the private sector from 2005 until 2019, although they represent only 4% of registered firms (OECD calculations based on RNE firm level data). Employment in offshore firms has grown by 60% from 2005 until 2019 and they increased their share in total formal private sector employment to 35%. In contrast, employment in onshore firms, which primarily serve the domestic market and are shielded from international and domestic competition by significant tariff and non-tariff barriers, administrative barriers to firm entry and weak competition enforcement, has only grown by 28% since 2005 (World Bank, 2020[14]). Formal job creation in onshore firms has been driven by wholesale and retail trade, food manufacturing, and private education and health services (Figure 10).

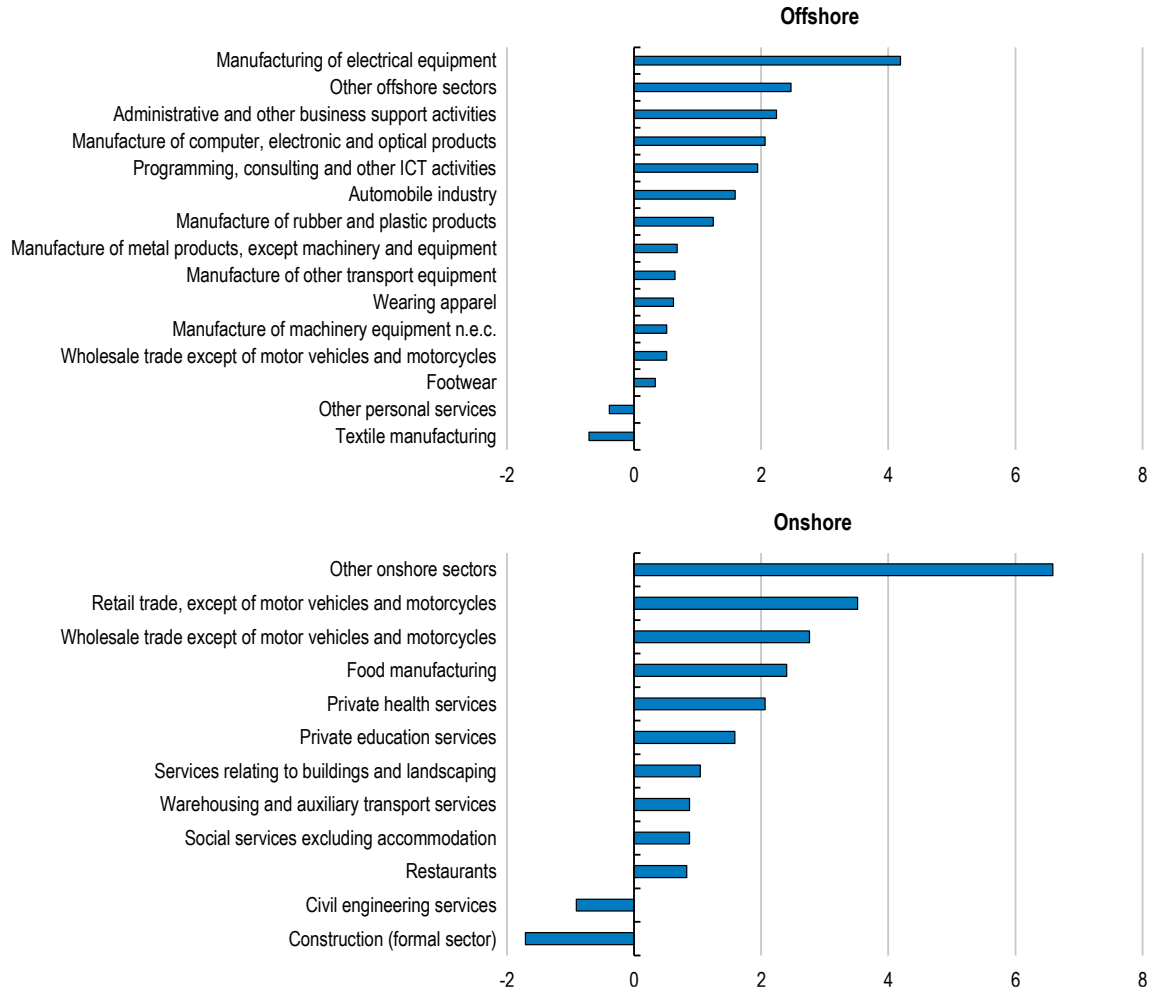
The offshore sector is shifting towards more skill-intensive and higher value-added activities, such as manufacturing of electrical and ICT equipment, as well as ICT and business services, which have strongly increased employment since 2005 (Figure 10). The 1998 association agreement with the European Union has improved access to better quality inputs and capital goods for manufacturing firms and opened up potential markets for higher value-added products (European Commission, 2021[15]). This has particularly

benefitted the mechanical and electrical industries, which have increased their share in GDP from 3% in 2002 to 5.4% in 2019, and their share in total merchandise exports from 19% to 47%.

Textile and wearing apparel industries, which are intensive in low-skilled labour and are characterised by low labour productivity, have traditionally dominated the offshore sector, and still account for 44% of total offshore employment in 2019 (Figure 7, OECD calculations based on RNE firm level data). Due to the phasing-out of the Multi-fibre Arrangement and increasing competition from China, their share in GDP has declined from 5.4% in 2002 to 2.5% in 2019, and their share in total merchandise exports from 49% to 21%, respectively (OECD calculations based on data from INS). However, these industries are also undergoing structural change towards higher value added activities, as employment in wearing apparel and footwear has increased, whereas employment in the production of textile fibres has strongly decreased (Figure 10). The unit value of Tunisian textile exports to the EU is among the highest across EU importers (Plank and Staritz, 2014[16]).

Figure 10. Formal job creation in offshore vs. onshore firms

Contribution to total formal employment growth in offshore and onshore firms by activity (in percentage points), 2005-2019



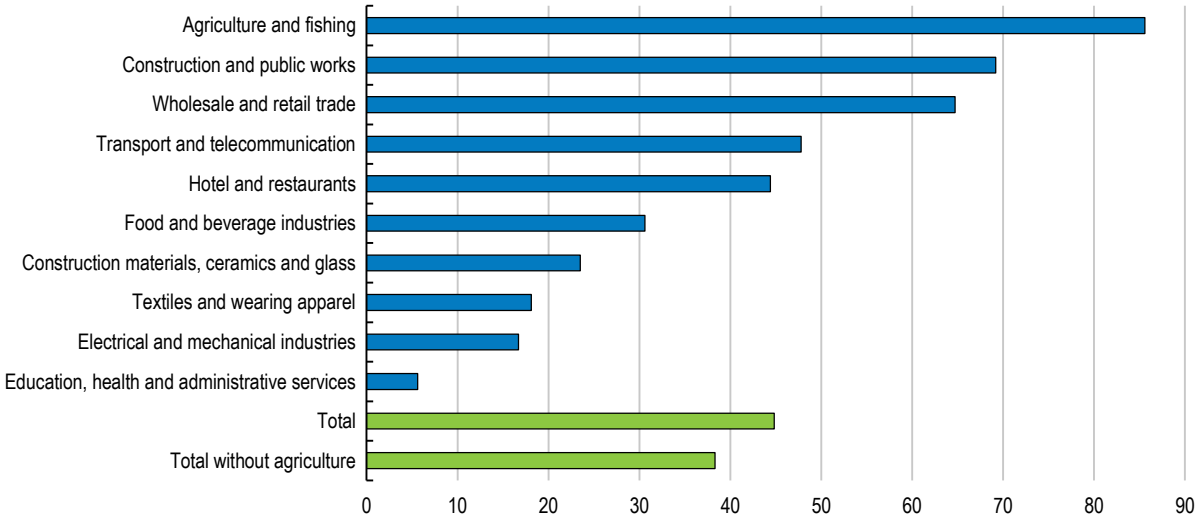
Note: Formal employment in the private sector grew by 38% from 2005 until 2019. Offshore firms accounted for 47% of these jobs, and onshore firms for 53%.
Source: OECD calculations based on firm level data from the Répertoire National des Entreprises (RNE).

Informality, which is defined as working without social security card or at firms not registered with the tax administration, has increased, particularly in the onshore sector. When comparing sectoral employment

growth from firm level data, which include only formal private sector employment, with data from the labour force survey, which includes formal and informal employment, it becomes clear that a significant share of job creation in the onshore sector has been informal. In particular, construction, retail, and hotels and restaurants have increased informal employment (Figure 8, Figure 10, Figure 11). Since the mid-2000s, the share of informal employment in the economy has increased to 45% in 2019 (INS, 2020[17]; CRES, 2016[18]). The informality rate is highest in agriculture with 86%, followed by construction and public works with 69% and retail with 65% (Figure 11). Even in manufacturing industries dominated by offshore firms, such as textile and wearing apparel and mechanical and electrical industries, informality rates are higher than 15%. Jobs in the public sector are mostly formal, contributing to their high attractiveness for young tertiary graduates (Boughzala, 2019[1]).

Figure 11. Informality is high in many sectors

Share of informal employment in total employment by activity, 2019 (in %)



Note: Informal employment is defined as working without social security card or at firms not registered with the tax administration.
Source: (INS, 2020[17]).

Informal employment is particularly concentrated among men below 30 who have not completed secondary education (INS, 2020[17]). They mostly work in small informal firms, receive low wages, have no access to social security, and suffer from difficult working conditions due to non-compliance with health and safety standards (Boughzala, 2019[1]). Although in many EMEs, informal work might help young people to transition to the formal labour market, transition rates from informal to formal jobs have been relatively low in Tunisia (Angel-Urdinola, Nucifora and Robalino, 2015[5]). The share of informal employment is very high in border regions, where smuggling activities and illicit retail trade are widespread (Ayadi et al., 2013[19]; CRES, 2016[18]). Incentives for illicit cross-border trade are high as price differentials for many goods are large due to significant differences in subsidy and tax systems and high tariff and non-tariff barriers in Tunisia (Ayadi et al., 2013[19]). Moreover, weak enforcement capacities encourage smuggling activities and informal employment.

Even in the formal sector, employment conditions are often precarious. More than 40% of young women and men work in low-skilled blue collar jobs, with women predominantly working in assembly activities in textile and mechanical and electrical industries, and young men as non-qualified labourers (Boughzala, 2019[1]). More than 55% of the young are employed on the basis of oral work contracts, which are of short duration (Boughzala, 2019[1]). The share of open-ended contracts is low, as many firms in low-skill intensive sectors avoid high firing costs and tap a large pool of unemployed or inactive youth (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Employed tertiary graduates have generally better working conditions and earn higher wages than lower-skilled workers, but often have to accept jobs different from their field of study and for which they are overqualified. This concerns particularly graduates from technical tertiary education and humanities (Boughzala, 2019[1]).

Improving the business environment to raise productivity and create better job opportunities

To reap the potential that the increasing number of secondary and tertiary education graduates could have for economic growth, structural reforms are needed to allow for a more dynamic domestic business sector and the development of higher-value added activities. Real wages and living standards can only rise in the long-run, if productivity increases. This requires more and better investment in physical and human capital, but also a more efficient allocation of labour and capital to more productive firms and sectors (Haltiwanger et al., 2013[20]; Hsieh and Klenow, 2009[21]).

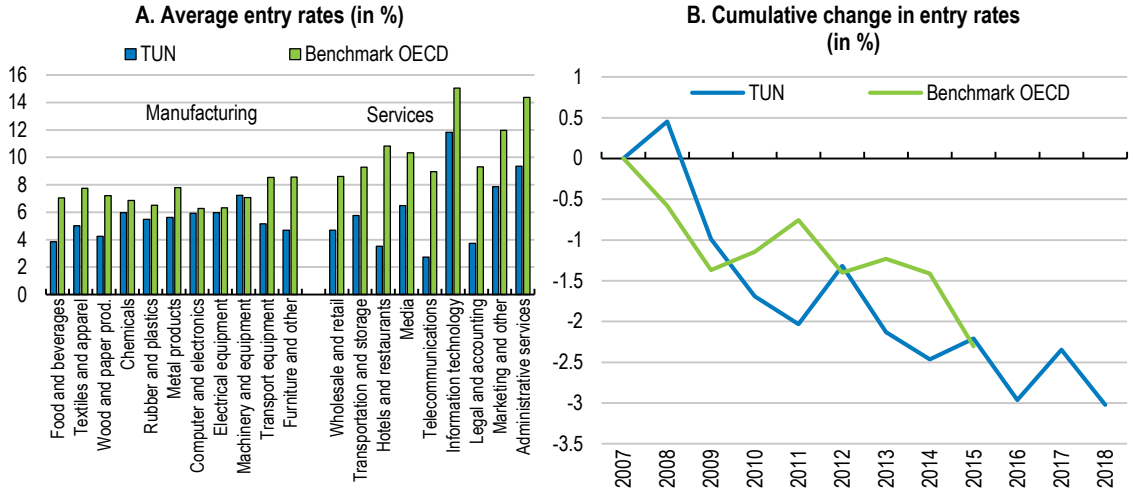
Barriers to firm entry and anti-competitive regulation reduce competition and weaken incentives for innovation and improvements in production processes among incumbent firms (Morsy, Bassem and Selim, 2018[22]). Authorisation regimes for entering a new market or offering a new product or service are numerous and involve opaque and lengthy procedures, discouraging entrepreneurship and investment (World Bank, 2020[14]). The tax system is over-complex due to many different subsidy and tax-incentive regimes, leading to high administrative burden and discouraging market entry and formalisation, particularly for smaller firms (OECD, 2018[9]). The competition framework and enforcement capacities of the Competition Council are weak, making it more difficult to fight anti-competitive practices of incumbent firms (Morsy, Bassem and Selim, 2018[22]). In addition, SOE prevalence extends to non-strategic sectors and price controls and producer subsidies distort the functioning of markets hindering market entry and competition (OECD, 2022[3]).

Analysis conducted for this survey finds that firm entry rates in Tunisia are low compared to benchmark countries, particularly in protected sectors dominated by onshore firms, and have decreased over the last decade, (Figure 12). Moreover, job creation is dominated by older firms signalling that business dynamics are weak and that younger firms face difficulties to grow and expand employment (Figure 13). This has coincided with a decreasing share of firms innovating new products or production processes and investing in physical and human capital or research and development (Figure 14). Labour productivity of firms has decreased across all sectors. High entry barriers and administrative burden also contribute to informality, as smaller and less productive firms cannot afford employing the necessary personnel to comply with costly administrative procedures and choose to operate in the informal sector.

To foster competition and innovation and raise productivity and formal job creation, it is crucial to lower entry barriers and administrative burden related to authorisation requirements and complex tax incentive and subsidy regimes (World Bank, 2020[14]). The ongoing digitalisation of many administrative procedures is a step in the right direction, but needs to be accompanied by a reduction of prior-authorisation and licensing requirements and the introduction of “silent is consent” rules whenever possible (OECD, 2022[3]). Moreover, centralising administrative procedures for opening a business through one-stop shops or single windows has successfully reduced administrative burden for firms and facilitated market entry in many countries, for example in Portugal (OECD, 2019[23]; OECD, 2020[24]). This needs to be complemented by a simplification of the tax system, as numerous tax incentive and subsidy regimes create heavy administrative burden particularly for small firms (OECD, 2022[3]). In addition, strengthening competition

enforcement, mainly through ensuring independence and sufficient staffing of the Competition Council, would help reducing anti-competitive behaviour of incumbents (OECD, 2022[3]) (OECD, forthcoming[25]).

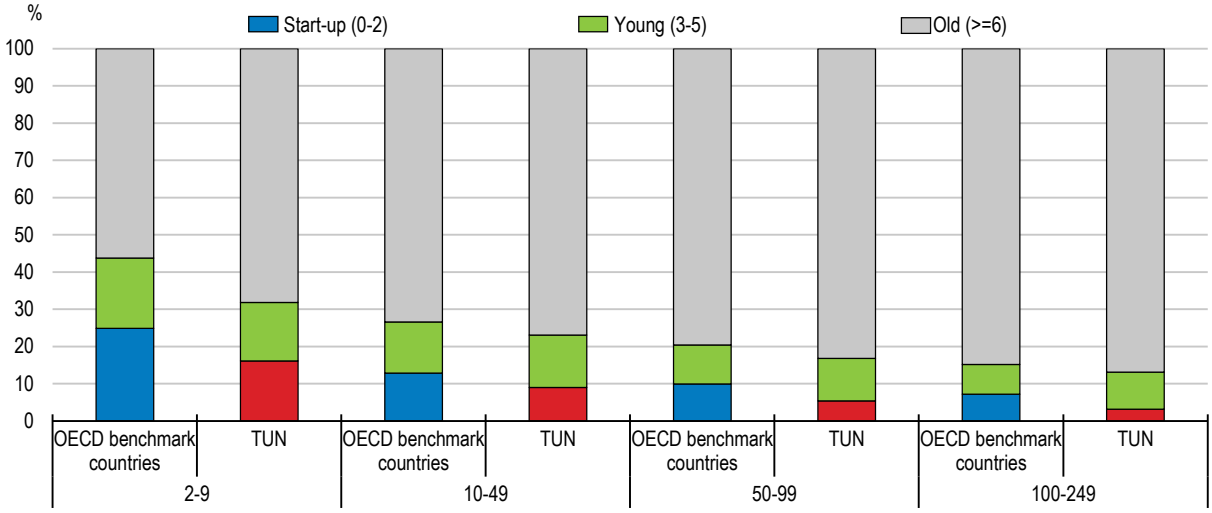
Figure 12. Firm entry rates are low and declining



Note: Panel A plots average entry rates by SNA A38 industries. Entry rates are computed as the ratio of entering firms in year t divided by the average number of firms in years t and t-1. Averages are computed over the period 2007-2018 for Tunisia and 2007-2015 for the benchmark country group (Costa Rica, Hungary, Latvia and Turkey). This figure is based on data for manufacturing and non-financial market services. Panel B reports the cumulative change in average entry rates, whereby the average refers to the average within-sector changes of entry rates by country. Each point represents cumulative change in percentage points since 2007. Data may be preliminary and differ from official data.
Source: OECD DynEmp database (https://www.oecd.org/sti/dynemp.htm).

Figure 13. Employment is concentrated in older firms

Share of employment by size class and age for Tunisian and OECD benchmark countries, 2018 or latest year



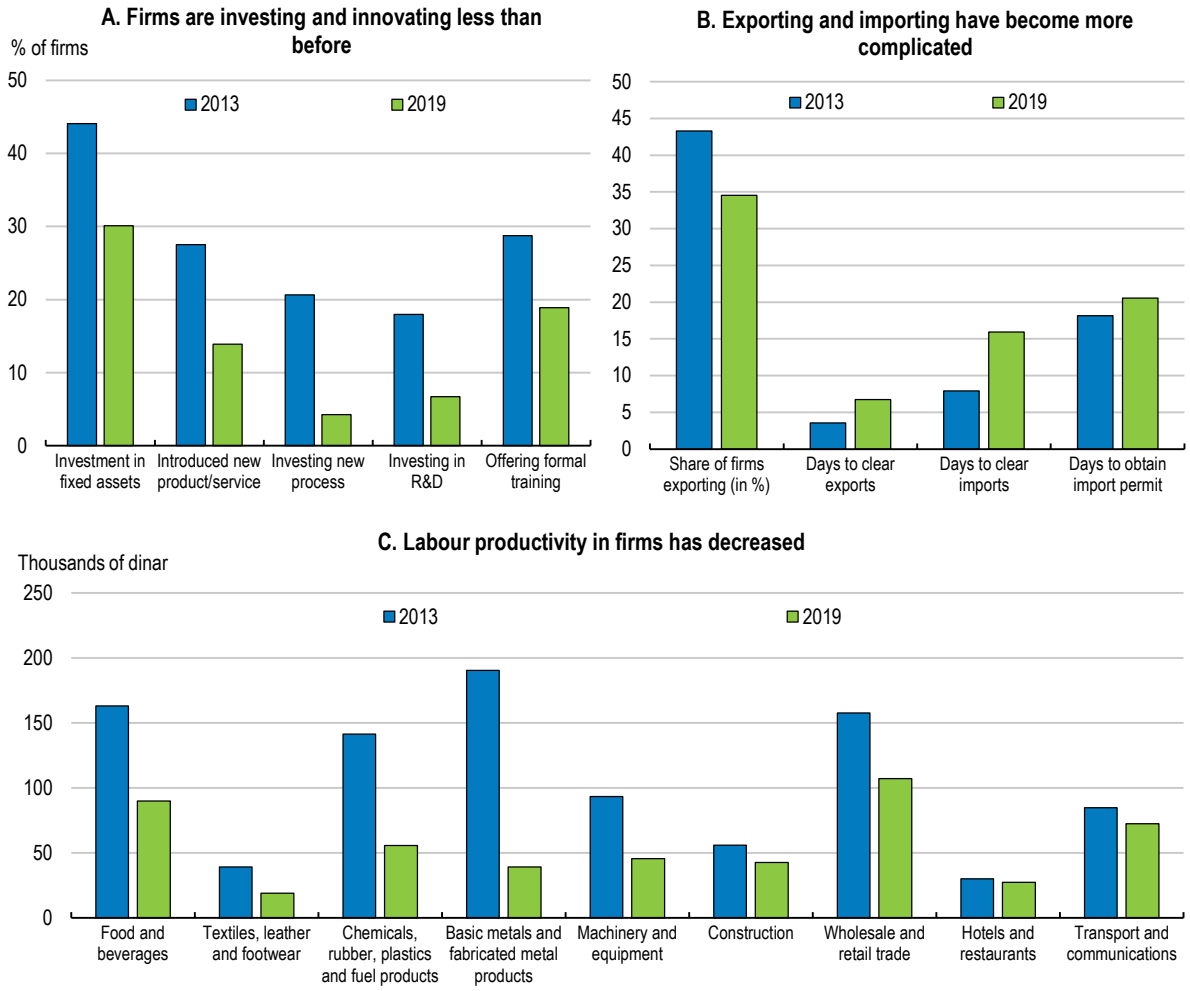
Note: This figure reports the share, in percentage, of employment in start-ups (firms aged between 0 and 2 years), young firms (2-5 years) and old firms (older than 6 years), separately for each size group: micro firms (between 2 and 9 persons engaged), small firms (between 10 and 49 persons engaged), and medium size firms (between 50 and 99 persons engaged, and between 100 and 249 persons engaged). The benchmark group includes Costa Rica, Hungary, Latvia and Turkey. The figure is based on data for manufacturing and non-financial market services, and covers the last available year in each country (2018 in Tunisia and 2015 for countries in the benchmark). Data may be preliminary and differ from official data.
Source: OECD DynEmp database (https://www.oecd.org/sti/dynemp.htm).

Exporting and importing have become more complicated for firms in Tunisia (Figure 14). Weak transport and digital infrastructure hinder the domestic and international integration of the economy, which is complemented by high tariffs and non-tariff barriers protecting domestic firms (OECD, 2022[3]). In addition to raising production costs for all firms, these import barriers also reduce competitive pressures on incumbent firms, lower innovation incentives and hinder the reallocation of workers and capital to more productive firms and activities (Morsy, Bassem and Selim, 2018[22]; Bloom, Draca and Van Reenen, 2016[26]).

In particular, lengthy and complex administrative procedures for non-automatic import licences and custom clearance significantly raise import costs and create opportunities for political interferences and corruption (Figure 14) (World Bank, 2020[14]). Although the ongoing digitalisation and simplification of custom and licensing procedures is a significant step forward, automatic licensing combined with ex-post controls should be introduced for all products. Non-automatic import licensing procedures and related controls are meant to ensure the health and safety of Tunisian consumers, but the selection of products subject to these requirements is open to discretion and does not follow clear criteria based on risk-assessment procedures, which can open the door for protectionist motives (Grundke and Moser, 2019[27]). Moreover, foreign conformity assessment and product quality certificates are not recognised and many imported products are required to receive a domestic conformity assessment certificate or authorisation, entailing lengthy and complex administrative procedures (European Commission, 2019[28]). Introducing automatic import licenses for all products combined with transparent ex-post controls based on risk-assessment procedures can significantly reduce import costs and ensure the health and safety of consumers (Grundke and Moser, 2019[27]; OECD, 2019[29]).

Similarly, complex and discretionary export licensing procedures pose a major obstacle for many agricultural and food producers (World Bank, 2020[14]). Automatic export licensing procedures, which are the norm for offshore firms, have been introduced recently for onshore firms, which have a recognised product quality testing facility or quality label. However, many small firms cannot meet these requirements, which complicates their access to export markets. Improving the domestic product quality testing and certification system and its international recognition, as well as risk-control systems, and introducing automatic export licensing procedures combined with ex-post controls for all firms, could significantly contribute to raising agricultural and food exports and creating jobs in rural areas (Rudloff, 2020[30]). Improving mutual recognition of conformity assessment procedures and certificates with important trade partners, for example in the context of comprehensive trade agreements, could be an important step to facilitate exporting and importing for onshore firms (Rudloff, 2020[30]).

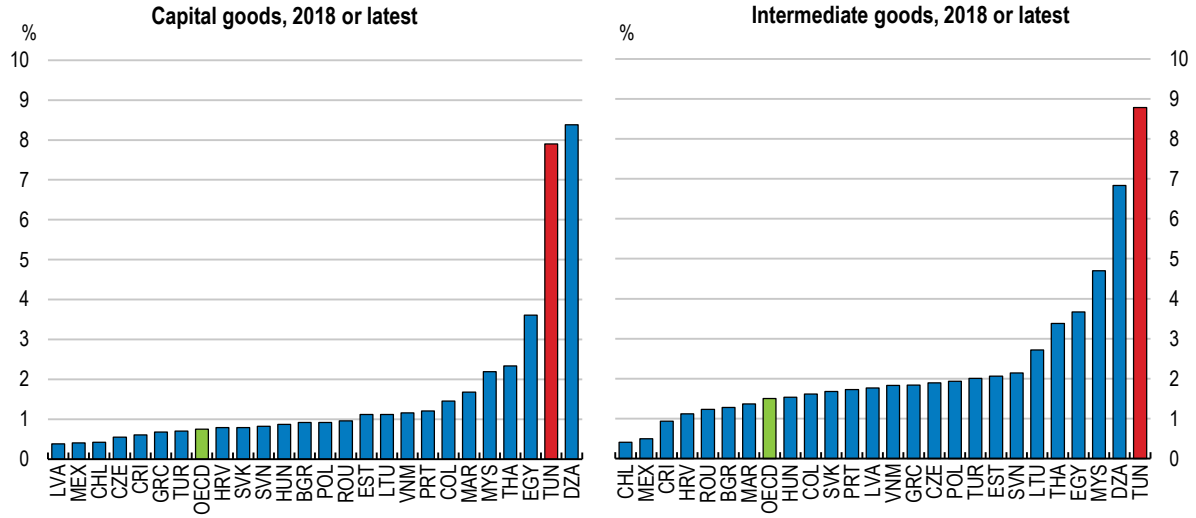
Figure 14. Business dynamism and firm productivity have decreased



Note: Labour productivity at the firm level is measured as revenues divided by employment, whereby nominal revenues are adjusted for inflation using the consumer price index.
Source: World Bank enterprise surveys for Tunisia.

Average tariffs on intermediate inputs and capital goods are high, raising input prices and reducing access to high-quality inputs and capital goods (Figure 15). This is mainly driven by high tariffs on imports from China, as tariffs for manufacturing imports from the EU have been reduced since 1998 in the context of the EU association agreement (European Commission, 2021[15]). However, some imports from the EU, such as motor vehicles and parts, are still subject to high excise taxes, import quotas, and non-automatic import or distribution licenses (OECD, 2019[31]; European Commission, 2019[28]). Improving sourcing options for intermediate inputs and capital goods would lower production costs and allow domestic firms to upgrade their production processes through technology embedded in new machinery (Goldberg et al., 2009[32]; Amiti and Konings, 2007[33]).

Figure 15. Tariffs on capital and intermediate goods are high

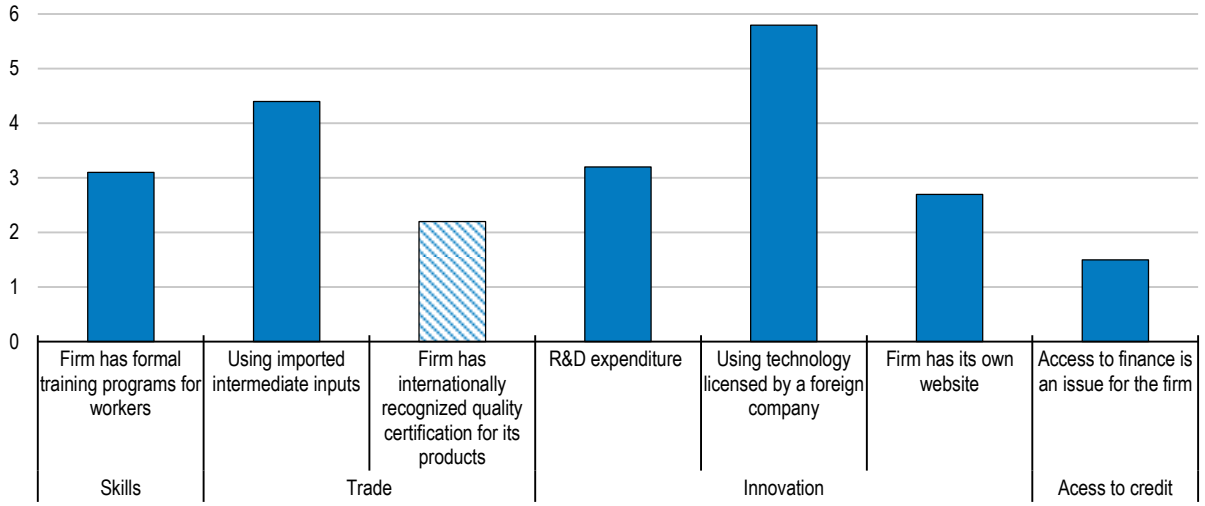


Note: Average tariffs of capital goods and intermediate goods for Tunisia refer to the year 2016.
Source: WITS database.

To investigate how better access to intermediate inputs affects the total factor productivity (TFP) of firms, this paper uses firm-level data for Tunisia and the years 2013 and 2019 from the World Bank Enterprise Survey. After computing TFP at the firm-level by estimating sector-specific production functions, regressions of the dependent variable logarithm of TFP on a set of independent variables of interest have been estimated, controlling for a range of independent variables such as age and size of the firm, foreign ownership, public ownership, population size of the firm location, as well as fixed effects for the sector of activity and the year of the observation (for a detailed description of the methodology see Annex A.2) Results indicate that Tunisian firms using imported intermediate inputs have a 4.4% higher total factor productivity than firms exclusively using domestic inputs (Figure 16). Moreover, firms that use technology licensed by a foreign company have a 5.8% higher total factor productivity, an outcome that emphasises the importance of reducing import barriers for facilitating technology diffusion.

Figure 16. Correlates of total factor productivity (TFP) of firms in Tunisia

Change in Total Factor Productivity (TFP) of firms (in %)



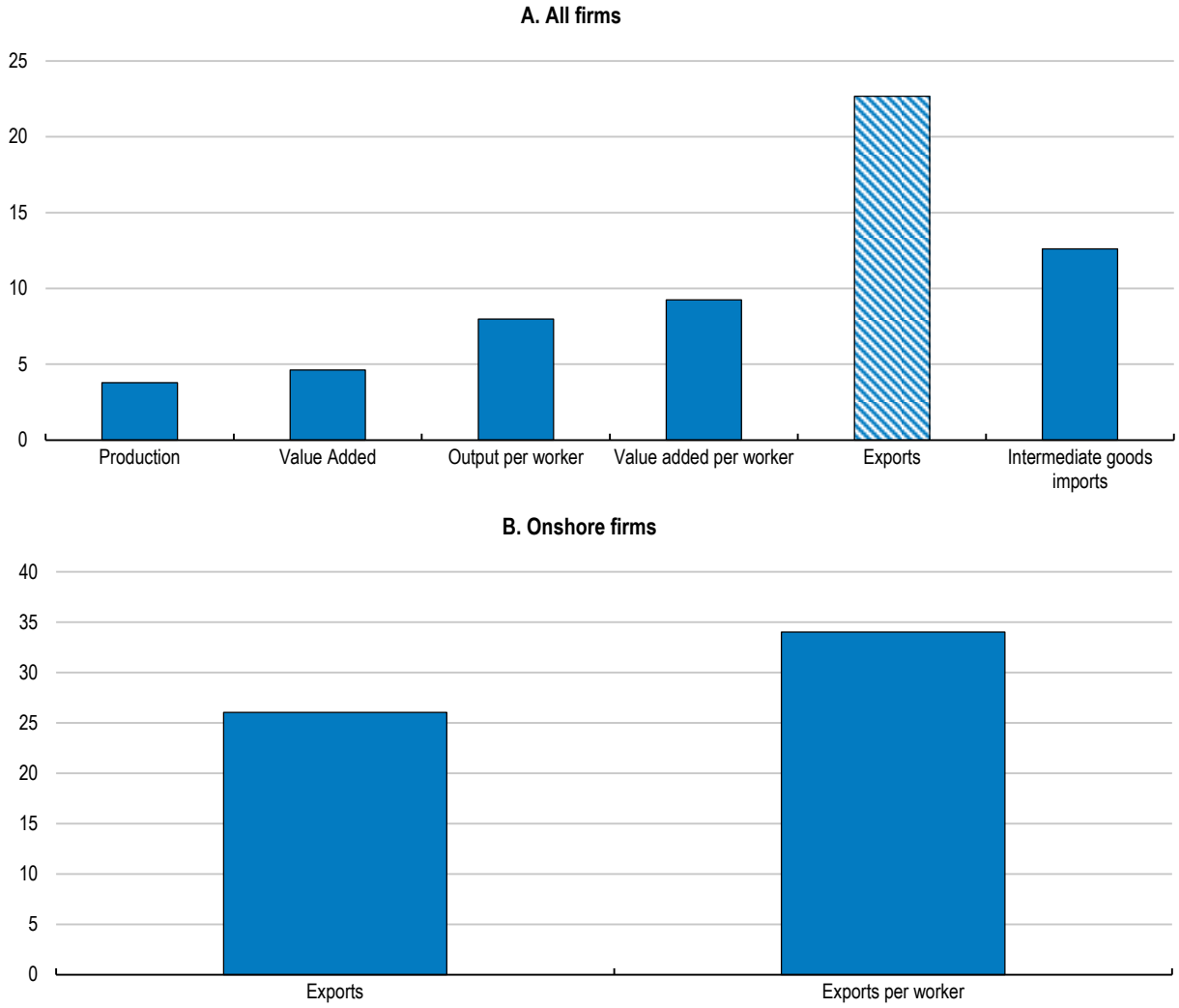
Note: Results are based on OLS regressions on the pooled sample of firms using robust SE. The dependent variable is log of total factor productivity (TFP). As TFP is standardised using the sectoral mean, changes in TFP presented in the graph are relative to average TFP in the economic sector the firm is located in. Independent variables are dummy variables, with 1 indicating that a firm disposes of the respective characteristic (and 0 otherwise). All regressions control for dummies for the firm being a subsidiary, partly foreign owned, partly government owned, dummies for the size of the economic region the firm is located in, the age of the firm, three dummies for firm size (based on employment, using 10, 20 and 100 as thresholds), dummies for the year of the observation as well as dummies for the economic sector. Bars show the size of the estimated coefficient. Shaded bars indicate that the coefficient that underlies the simulations is not significant at the 10% level (see Annex Table A.1). For more details see Annex A.2.
Source: OECD calculations based on the World Bank Enterprise Survey.

Further analysis using Tunisian sectoral panel data shows that a reduction in input tariffs by 50% is associated with a rise in labour productivity (measured as value added per worker) by around 10% (Figure 17) (see Annex A.3 for further details on the methodology). Achieving these productivity gains would boost exports, particularly in onshore firms, where exports would increase by more than 25% (Figure 17). Offshore firms are exempted from tariffs which is why input tariff changes do not significantly affect their exports (Joumard, Dhaoui and Morgavi, 2018[13]).

For onshore firms, the access to cheaper and higher quality inputs and capital goods would lead to significant productivity gains and stronger competitiveness, which is the basis for improvements in real wages. Many domestic producers of intermediate goods would react to the stronger foreign competition by upgrading their production processes and improving their products, and only the least productive ones would lose market share (Amiti and Khandelwal, 2013[34]; Topalova and Khandelwal, 2011[35]; Pavcnik, 2002[36]). Stronger international competition in services sectors could also reduce prices and improve quality increasing the productivity of manufacturing sectors using these services as inputs (Hoekman and Mattoo, 2008[37]; Arnold et al., 2015[38]; Eppinger, 2019[39]). Moreover, there is evidence that increased importing activities of firms can help building foreign networks and acquiring knowledge about foreign markets, which is crucial for increasing export activities (Blalock and Veloso, 2007[40]; He and Dai, 2017[41]).

Figure 17. Reducing input tariffs would increase productivity and exports, particularly in onshore firms

Increase of economic activity and exports (in %) when average input tariffs are cut by 50%



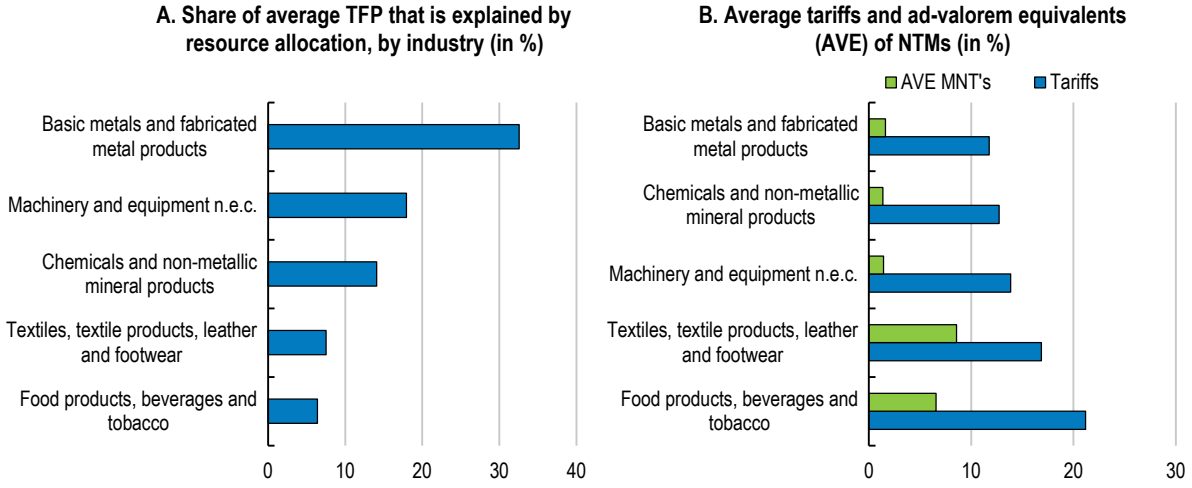
Note: The simulations are based on econometric analysis conducted for this survey (see Annex A.3.). Using sectoral panel data from 2005 until 2015, the log of outcome variables is regressed on average input tariffs as well as sector and year fixed effects. Using these coefficients, a partial equilibrium exercise was conducted, whereby a 50% input tariff cut is assumed at the sample average of input tariffs for the latest available year in the sample (2016). Shaded bars indicate that the coefficient that underlies the simulations is not significant at the 5% level. Data on production and value added are not available for onshore vs. offshore firms, which is why regressions for these dependent variables in Panel A could not be estimated separately for onshore vs. offshore firms.
Source: OECD calculations based on OECD TiVA, INS and RNE database.

Opening up to trade will bring long-term productivity, employment and wage gains, but is likely to trigger structural changes in the economy. These are a crucial element of the productivity benefits, but can raise challenges in the transition. Firms need to increase product quality and reduce high prices that result from low domestic competition (Amiti and Khandelwal, 2013[34]; De Loecker et al., 2016[42]). While this leads to a revitalising effect on the more productive domestic firms, which seize newly arising export opportunities, expand, invest in new technologies and hire new workers, some low-productivity firms leave the market, freeing resources for the more productive firms and sectors to grow (Melitz, 2003[43]; Pavcnik, 2002[36]; Criscuolo, Gal and Menon, 2014[44]; Araújo and Paz, 2014[45]). It is precisely this reallocation process that will allow capital and labour to flow to more productive sectors or firms where new and better-paying jobs can be created (Brandt, Van Biesebroeck and Zhang, 2012[46]; Criscuolo, Gal and Menon, 2014[44]). A

significant share of productivity growth in advanced economies can be attributed to these reallocation effects (Hsieh and Klenow, 2009[21]).

To analyse how much the allocation of resources across firms contributes to aggregate sectoral productivity, this study estimates total factor productivity of firms using the World Bank Enterprise survey and then applies the decomposition method suggested by Olley and Pakes (1996) (for the detailed empirical methodology, please see Annex A.2). Results are consistent with the international evidence that shielding domestic producers from foreign competition tends to cement existing industry structures and hampers the reallocation of resources towards their most productive use (Figure 18). In food manufacturing, where tariffs and non-tariff measures (NTMs) are relatively high, the allocation of resources across firms only explains 5% of average sectoral productivity, which is much lower than in metal manufacturing, which is characterised by lower import protection. This indicates that in food manufacturing resources are trapped in low-productivity firms, while they should move to more productive usage in higher productivity firms.

Figure 18. Allocative efficiency is low in highly-protected activities



Note: A quantitative measure of how much the allocation of resources across firms contributes to aggregate total factor productivity (TFP) is the decomposition suggested by Olley and Pakes (1996). In this decomposition, the covariance term measures allocative efficiency, or the extent to which firms with greater efficiency have a greater market share (Olley and Pakes, 1996[47]). Due to low sample size, the estimations could only be conducted for the year 2013 (Annex A.2). Panel B shows average tariffs for the year 2013 as well as ad-valorem equivalents (AVE) of non-tariff measures (NTMs) estimated following (Cadot, Gourdon and van Tongeren, 2018[48]).
Source: OECD calculations based on the World Bank Enterprise survey; WITS database; and (Cadot, Gourdon and van Tongeren, 2018[48]).

Exposing protected sectors to more domestic and international competition would not affect all firms in the same way. Stronger competition would likely drive some low-productivity firms out of the market, but at the same time, the high productivity dispersion in food manufacturing suggests that there are also firms in the sector that could probably withstand foreign competition (see Annex A.2). External competition would lead these to upgrade their production processes through more advanced technologies, increase product quality and create new job opportunities (Pavcnik, 2002[36]; Criscuolo, Gal and Menon, 2014[44]). The most productive food manufacturing firms could start exporting to niche markets in advanced economies or to regional peers. As high informality and low skills of agricultural workers in the upper segment of the supply chain have so far complicated the establishment of a modern supply chain management, increasing external pressure to introduce quality control and certification systems could be key to open new export markets (Maertens and Swinnen, 2009[49]). This could end up providing new employment opportunities within the sector, as recent pilot projects in the dairy supply chain have shown.

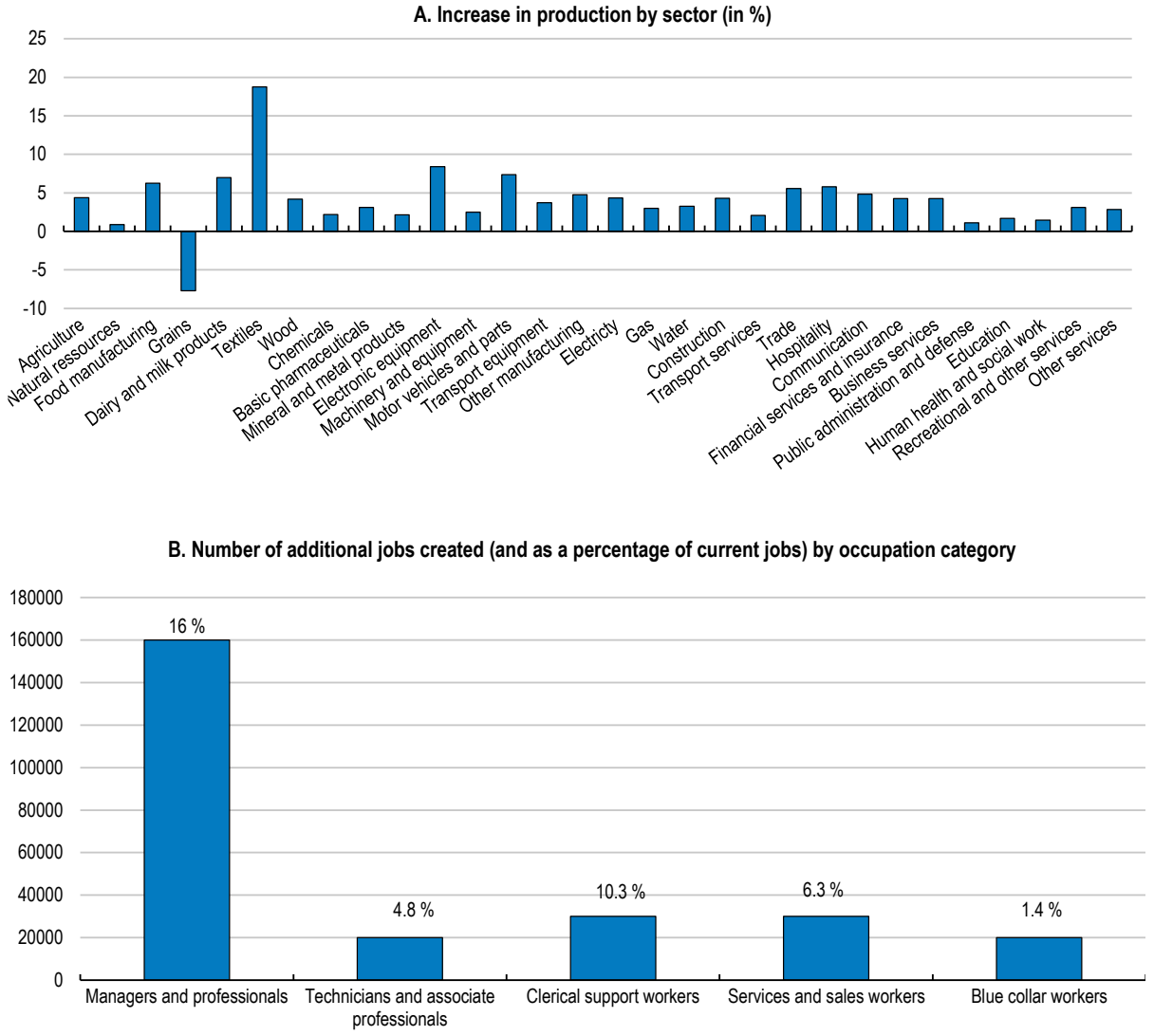
The reallocation processes triggered by more domestic and international competition would require some workers to move from less to more productive firms within the same sector. As producing the same type of products usually requires a similar set of skills, the need for training to help displaced workers move to other firms in the same sector is likely to be smaller than for moves to firms in other sectors (OECD, 2019[50]; Bechichi et al., 2018[51]). Nevertheless, firms within the same sector differ in their production processes and the type of technology they use (Andrews, Criscuolo and Gal, 2015[52]). Increasing technology adoption among highly productive frontier firms will change the task-content of occupations and require workers who move to more productive firms to update their skills (Bechichi et al., 2019[53]; Hummels et al., 2012[54]; Hummels, Munch and Xiang, 2018[55]; Criscuolo et al., 2021[56]). Workers that stay in their jobs also need to update their skills, as the rising digitalisation of production processes changes the task-content of jobs and the skills required to perform them (Spitz-Oener, 2006[57]; OECD, 2019[50]). The digitalisation and globalisation of production processes increasingly requires a good mix of cognitive and social-interactive skills (Grundke et al., 2018[58]; Hummels, Munch and Xiang, 2018[55]).

As the current structure of import protection varies considerably across different sectors of the economy, opening up to trade would have heterogeneous effects across sectors (Cassimon, Grundke and Kowalski, forthcoming[59]). Simulations using the OECD METRO general equilibrium model show that a unilateral cut in tariffs and NTMs by 50% would lead to an expansion of production and employment in electronic equipment, automobile industries, textile, agriculture and food manufacturing as well as ICT and business services and tourism (Figure 19) (see Annex A.4 for a description of the methodology). Better access to inputs and capital goods would raise productivity and export competitiveness (Cassimon, Grundke and Kowalski, forthcoming[59]). The production of grains would decrease, as this sector is currently strongly protected and Tunisia has no comparative advantage in grains production. However, other agricultural activities as well as food manufacturing would significantly expand and absorb displaced workers from grain production.

Trade opening would strongly raise labour demand and reduce unemployment (OECD, 2022[3])(Figure 19). In particular, demand for high skilled labour will increase, as 160 000 additional jobs are created for managers and professionals, an increase in employment in these occupations by 16%. The number of jobs for clerical support workers and services and sales workers will increase by 30 000 each, and for technicians and associate professionals as well as blue-collar workers by 20 000 each. Many currently unemployed workers would have to move to newly created jobs in sectors and occupations, where they have not worked before (Cassimon, Grundke and Kowalski, forthcoming[59]). This necessary reallocation of labour to expanding sectors will require substantial investments into re-training of workers, as skill-requirements and task-content differ substantially between sectors and occupations (Bechichi et al., 2019[53]). Identifying sectors and occupations with large expected training needs can help to target training and education policies effectively. At the same time, identifying those sectors and occupations with particularly strong future employment potential may help to guide the choice of training content.

Figure 19. Opening up to trade would have heterogeneous effects across sectors and reduce unemployment

OECD-METRO model simulation of a decrease in tariffs and non-tariff measures by 50%



Note: Simulations reflect high unemployment in Tunisia and assume that wages are fixed and rising labour demand is satisfied by existing labour supply including the pool of unemployed. Tariffs and non-tariff measures (NTMs) are cut by 50% on a unilateral basis.
Source: OECD calculations based on the OECD METRO model (Cassimon, Grundke and Kowalski, forthcoming[59]).

In particular, ICT and business services, which are high-value added activities, have the potential to create good quality jobs for a large number of tertiary graduates (Box 1). Lowering restrictions on services trade through bilateral or regional trade agreements, particularly with African partners, but also with the EU, could be one important policy lever to further raise services exports and demand for high-skilled labour. Moreover, formal job creation in offshore firms has almost exclusively taken place in coastal regions in the past, as industrial policies and lower trade costs have attracted foreign direct investment to these regions (OECD, 2015[8]; World Bank, 2020[14]). Investing in digital infrastructure in interior regions and attracting ICT and business services activities could be one solution to lower high unemployment of tertiary graduates in interior regions. Improving access to the internet would also raise productivity of firms in other sectors, as Tunisian firms with a website have on average a 2.7% higher total factor productivity compared to firms without a website (Figure 16).

Box 1. ICT services have a large potential to create good quality jobs in Tunisia

Information and communication technology (ICT) services have made a significant contribution to job creation since the early 2000s, in particular for tertiary graduates (Figure 8, Figure 10). The number of formal jobs in IT services has risen from 2 400 in 2007 to 24 000 in 2019 (OECD calculations based on RNE data). The large majority of jobs has been created in offshore firms (78%), which mainly export to the European market. Labour productivity is high compared to other sectors (Figure 7) and exports have strongly increased representing around 10% of total services exports in 2018 (according to BCT balance of payments data).

The comparative advantage of Tunisia lies in proximity to the European market and the abundant supply of highly-educated youth. Moreover, the digital infrastructure has significantly improved in recent years, raising the penetration rate for fixed and mobile Internet access to 71% and 78%, respectively, in 2019 (UNESCO, 2021[60]). However, access to fast Internet is still problematic in many interior regions, where unemployment of young tertiary graduates is high (Figure 3, Figure 6) Improving the digital infrastructure and reducing access costs through more competition in telecommunication markets is crucial to unlock the job creation potential of ICT services in interior regions (Figure 12).

In addition to digital infrastructure, other framework conditions need to improve. For onshore firms, which do not benefit from tariff and tax exemptions, nor from simplified customs procedures provided to offshore firms, importing ICT equipment is still relatively costly (Figure 15). Improving access to intermediate inputs and capital goods by halving tariffs and non-tariff measures would raise production and value added in ICT services by around 5%, and employment by around 7% (Figure 19). Job opportunities would mostly arise in high-skill intensive white-collar jobs, such as managers, professionals, technicians and associate professionals, but also clerks and service workers (Cassimon, Grundke and Kowalski, forthcoming[59]).

Moreover, lowering market entry barriers through reducing prior-authorisation requirements and administrative burden and simplifying the tax and subsidy system is crucial to foster competition, innovation and job creation. Raising competition is particularly important in the telecommunication sector, as better and cheaper access to the Internet is a precondition for the development of ICT services (Figure 12). The 2018 start-up act improves the framework conditions for ICT services start ups, as it simplifies administrative burden, facilitates operations in foreign currency and provides income support for founders during the first year of operations. However, it also introduces new special tax incentives, which risk further complicating the tax system. Improving access to finance for young and innovative firms is another key issue, which is shared by young firms in other sectors and discussed in the first chapter of this report.

Many firms in ICT services are also regularly complaining that they have difficulties finding employees with the right skills set, although unemployment among graduates in the corresponding fields of studies is high (UNESCO, 2021[60]; IFC and UTICA, 2017[61]). This is hindering the development of the sector and is due to the migration of better-qualified graduates to Europe as well as structural weaknesses in the education and training system, which are discussed in the third section of this chapter.

Agriculture and food manufacturing could also play a crucial role for creating more and better jobs in rural areas. Thereby, comprehensive trade agreements are key to open up new export markets for agricultural products, but need to be accompanied by domestic improvements in supply chain management and quality assurance through tracing, testing and certification procedures (Box 2, see also above) (European Commission, 2019[28]; European Commission, 2021[15]; Rudloff, 2020[30]). High informality and low skills of agricultural workers in the upper segment of supply chains have so far complicated quality assurance and many firms face difficulties to enter foreign markets due to a lack of recognised conformity assessment certificates (Rudloff, 2020[30]). Firm-level analysis conducted for this report shows that Tunisian firms with an internationally recognised quality certification for their products have on average a 3.4% higher labour

productivity compared to firms without such a certification (see Annex A.2). Improving supply chain management and domestic quality testing and certification procedures requires strong coordination and cooperation among different stakeholders (Box 2).

To realise the potential of agriculture in Tunisia, it is also crucial to reduce existing market distortions, such as price controls, subsidies and distribution and export licensing regimes, to set the right incentives for agricultural and food producers (OECD, 2019[31]; Rudloff, 2020[30]). Improving the functioning of land markets and reducing the share of unutilised arable land are also key to incentivise firm entry and create more and better jobs in rural areas.

Box 2. Upgrading agricultural value chains in Tunisia – the case of olive oil

Olive and olive oil production, which is widespread throughout the Mediterranean region, plays an important social, economic and environmental role in Tunisia. Olive area accounts for one-third of the country's total arable land, growers exceed 300 000 and an estimated one million people depend on the sector. Long a major exporter of olive oil in bulk, Tunisia has recently emerged as exporter of branded extra virgin oil and of certified organic oil and won top prizes in prestigious competitions such as BIOL.

Coordination across the whole value chain has been fundamental for this upgrading in terms of quality, efficiency and competitiveness. Freshly-picked olives have to be processed within a maximum of 24 hours and even minor damage to olives at the time of harvest, or preventing them from "breathing" during transport, can trigger enzymatic reactions, that reduce antioxidants and generate negative aromas. Farmers who do not possess their own mills need to organise logistics and transport to meet the tight schedule. Other technical challenges have been improving orchard management, irrigation and harvesting techniques, as well as organising mills and extraction systems to ensure traceability and implement quality certification systems to satisfy the requirements of international buyers and large retailers. Innovation such as underground drip irrigation systems are producing very good results, both in terms of yields and quality, while significantly reducing the stress on water.

The EBRD and FAO have facilitated a public-private dialogue to build a shared vision and roadmap among industry stakeholders. A quality consortium has been created and promotion and marketing campaigns held in new markets in Asia and the Americas. EBRD and FAO are helping a group of SMEs gain high-level food safety certifications like the British Retail Consortium (BRC). These efforts must be consolidated through further support geared towards the many SMEs that still are far from meeting BRC standards.

The 2019/20 campaign broke records, with Tunisia producing an estimated 350 000 tonnes of olive oil – a 2.5 times annual increase. Even before the pandemic, which coincided with a fall in production to 140 000 tonnes due to the trees' cycle, there were serious market imbalances, with excess supply, drops in both domestic and export prices and difficult access to finance. The crisis has exacerbated these vulnerabilities. Financial instruments like factoring would allow to improve cash flow support, while enhanced financial inclusion would allow smaller companies to access credit. Tunisia is by far the main supplier of the EU market, with a 86% volume share in October 2020-March 2021. Imports under the zero-duty quota, negotiated in the 1995 ALECA, are fully allocated and Tunisia requested a revaluation from 56 700 tonne to 100 000 tonne (European Commission, 2019[28]). In 2020, exports to the US jumped seven-fold as result of the retaliatory trade sanctions on Spanish olive oil.

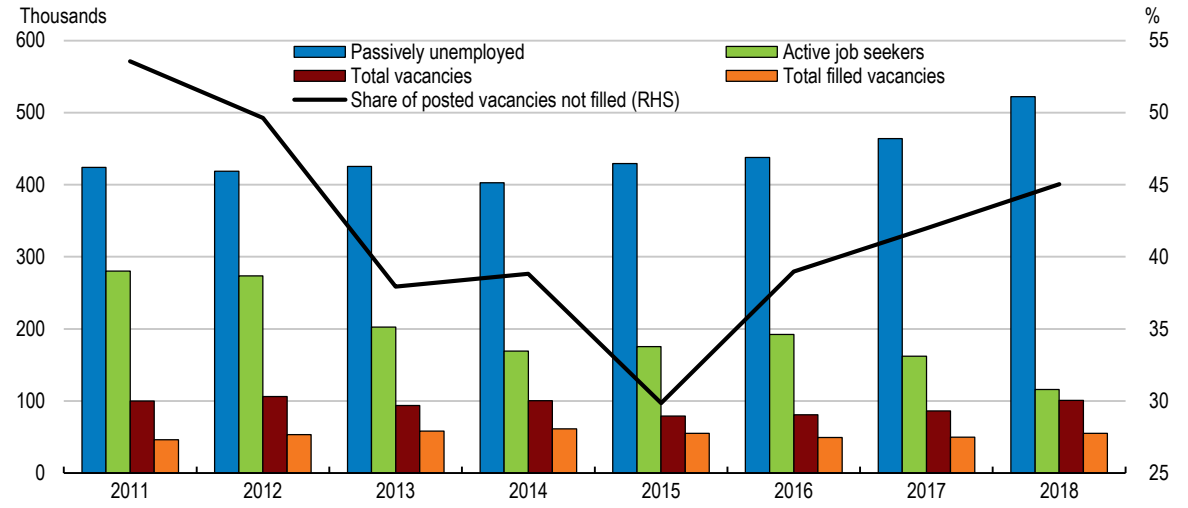
In sum, the significant progress made in past decade to upgrade the Tunisian olive oil sector shows the importance of helping actors engage and coordinate along the value chain. In the long run, the transition from low value-added bulk to higher-quality exports calls for extra efforts in food safety and quality certification, which would strongly benefit from more comprehensive trade agreements with key export markets, as well as the adoption of sustainable milling and production practices (Rudloff, 2020[30]).

Source: EBRD, EC, FAO, FranceAgriMer, OECD and Onagri.

Reducing skill mismatch and improving labour supply

Although unemployment rates are high, a large and increasing share of job vacancies posted by the public employment service cannot be filled (Figure 20). Many firms in low-skill intensive sectors such as textile and wearing apparel, construction, tourism, retail and agriculture complain that they do not find workers with the skills they need (Boughzala, 2019[1]; IACE, 2019[12]). This is even more surprising as the number of unemployed graduates in initial vocational education and training (VET) programmes related to these sectors is higher than for other VET programmes (ONEQ, 2017[62]). The same phenomenon exists for higher-skilled workers. Many firms, particularly in ICT and business services as well as manufacturing, complain that they do not find sufficiently qualified tertiary graduates in the field of science, technology, engineering and mathematics (STEM). However, in 2018, 65% of unemployed tertiary graduates held at least a three-year STEM degree and 30% even held a STEM master degree (Boughzala, 2019[1]; IACE, 2019[12]). It is also hard for firms to recruit candidates with the required set of skills to fill vacancies related to business administration and other white-collar jobs.

Figure 20. In spite of high unemployment, many vacancies cannot be filled



Note: Data on active job seekers and vacancies comes from the information system of the public employment agency (ANETI) and does not include unemployed persons that do not actively search through ANETI. If job seekers have not visited the public employment office for more than 2 months, they are automatically excluded from the database. Passively unemployed persons refers to the difference between the total number of unemployed as indicated by the labour force survey and the number of active job seekers registered at ANETI.
Source: ANETI; and Labour Force Survey Tunisia.

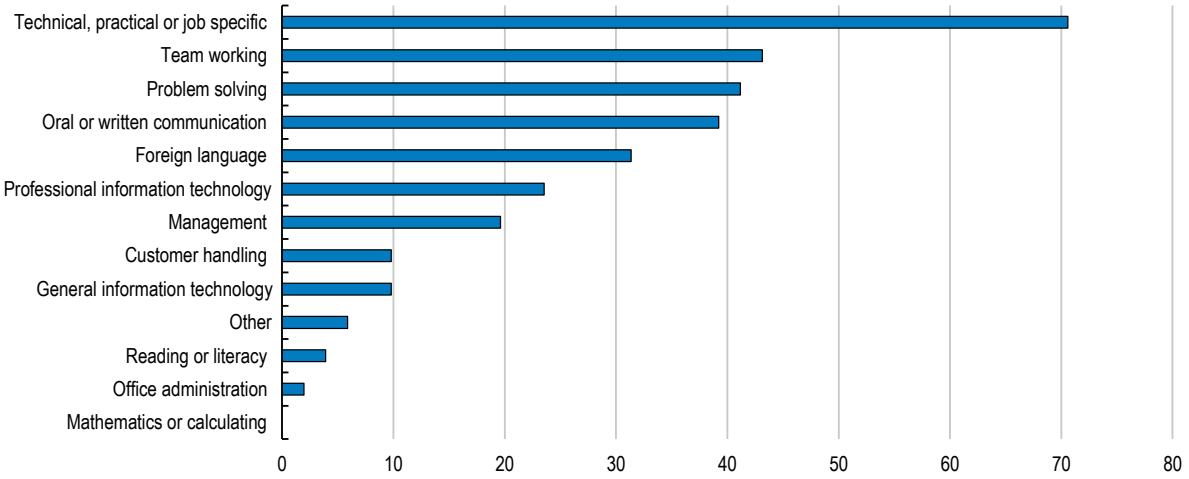
Difficulties to recruit workers with the right skill sets are related to the low quality and outcomes of the basic education and initial VET system. Dropout rates in secondary education are high and only the weakest students and those dropping out select into the initial VET system (UNICEF and INS, 2019[4]). As a result, many VET graduates do not possess basic technical and soft skills and are not able to properly read, write and communicate (UNICEF, 2020[6]). The skill and qualification mismatch in the labour market is also explained by the low ability of the vocational education and training (VET) as well as the tertiary education system to internalise the specific skill needs of the private sector. Many curricula are outdated and education institutions do not prepare students with the technical knowledge, tools and soft skills required by firms, which is particularly an issue for STEM graduates (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Moreover, the failure to properly inform lower secondary school students about labour market trends and guide their educational choices leads to misallocation of students to VET and tertiary education subjects facing relatively low labour demand (Boughzala, 2019[1]).

Besides technical and job-specific skills, many job applicants are missing fundamental soft skills, as confirmed by an online survey conducted for this report among larger domestic and foreign firms in Tunisia

(Figure 21, see Annex A.1). Many firms have difficulties to find candidates with a sufficient level of oral and written communication skills, team-working skills as well as problem solving and conflict resolution skills. Foreign language skills are also difficult to find among applicants, which is a particular issue for firms that are more integrated into global value chains and need to communicate with suppliers and clients in foreign markets (Grundke et al., 2017[63]). These types of soft skills are also the ones that many current employees lack, which is why continuing VET activities of larger firms are focused on improving these type of skills (Figure 22). In addition, firms dedicate a significant amount of training hours to improve management and IT skills of their employees.

Figure 21. Firms have difficulties to find candidates with a sufficient level of technical and soft skills

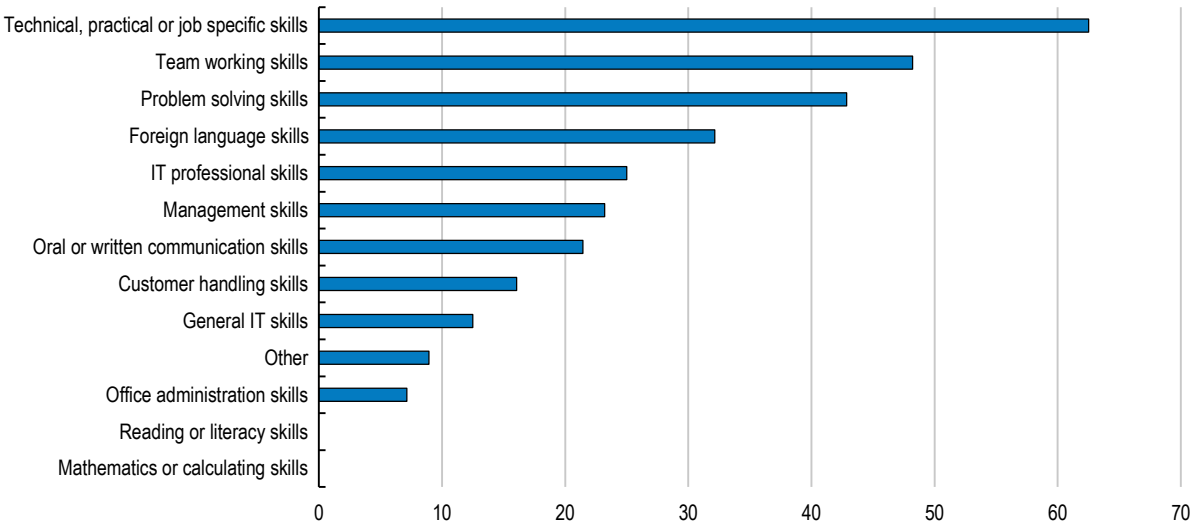
Percentage of firms indicating the respective skill as one of three skills that are most difficult to find with job candidates (in %), 2019



Source: Firm survey on skill needs conducted by the OECD for this report (Annex A.1).

Figure 22. Training activities of firms focus on technical and soft skills

% of firms indicating the respective skills as one of the three skills on which most training time is spent (in %)



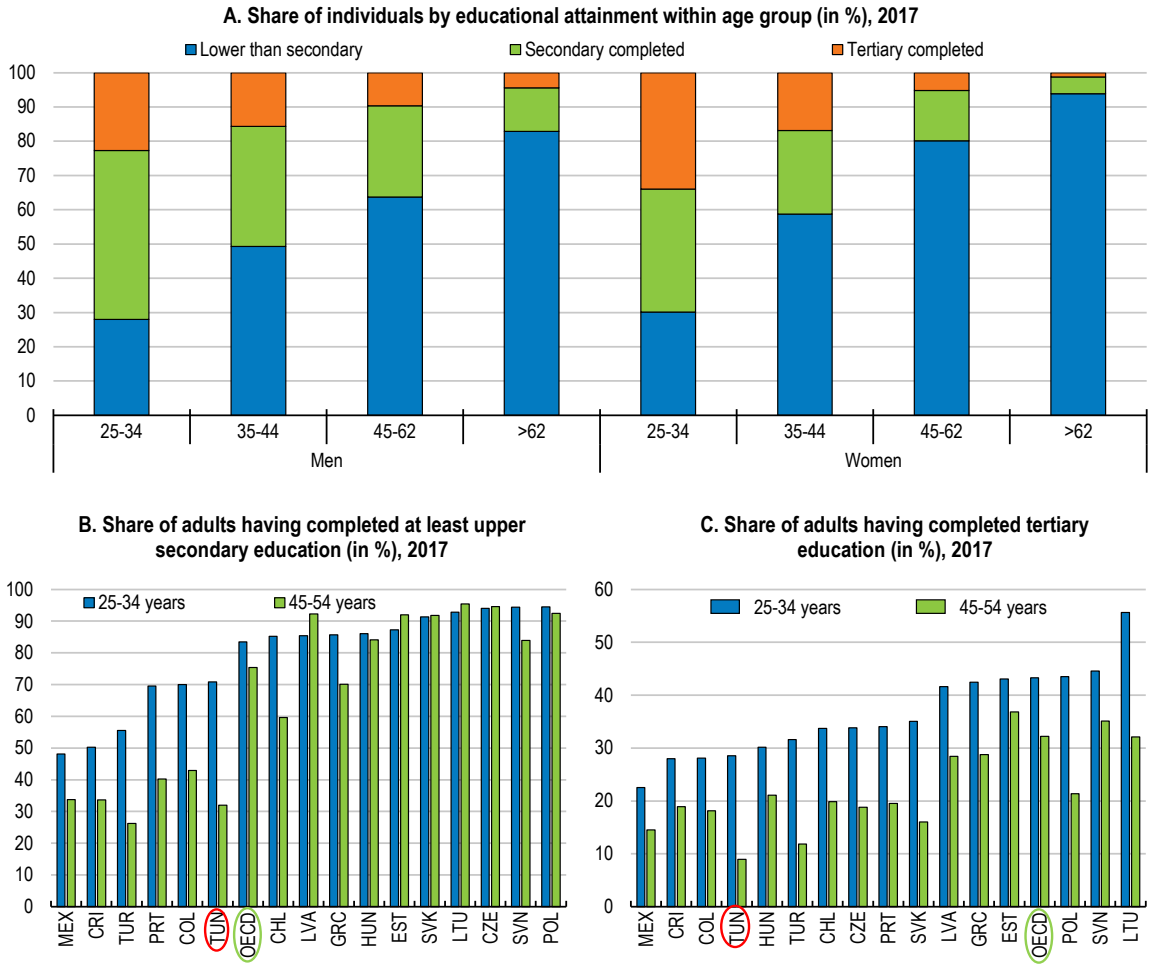
Source: Firm survey on skill needs conducted by the OECD for this report (Annex A.1).

Moreover, further results indicate that the geographic situation of companies plays an important role in their difficulties to recruit. Around 56% of companies based outside of the metropolitan area of Greater Tunis indicated that due to their geographical situation it was difficult to recruit and retain employees, while this was only the case for around 18% of companies in Greater Tunis (Annex A.1). The internal mobility of labour is low due to weak public employment services and the reliance on the family for income support of the unemployed (discussed further below). This is reinforced by cultural norms that prevent single women from staying far away from their families and reduces their geographic action space. Weak transport infrastructure and transport services and high prices for motor vehicles, due to high excise taxes, tariffs and restrictive import and distribution quotas, also play an important role to explain the low mobility of poorer low skilled workers. Many companies outside the Greater Tunis area reported that they need to provide transport services to their blue-collar workers to enable them to come to the factory, significantly raising their production costs (Annex A.1).

Raising the quality of basic education

To prepare labour market entrants with a sufficient level of basic cognitive and soft skills, the broad access to basic education needs to be complemented with significant improvements in the quality of education. Tunisia has strongly increased access to education since the 1980s, supported by high education spending to hire new teachers and expand school infrastructure (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Gross enrolment rates in secondary education increased from 45% in the early 1990s to 92% in 2018, and for tertiary education from 8% to 32% (UNICEF, 2020[6]; World Bank, 2021[64]). Educational attainment of the younger generation has significantly improved, in particular for women (Figure 23). The share of 25-34 year olds that have completed upper secondary or tertiary education is not far below the respective OECD average, and the rise in educational attainment compared to the older generation has been the most pronounced among countries in the sample (Figure 23).

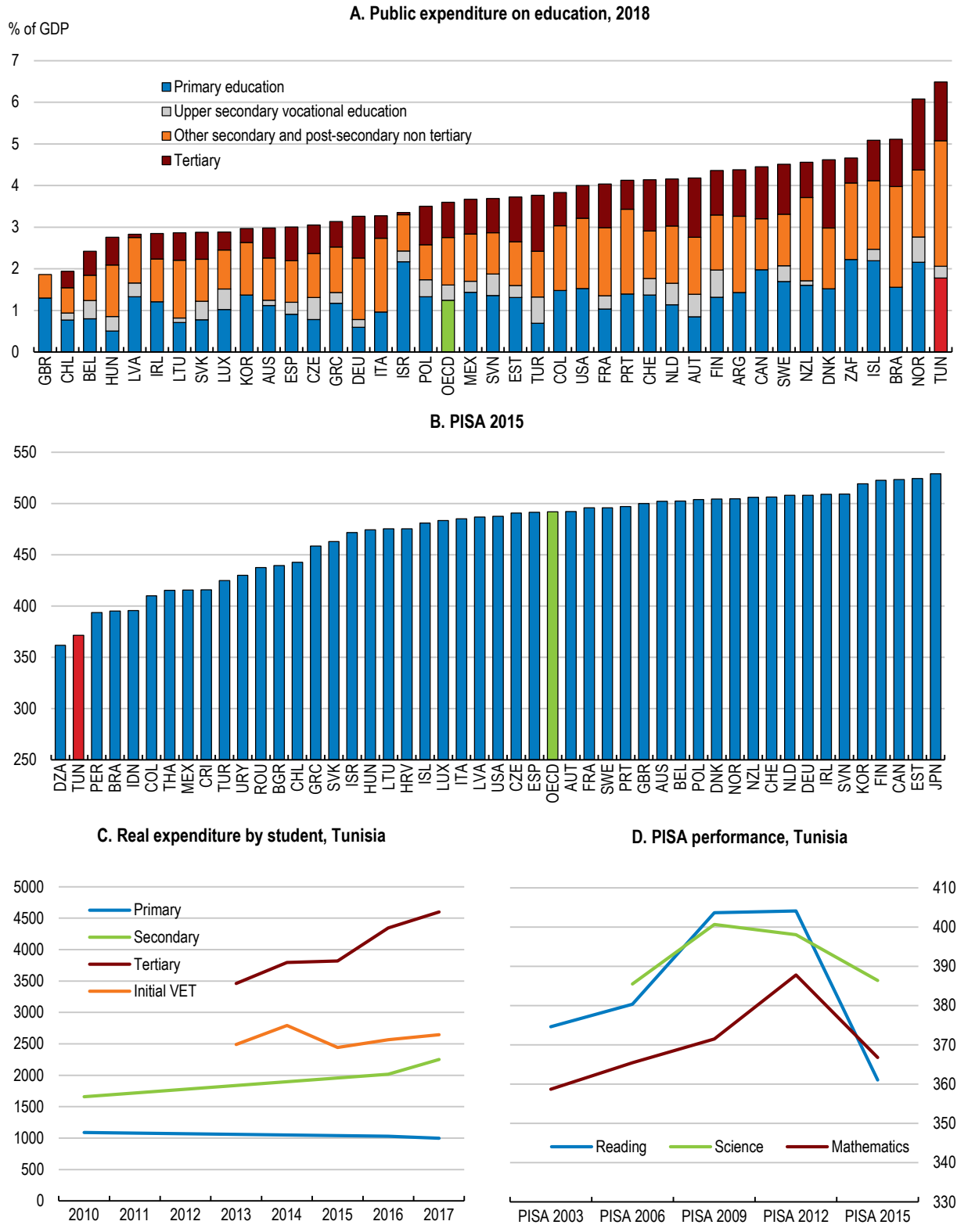
Figure 23. Educational attainment has significantly improved, especially for women



Source: OECD calculations based on data from the Labour Force Survey of the National Institute of Statistics; and OECD Education at a Glance 2020.

However, although public spending for education is relatively high in international comparison, educational outcomes have been weak and even deteriorated (Figure 24). Average performance of Tunisia's students in the OECD Programme of international student assessment (PISA) has been one of the lowest among participating countries and has deteriorated since 2012. The difference in student performance between the OECD average and Tunisia is equivalent to around 3 years of schooling (UNICEF, 2020[6]). Performance has been particularly weak in literacy and communication skills, with more than 70% of students not being able to correctly understand short texts with simple syntax (UNICEF, 2020[6]). In addition, average results in numeracy and science-related knowledge and skills are also weak (OECD, 2016[65]).

Figure 24. Education spending is high, but educational outcomes are weak

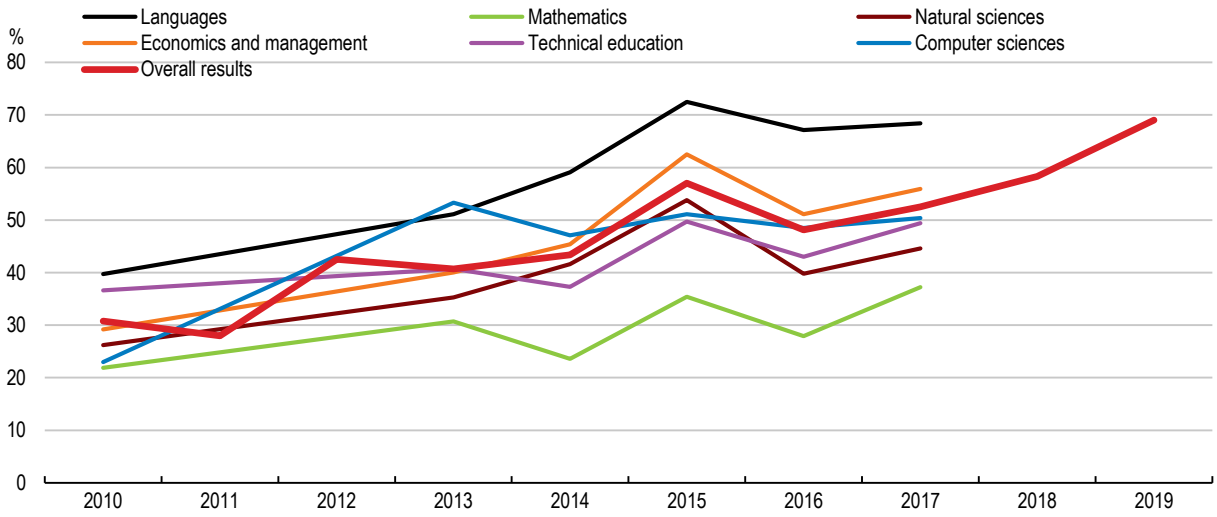


Note: In Panel A, data for Tunisia refers to 2017.
Source: OECD Education at a Glance 2020; OECD PISA 2015; and Ministry of education, Tunisia.

Another indicator for the weak quality of basic education is the high number of students that fail the final exam of secondary education each year. From 2010 until 2019, the share of students failing the final exam has increased from 30% to 70%, whereby performance has deteriorated across all education tracks in secondary education (Figure 25). Taking into account students repeating the exam, around 51% of enrolled students did not complete upper secondary education, and 26% of enrolled students did not even complete lower secondary education (UNICEF and INS, 2019[4]). More than 10% of students drop out from secondary education each year and around 20% have to repeat a class, and this concerns young men more than women (data from the Ministry of Education).

Figure 25. The share of students failing the final secondary school exam has increased

Share of students failing the final secondary school exam by secondary education track (in %)



Note: Results by education track were missing for 2011, 2012, 2018 and 2019, and linear interpolation has been used for the graph for the years 2011 and 2012. Overall results for the high school exam were available for all years from 2010 until 2019 (UNICEF, 2020[6]).
Source: Évolution des résultats du baccalauréat, Ministère de l'Éducation; and (UNICEF, 2020[6]).

The weak performance of students is strongly related to the misallocation of resources and the low quality of teaching. The significant increase of the young population since the 1990s in combination with rising enrolment rates have put enormous pressures on the education system, which have not been managed well (UNICEF, 2020[6]). Although many new teachers have been hired since 2011, recruitment has not been concentrated in subjects or regions with the highest shortage of teachers. Average student to teacher ratios are relatively low in international comparison, but they vary widely across regions and many schools in remote areas face difficulties in providing classes for all secondary education tracks due to teacher shortages (UNICEF, 2020[6]; OECD, 2016[65]).

Many newly employed teachers lack a formal pedagogical education, as recruitment policies have been relaxed since 2011 and many graduates from related subjects and with a one year master's degree could access the teacher career in the public sector (UNICEF and INS, 2019[4]; UNICEF, 2020[6]). The lack of pedagogical skills among young teachers is also related to the deterioration in the quality of initial and continuing teacher training caused by a lack of teacher instructors and outdated curriculums. From the 2007 until 2016, the institutionalised education of teacher instructors was suspended (UNICEF, 2020[6]). As many older and better qualified teachers will retire during the next years, it should be a priority to properly train the younger already employed teachers, including on pedagogical methods, besides improving initial teacher training and selection of new recruits.

The system of teacher evaluation does not set the right performance incentives (UNICEF, 2020[6]). Linking teacher evaluation and existing bonus systems to improvements in yearly nation-wide exams for students of primary, lower and upper secondary education could raise incentives for teachers to participate in additional training and to improve pedagogical methods (OECD, 2020[24]). Wage and bonus systems could also be used to improve the allocation of high performing teachers to the more challenging schools in disadvantaged regions, where dropout rates are higher and student performance is lower. This should be combined with an improved recruitment, evaluation and allocation system that classifies candidates according to several performance criteria to improve the matching of teachers to open positions with differing skill requirements. Skill needs for teacher positions vary widely across school types, and according to the socio-economical background of children. Selecting more students from disadvantaged areas for teacher careers could also facilitate their allocation to challenging schools after their graduation.

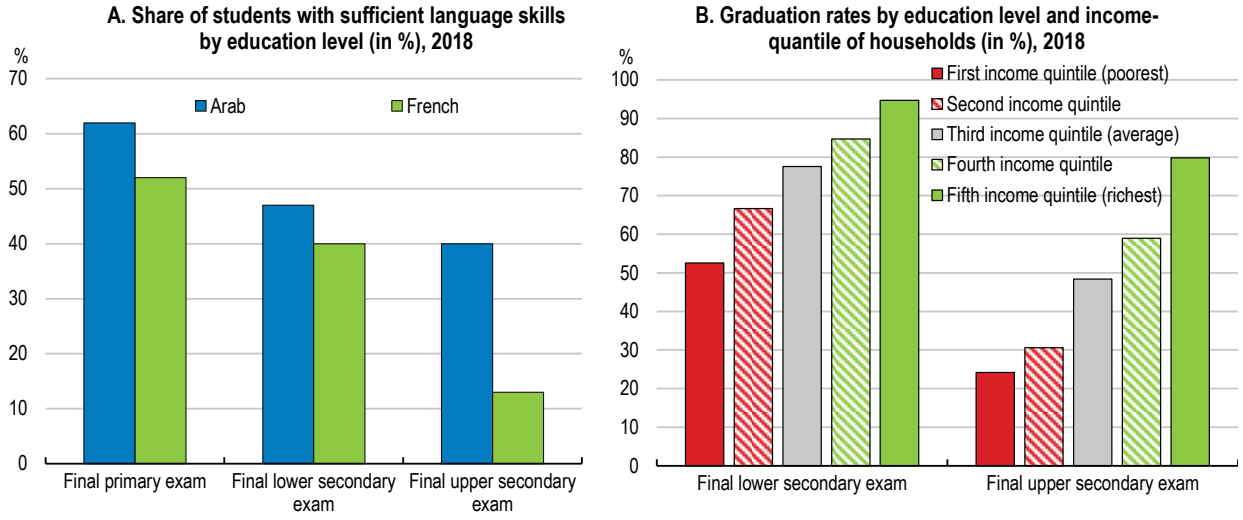
A decaying school infrastructure has deteriorated the learning atmosphere, reduced the choice of education tracks in secondary schools and contributed to high dropout rates (UNICEF, 2020[6]). Public investment into school infrastructure has dwindled during the last decade. Strong wage increases and additional hiring have put pressure on the education budget, raising the share of wage payments to over 95% in 2019 (UNICEF, 2020[6]). Around 70% of schools have no proper access to the sanitation system (Benstead, 2021[66]). Many schools lack functioning laboratories and equipment for technical subjects, natural sciences and informatics, which forces many students to choose the language or business administration track and reduces their motivation and performance (UNICEF and INS, 2019[4]). This partly explains the particularly low performance of students of these tracks in the national secondary education exam (Figure 25). Moreover, many low-income households do not have sufficient access to Internet, and E-learning opportunities in many schools are limited (Benstead, 2021[66]). As ICT technologies and the skills to use them will play an increasing role throughout life, it is crucial to improve the ICT infrastructure in schools and increase access for all children (OECD, 2019[50]).

As fiscal space is very limited and education spending already very high (Figure 24), improvements in education infrastructure are only possible by raising spending efficiency and reducing the high public wage bill. Low average student to teacher ratios indicate room for adjustments, which should be accompanied by a better allocation of teachers across schools and subjects. However, the national dialogue on education reform is currently blocked due to a standoff between teacher unions and the government. This conflict has caused significant collateral damage for children, as schools remained closed for several months in 2018 due to strikes (UNICEF and INS, 2019[4]). It is a priority to restart the national dialogue and find solutions to improve education infrastructure and teaching quality and to finalise the pending education reform. Parent associations should participate more actively in this process to represent the interests of their children (UNICEF, 2020[6]).

Changing the instruction language from lower to upper secondary education leads to a strong drop in performance, particularly for poor children. Until the 9th grade all subjects are taught in Arabic, which is the language spoken in families and communities. However, after the 9th grade, the teaching language switches to French for all subjects, which leads to confusion and a strong drop in performance for many students, not only in languages, but also in mathematics and sciences (Figure 26) (UNICEF, 2020[6]). In particular, students from low-income households suffer from this change, as their French language skills are worse due to fewer opportunities for speaking it within their families and lower financial resources to pay for private lessons (Figure 27). Whereas around 53% of students from the lowest income quantile of households completed lower secondary education, this share shrinks to 24% for upper secondary education (Figure 26). Providing more continuity through a single teaching language in primary and secondary education would particularly benefit children from lower-income households, but risks to lower French language skills of secondary graduates, with negative effects on future labour market outcomes (Angrist and Lavy, 1997[67]). A better policy option to lower barriers to advancement between primary and

secondary education is to ensure the provision of high quality language teaching from an early age, in particular for children from low-income households.

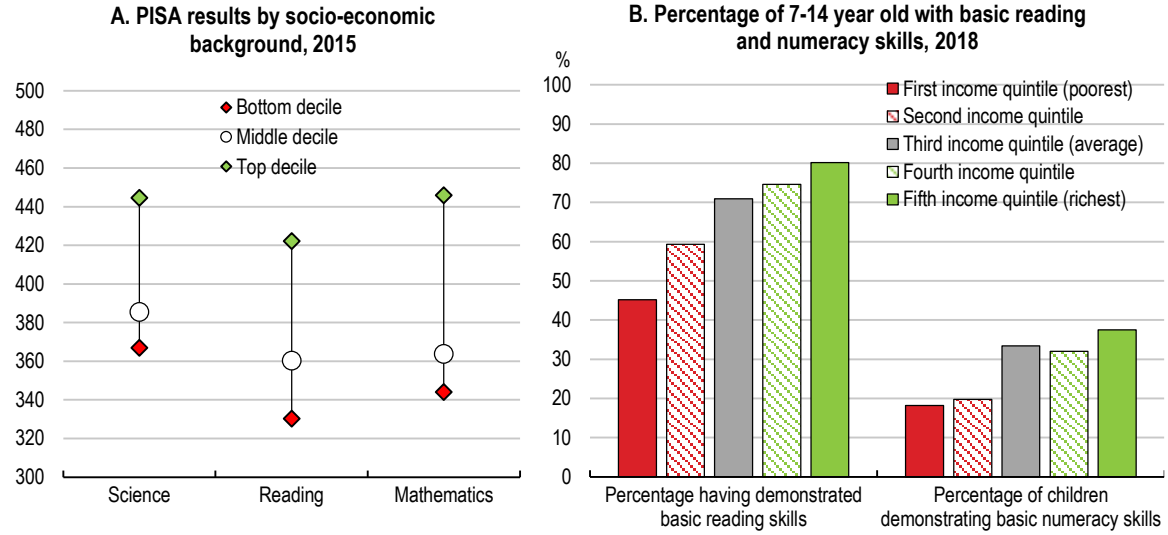
Figure 26. Changing the instruction language leads to a strong drop in performance, particularly for poor children



Source: UNICEF (2020); UNICEF; and INS (2019).

Learning standards, curricula and related teaching methods for primary and secondary education are outdated and should be revised (UNICEF, 2020[6]). Existing learning standards and curricula are biased towards academic content and mainly prepare students for university studies. They lack a focus on teamwork, communication and presentation skills, as well as other soft-skills that become more important with globalisation and digitalisation (Grundke et al., 2018[58]; OECD, 2019[50]). Brazil has recently revised its learning standards and curricula for early-childhood, primary and secondary education and adapted them to include the 21st century skills, comprising a rich set of cognitive and socio-emotional skills according to international best practices (OECD, 2020[24]). Combining modern and less-academic learning standards and curricula with new teaching methods to foster group-work and self-initiative would not only favour children from lower income households, who could benefit from more engagement and cooperation with other classmates, but would also help developing entrepreneurial skills which many graduates are currently lacking (UNICEF, 2020[6]; IACE, 2019[12]). Fostering entrepreneurship among young Tunisians is key to improve business dynamics and create more and better jobs, but the development of the necessary mind-set needs to start early in basic education, as basic cognitive and soft skills are formed early in life (Heckman and Mosso, 2014[68]; Heckman, Pinto and Savelyev, 2013[69]).

Figure 27. Student performance is strongly related to socio-economic background

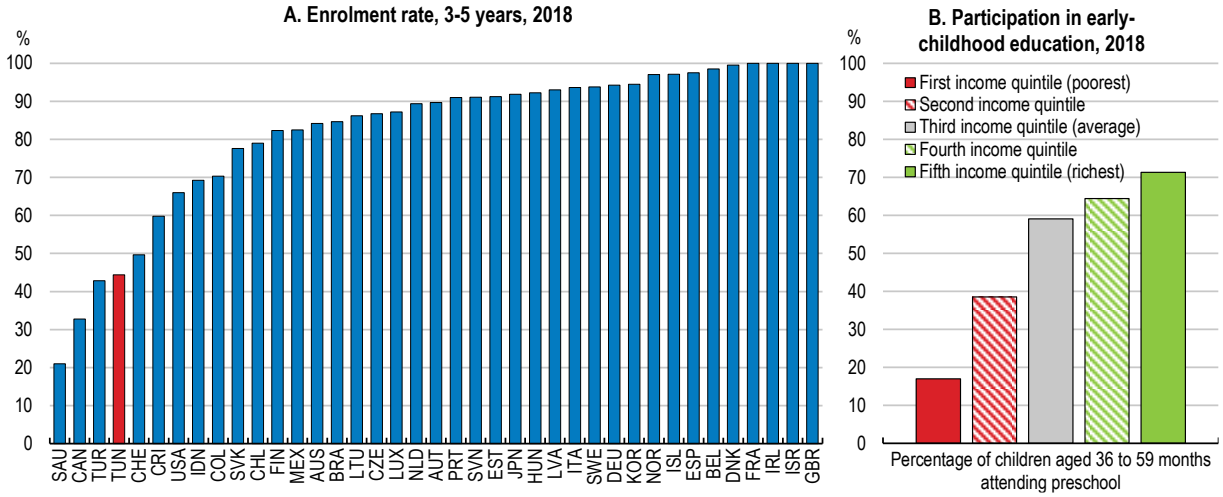


Source: OECD, PISA 2015; UNICEF; and INS (2019).

Besides teaching quality, socio-economic background and good early-childhood education are key determinants for educational outcomes across countries (Figure 27) (OECD, 2019[70]; Heckman and Mosso, 2014[68]). Although in Tunisia access to early-childhood education increased from 16% in 2000 to 44% in 2018, it is still low in comparison to other countries, particularly for children from low-income households (Figure 28). Only 17% of poor families with children between 3 and 5 years have access to early-childhood education, compared to 71% of the more affluent families (UNICEF, 2020[6]). Enrolment rates also differ strongly across provinces. As spending for secondary and tertiary education is relatively high compared to other countries, improving spending efficiency and reallocating resources to early-childhood education to expand access for children from low-income households could have significant social returns (Figure 24). This would also help to raise female labour market participation, as low access to early-childhood education and childcare reinforces cultural factors that hinder women with small children to participate in the labour market.

Access to food, clean drinking water and good health services from an early age is crucial for the development of cognitive and social skills (Heckman, Pinto and Savelyev, 2013[69]; Heckman et al., 2010[71]). Thus, improving access to early childhood education for children from low-income households should be complemented with continued efforts to eradicate extreme poverty, raise access to universal health care and improve water and sanitation services in schools and communities (UNICEF, 2020[6]; Benstead, 2021[66]). Shifting more resources to the newly introduced electronic cash-transfer program would be one way to improve access to food and health care for many poor children. Food could also be directly provided in schools to ensure nutrition quality, but this would require improving school infrastructure. Eventually, the cash transfer programme could also be partly linked to enrolment in early childhood education or home visits of teachers consulting parents on education practices. When allocating scarce spaces in early childhood education, preference should be given to low-income households and single-parent families.

Figure 28. Access to early-childhood education is low, particularly among low-income households



Source: OECD Education at a Glance, 2020; UNICEF (2020); UNICEF; and INS (2019).

Although improving access to early-childhood education for the poor would have the largest effects on equalising opportunities for all children, other structural weaknesses of the basic education system benefiting children from richer families with higher educational background should be addressed (Benstead, 2021[66]). The dual structure of the public system for lower and upper secondary education with 46 elite schools, which are accessible through a general exam after primary education and offer around 3000 places per year, favours social polarisation and weakens the learning environment for ordinary students (UNICEF, 2020[6]). Separating the high performing students from ordinary classmates significantly reduces the performance of peers, particularly for students with average skills (Burke and Sass, 2013[72]). Children from richer households have access to costly private lessons to prepare for entry exams and, hence, have higher chances to access these elite schools, where they benefit from higher quality of teaching and school equipment, and positive peer effects (Benstead, 2021[66]). Also in ordinary schools, the ability to pay for private lessons increases chances for better exam results, sometimes directly linked to cash payments (UNICEF, 2020[6]; Benstead, 2021[66]).

Increasing teaching quality in all public schools, strengthening the work ethic of teachers, and providing targeted support for disadvantaged students would reduce dropouts, improve opportunities for all students and ensure that the education system can contribute to raising social mobility. This should include scaling up the project “école de la deuxième chance”, which allows young dropouts to repeat secondary school or VET until the age of 20 through a more targeted pedagogical and financial support. However, to prevent students from dropping out of school in the first place, it is crucial to provide targeted pedagogical and psychological support to students at risk already in school. A new government project has developed indicators to identify students at risk of dropping out, and this should be used to better target support to these students.

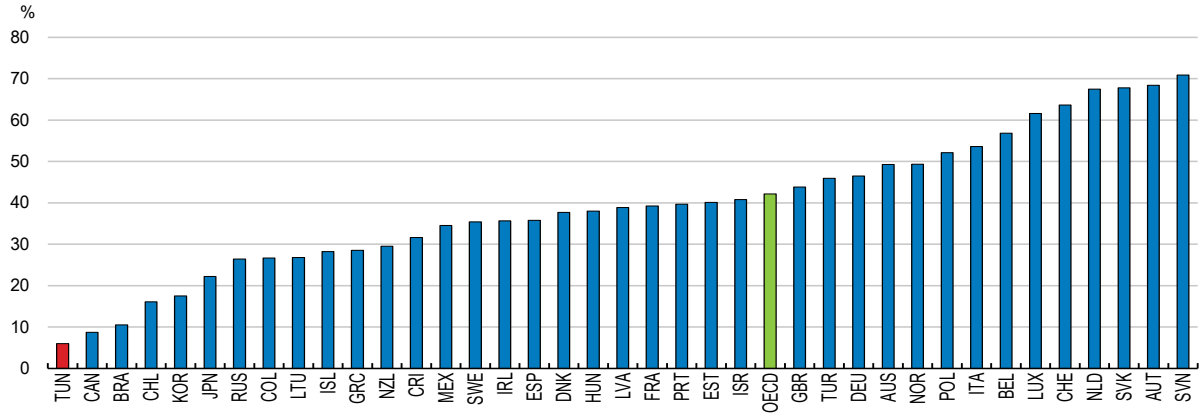
Improving the quality and attractiveness of initial vocational education and training

The low quality and attractiveness of initial VET contribute to high dropout rates in general secondary education. After completing lower-secondary education, many students do not choose the initial VET path, although a curriculum involving subjects that are more practical would suit them better and bring better job prospects than the more academic curriculum in general secondary education (Figure 29) (OECD, 2016[73]). This is related to infrastructure bottlenecks that prevent students from choosing technical education tracks, insufficient information about labour market trends, vacancies and skill needs of firms, and a culture that values white-collar jobs much more than blue-collar jobs. Obtaining a tertiary diploma

has guaranteed a secure and well-paid job for many decades in Tunisia, particularly in the public sector, which is why many parents still advice their children not to choose the VET path or take up a blue collar job (Boughzala, 2019[1]; OECD, 2015[7]).

Figure 29. The share of upper secondary students in initial VET is low

Share of upper secondary students in initial VET (in %), 2018



Source: OECD, Education at a Glance 2020; and (Boughzala, 2019[1]).

It is crucial to better inform students and their parents, but also workers and unemployed adults, about employment and wage prospects, the skill needs of firms as well as available VET programs and their content and quality (OECD, 2016[74]) (ONEQ, 2017[62]). Introducing an IT system that provides region-specific information on vacancies and skill needs of firms according to a detailed classification of occupations and maps this information to the number of unemployed in corresponding education levels and fields of study or occupations would be one-step into this direction (OECD, 2021[75]). This should also include information about the content and quality of existing VET and university programmes as well as labour market outcomes of former graduates (Fouarge et al., 2020[76]). This IT system should be complemented with personalised counselling services to students in lower-secondary education, but also to workers and the unemployed, to better support their educational choices, training and career development (OECD, 2021[75]; OECD, 2016[74]). The national employment agency is visiting schools from time to time to give short presentations on labour-market trends. However, these efforts are insufficient due to a significant under-staffing of the agency and the lack of a publicly available IT system on labour market trends and evaluations of existing VET and university programs (World Bank, 2021[77]).

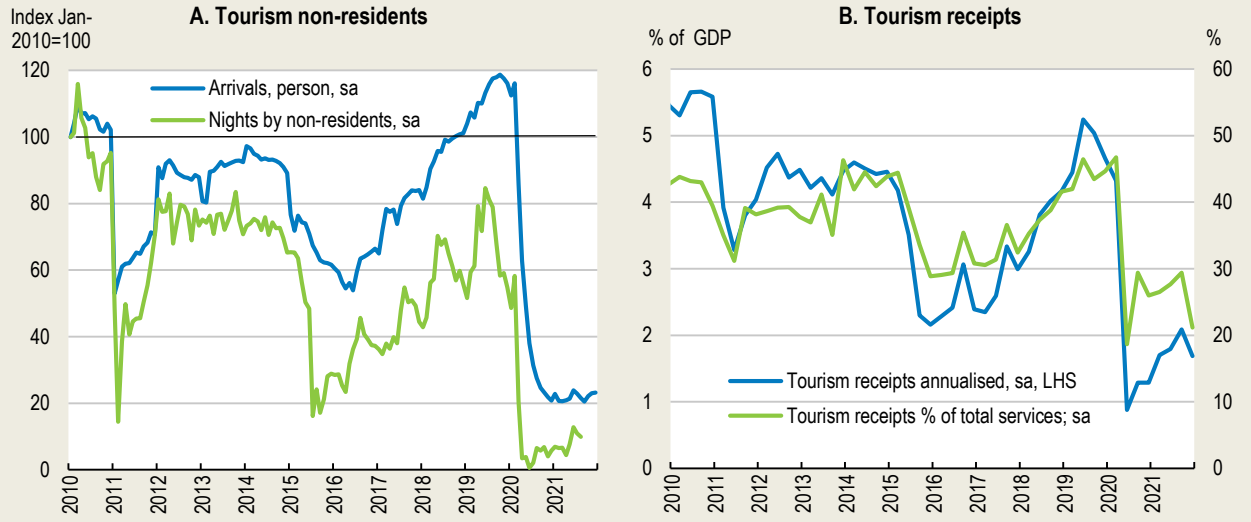
Firms need to play a larger role in promoting and raising the attractiveness of blue-collar and low-skilled white-collar jobs. Difficult working conditions, low wages and weak human resource (HR) practices contribute to explain why firms in textile and wearing apparel, construction, tourism and agriculture have issues to fill vacancies for blue-collar and low-skilled white collar jobs (Box 3) (Angel-Urdinola, Nucifora and Robalino, 2015[5]; Boughzala, 2019[1]). Many HR departments in firms are exclusively dealing with administrative matters and lack comprehensive strategies for training and professional development of employees. For many blue-collar workers, the sole training opportunities are related to health and safety standards. Due to rigid wage schedules and career paths strongly linked to diplomas that mirror the public sector system, blue-collar workers have little perspectives for professional development in many firms. This strongly reduces the attractiveness of initial VET and blue-collar jobs (Angel-Urdinola, Nucifora and Robalino, 2015[5]).

Box 3. Unlocking the potential of the tourism sector

Tunisia has a strong comparative advantage in tourism, with its long sandy beaches, a rich cultural heritage and diverse landscapes. It is close to Europe with a mild climate that allows a longer tourism season than in Southern European countries. Tourism is an important sector for the Tunisian economy. In 2019, it represented 45% of services exports (or 13% of total exports), generating important foreign currency inflows (Figure 30). It directly creates around 130 000 jobs, and more than four times as many when accounting for indirect job creation through suppliers and complementary services (Boughzala, 2019[1]).

Before the COVID-19 pandemic, tourism activity had just recovered from the terrorist attacks in 2015, with arrivals breaking new records in 2018 (8 million) and 2019 (9 million), significantly above the previous peak of 7 million tourist arrivals in 2010 (Figure 30). However, total tourism revenues and the number of nights spent by non-residents have not reached pre-2015 levels, which signals a structural shift towards less value added activities. Moreover, the origin of tourist arrivals has shifted from Europe towards neighbouring North African countries as well as Russia. The occupancy rate and revenue per hotel bed stayed well below 2010 levels.

Figure 30. Before the pandemic, tourist arrivals had recovered, but revenues had not



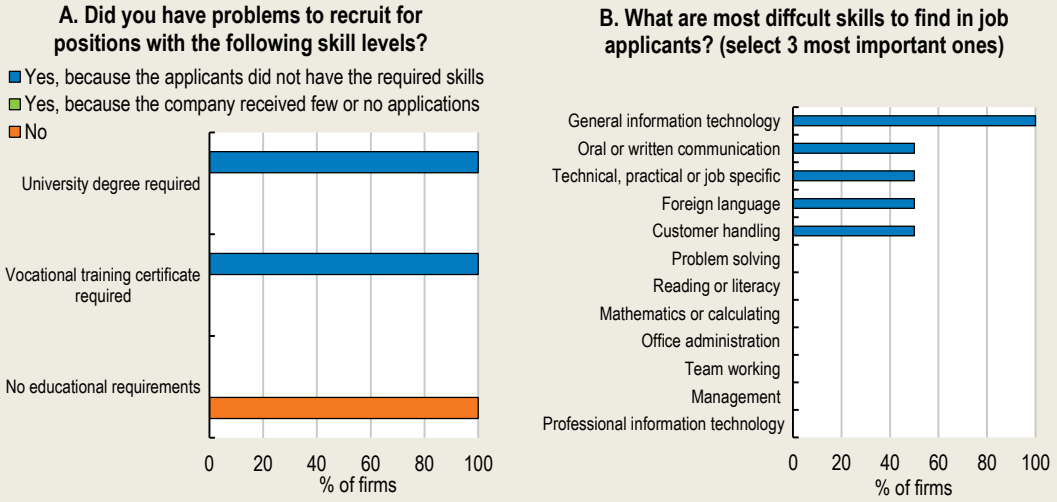
Source: CEIC; BCT; and INS.

A range of structural factors is holding back the potential of the Tunisian tourism sector. The share of non-performing loans (NPL) is particularly high, which complicates access to finance for investments in new innovative projects and the renewal of the decaying infrastructure (Boughzala, 2019[1]). Over the years, public sector banks have given preferential conditions and extended repayment periods to incumbent (and often well-connected) tourism firms postponing their necessary restructuring (OECD, 2018[9]). Access to finance and market entry is difficult for young and innovative firms, which also suffer from complex authorisation regimes and administrative burden (Figure 12).

Weak competitive pressures have hindered innovation among incumbents. In particular, outdated HR practices reduce the attractiveness of the sector for young labour market entrants and partly explain why many firms report having difficulties to recruit workers with the right skills (Figure 31). Decreasing value added and labour productivity keep wages low and many firms do not invest enough in training, nor do they provide sufficient opportunities for professional development or an attractive working environment

(Boughzala, 2019[1]). Moreover, tourism activities are highly concentrated in coastal regions, where unemployment rates are lower, and recruiting staff from distant governorates is more complicated due to low labour mobility and high rental prices. Another important factor explaining the recruitment difficulties of tourism firms is the lack of ICT and soft skills among VET graduates, in particular concerning communication, languages and client interaction (Figure 31) (OECD, 2021[78]). As in other sectors, cooperation between public initial VET institutes and the private sector is weak and many curricula are outdated (Boughzala, 2019[1]). Moreover, VET curricula are not adapted to the seasonality of tourism activity and integrated internship periods are too short, which reduces on-the-job training opportunities for students.

Figure 31. Many VET graduates in tourism-related fields lack ICT and soft skills



Source: Firm survey on skill needs conducted by the OECD for this report; data refers to the year 2019 (Annex A.1).

In addition to difficulties in sourcing production factors (capital and labour), high tariffs and restrictive non-tariff measures complicate access to important inputs for hotels and restaurants. These are mainly food and agricultural products, but also construction materials and equipment. Improving access to intermediate inputs and capital goods through a 50% reduction in tariffs and non-tariff measures would raise production, employment and value added in hospitality services by around 6% (Figure 19). Most job opportunities would arise for low-to-medium skilled white-collar workers, such as clerks and service workers, but also for waiters, cleaning professions and others (Cassimon, Grundke and Kowalski, forthcoming[59]).

Realising this potential and focusing on the development of alternative and higher value added forms of tourism, such as adventure, sustainable or wellness tourism, in so far underdeveloped regions, should be a policy priority, as it could create a large number of job opportunities for unemployed youth. However, to unlock this great potential it is crucial to reduce market entry barriers, increase competition and spur innovation. Moreover, this does not only require better coordination between firms and education and training institutions to improve the skills of the workforce, but also a better coordination among firms to improve the governance of the sector and develop a common vision and international branding strategy focusing on higher value added activities (Boughzala, 2019[1]; OECD, 2020[79]).

Positive examples exist, where firms have introduced incentive systems and career development strategies. In the automotive industry, some firms open white-collar jobs and sometimes even management positions to experienced blue-collar workers, with no requirement to possess formal diploma. Such an approach can make initial VET and blue-collar jobs more attractive for lower-secondary students. Positive experiences need to be shared among firms and business associations. Moreover, firms should support their promising blue-collar workers to continue formal education in their field of interest, by financing part of the necessary investments. This should be facilitated by improving access to technical and other tertiary

degrees for initial VET graduates and the recognition of prior learning to reduce study time and costs (Boughzala, 2019[1]; Arfa et al., 2018[80]). Creating a positive corporate culture can also contribute to raise the attractiveness of initial VET and blue-collar jobs (OECD, 2018[81]; OECD, 2010[82]).

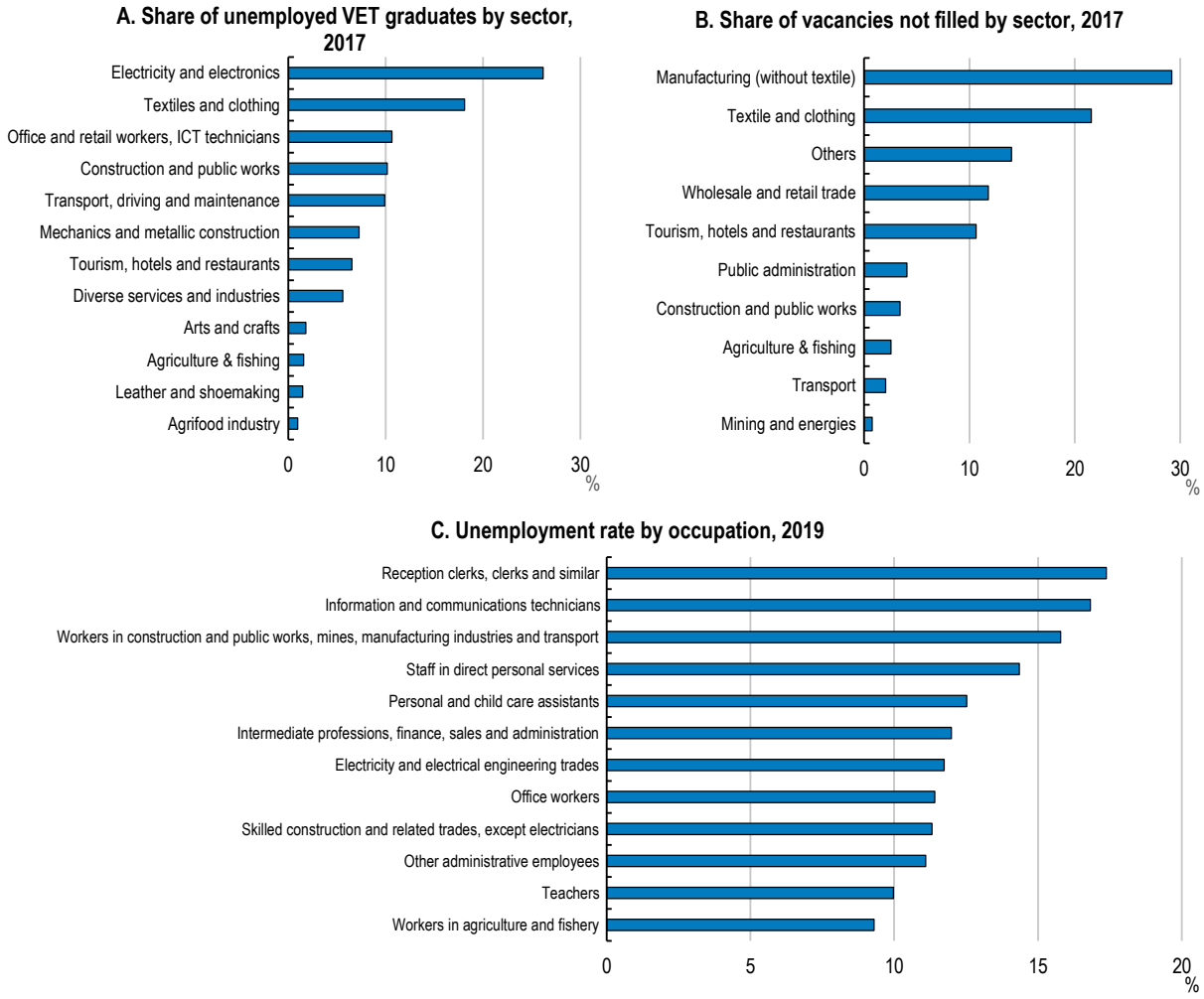
The weak quality of many initial VET programmes contributes to reducing their attractiveness for lower-secondary students (Arfa et al., 2018[80]). Although comprehensive evaluations of existing initial VET programs do not exist, many firms complain that VET programs do not prepare graduates with the technical and soft skills as well as specific tools required for the job (IACE, 2019[12]). This is further corroborated by the fact that many graduates with a 2-year technical degree are unemployed whereas firms have difficulties to fill vacancies for the respective occupations (Figure 32) (Boughzala, 2019[1]). This is particularly the case in areas like electrical equipment and mechatronics, informatics, office administration, but also in textile and wearing apparel, construction, and tourism (ONEQ, 2017[62]; Boughzala, 2019[1]). In addition, initial VET programmes do not exist for some occupations such as blue-collar workers in the cable industry, which employs more than 80 000 workers and is present in Tunisia since decades (Arfa et al., 2018[80]).

Initial VET is mainly conducted by public training institutes, where it is free of charge. The large majority of public training institutes is managed by the public professional training agency (ATFP), which employs more than 10 000 instructors and administrative staff. It covers initial VET for almost all sectors, except agriculture, tourism and health, which are managed by specific bodies. The lack of cooperation between the public training system and firms is mainly due to the weak organisational structure of the ATFP, including a lack of cooperation and coordination with other agencies, insufficient IT systems observing labour market trends and skill needs of firms, and a missing culture of impact evaluation and stakeholder involvement (Arfa et al., 2018[80]; World Bank, 2021[77]). Better targeting of IT systems and communication to sector-specific business associations would help improving coordination to better adapt initial VET programs and curricula to the skill needs of firms.

Improving the matching of study places in initial VET by subject to local skill needs of firms can significantly raise employment chances of VET graduates, as regional heterogeneity in production structures is large and labour mobility is low (OECD, 2020[24]). Information on the regional supply of initial VET places by subject as well as an evaluation of these programmes and skill needs of local firms is missing (Arfa et al., 2018[80]). The offer of different fields of study in regional training institutes is mainly driven by the capacity of the system and does not sufficiently reflect the needs of the local economy (OECD, 2015[8]). Intensifying cooperation and coordination between the ATFP and local private sector representatives would be a first step into the right direction. Combining this with IT systems that link firm's skill needs with the supply of initial VET places on a regional basis can significantly raise the effectiveness and attractiveness of the public initial VET system (OECD, 2020[24]).

More competition from private initial VET institutes could improve the adaptation of initial VET programmes and curricula to private sector skill needs. Only 19% of students in initial VET are registered in private institutes, which mostly offer initial VET for services occupations such as office and sales workers and jobs in the tourism industry, but very little careers in manufacturing or IT and business services (ONEQ, 2019[83]). The Ministry of professional training supervises private VET institutes and decides together with other public agencies about the official recognition of initial VET diploma. This administrative process is complicated and time-consuming: recognition of degrees and related curricula takes up to 3 years, which creates the risk that curricula related to technology-intensive subjects are out-dated when they receive approval. Only about 56% of students in private VET institutes receive a degree officially recognised by the Ministry (UNICEF, 2020[6]). Facilitating changes to existing curricula and the recognition of new programs in public and private VET institutes is crucial to better adapt initial VET to constantly evolving skill needs of firms and increase the employability of graduates.

Figure 32. Unemployment of VET graduates and in corresponding occupations is high, although firms have difficulties to fill related vacancies



Source: (ONEQ, 2017[62]); Système d'informations ANETI; and INS.

A more active participation of firms and business associations is required to better link existing workplace training to the content of formal VET courses. Although more than 80% of initial VET students currently study in programs including workplace training in firms, communication and coordination between instructors in training institutes and supervisors in firms is insufficient (Arfa et al., 2018[80]). This is due to a weak legal framework regulating the employment of apprentices and coordination with VET institutes, but also due to insufficient pedagogical training and engagement of supervisors of apprentices in firms. Many apprentices do not follow formal VET courses, are informally employed and do not receive a formal degree at the end of their apprenticeship (Arfa et al., 2018[80]; Boughzala, 2019[1]). Many firms do not see initial VET as an opportunity to train their future employees, mainly because they fear that training investments will be lost when graduates leave to work in other firms. Thus, efforts to improve the attractiveness of initial VET also need to change the mind-set of business associations and firms to solve the public goods issue related to training investments into young workers (OECD, 2015[8]; OECD, 2010[82]).

Although only a small share of lower secondary students chooses initial VET, dropout rates in initial VET are high reaching around 30% in 2017 (Arfa et al., 2018[80]). This is related to negative selection of the weakest students into technical VET tracks of lower secondary education ("colleges techniques"), which is reinforced by the institutional design that automatically allocates dropouts from the general education track

to the VET track of lower-secondary schools. Many students that arrive in initial VET at the upper-secondary level have very low levels of basic cognitive and soft skills, which makes it hard for them to follow VET courses (UNICEF, 2020[6]). Dropout rates are particularly high in the first year of upper secondary VET (Arfa et al., 2018[80]). Integrating technical tracks into the general track in lower-secondary education and avoiding a too early separation of school forms would reduce the negative selection and has the chance to improve the attractiveness of upper-secondary VET for average students.

The low quality of teaching and a decaying infrastructure reduce the quality of VET and contribute to high dropout rates (Arfa et al., 2018[80]). Many VET teachers do not have a background in technical education and have not worked in the private sector, as the allocation of teachers to initial VET was mainly driven by the large supply of unemployed tertiary graduates with a background in humanities, waiting for a public sector job (Arfa et al., 2018[80]; Angel-Urdinola, Nucifora and Robalino, 2015[5]). Thus, many of them have internalised the negative connotation of VET and blue-collar work, which does not help to motivate young students in initial VET. Moreover, as in basic education, many of these teachers have weak pedagogical skills due to weak criteria for teacher selection and the low quality of initial teacher training. A comprehensive system of teacher evaluation and targeted continuous teacher training are lacking, while existing bonus systems are not linked to student performance and do not incentivise teachers to improve teaching quality (Arfa et al., 2018[80]). Many curricula are outdated and lack sufficient soft-skill training, particularly related to communication and presentation skills as well as teamwork, which strongly reduces the employability of VET graduates (OECD, 2015[8]).

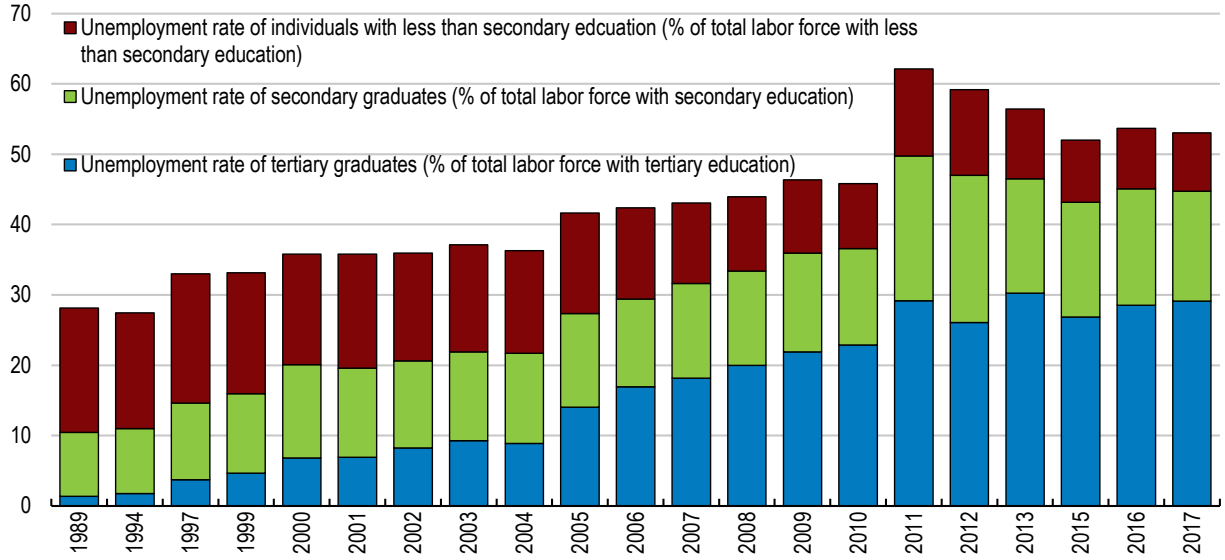
Due to relatively low spending for VET compared to other education levels and the rising wage bill (Figure 24), public investment has strongly decreased and infrastructure in many training centres is very poor (Arfa et al., 2018[80]). Outdated training machines and equipment add to the weak adaptation of curricula to skill needs of firms, as students cannot train and learn on machines and technology used by firms. Moreover, housing conditions for VET students are problematic, particularly in the second year as not all students can access subsidised housing (Arfa et al., 2018[80]). This is an important reason for dropping out, as many students from interior provinces cannot afford paying high rents in cities where many VET institutes are located (Arfa et al., 2018[80]). Increasing spending efficiency in tertiary education and reallocating resources to initial VET could improve the quality and attractiveness of VET, reduce dropout rates and provide firms with a larger pool of graduates with the right skills (Figure 24) (OECD, 2015[7]).

Age limits for apprenticeships prevent students that have dropped out from secondary education, as well as other low-skilled adults who want to up-skill or change occupations, to enter parts of the initial VET system (ILO, 2013[84]; Arfa et al., 2018[80]). The current system only allows entry of students that are younger than 20 years, whereas apprenticeship systems in many other countries have much higher age limits (OECD, 2019[85]; OECD, 2015[7]). As basic education for adults is non-existent, this leaves many young men and women that have dropped out from school without any alternative to upgrade their basic and technical skills. Moreover, high administrative burden and poor recognition of prior-learning hinder students dropping out from tertiary education, who have realised that a more practical education would suit them better, to enter initial VET and pursue a blue-collar career (Angel-Urdinola, Nucifora and Robalino, 2015[5]). This is particularly detrimental as these students generally have higher average cognitive and social skills, as they have successfully finished general secondary education, and could contribute to a better learning atmosphere in initial VET classes. In addition, these candidates would be ideal for firms, as they have more experience and higher motivation to benefit from VET courses to improve their employability.

Strengthening tertiary education

The success in raising access to education since the 1990s has been most pronounced in tertiary education (Figure 23). Gross enrolment rates rose from 8% in the early 1990s to 32% 2018, and are around 50% higher for women than for men (Boughzala, 2019[1]). The number of students in public universities has more than tripled since the 1990s, from around 100 000 in the early 1990s to over 300 000 in the 2010s, which was enabled by large public investments into education infrastructure and hiring of teaching staff (Angel-Urdinola, Nucifora and Robalino, 2015[5]). However, the increase in the number of tertiary graduates has led to rising unemployment, as job creation has been concentrated in low-skill intensive activities with little demand for tertiary graduates (Figure 33, Figure 7, Figure 8).

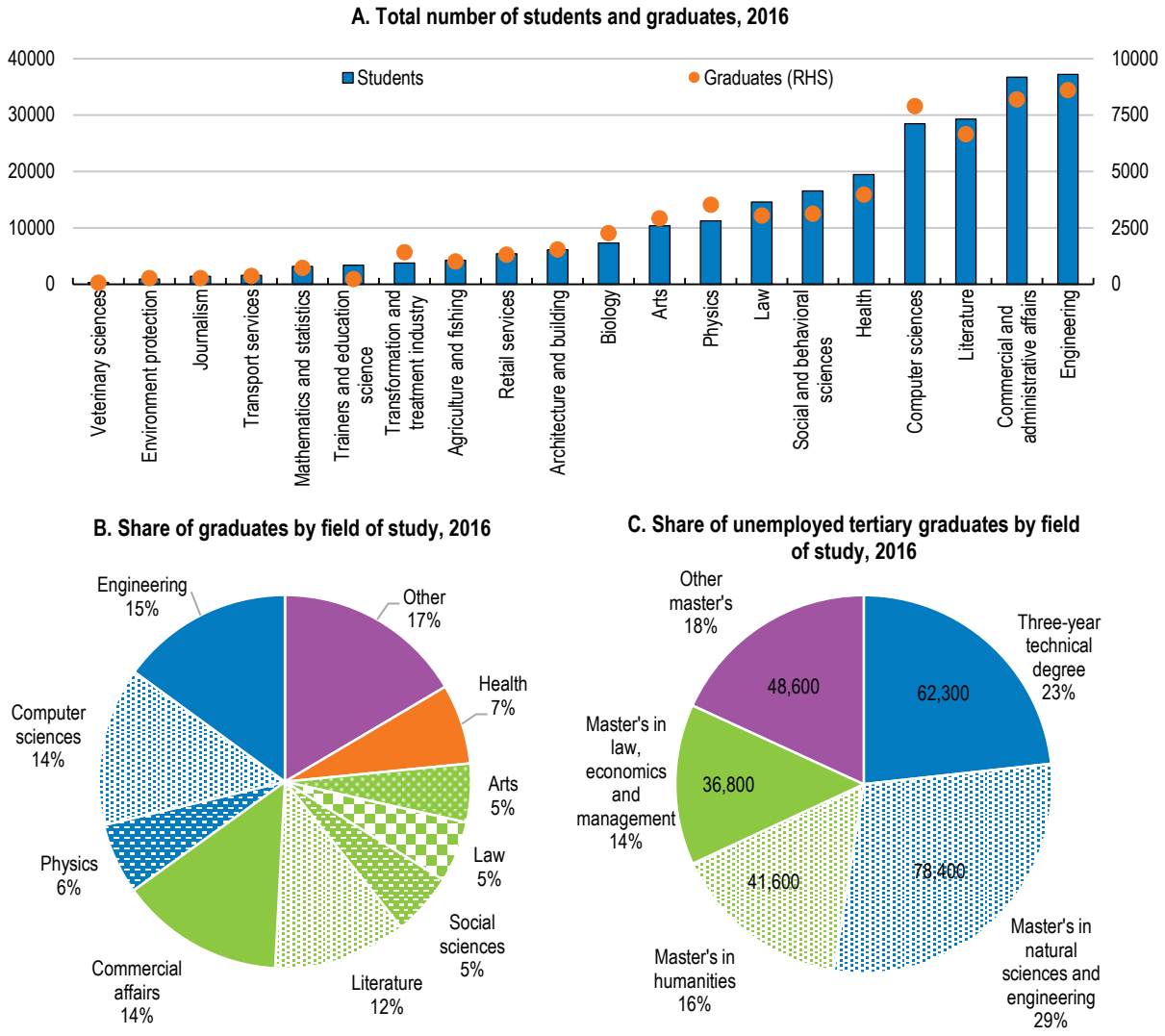
Figure 33. Unemployment of tertiary graduates has strongly increased since the 1990s



Note: Data for the years 1990-1993, 1995, 1996, 1998 and 2014 is missing.
Source: CEIC.

At the same time, many firms in higher value added activities such as ICT and business services, pharmaceuticals or other technology intensive manufacturing activities complain that they do not find enough tertiary graduates with the skills they need (IACE, 2019[12]; Boughzala, 2019[1]). This is even more surprising as the majority of tertiary students graduates in STEM subjects and unemployment among them is high (Figure 34). Around 30% of unemployed tertiary graduates hold a master's degree in STEM subjects and more than 20% hold a three-year technical tertiary degree (BTS). The unemployment rate among ICT technicians is with 17% one of the highest across all occupations (Figure 32). Although some of the graduates with STEM master's degrees register as unemployed to obtain necessary documents for migration to Europe, the major part does not possess the skills required for high-skilled white-collar jobs in the private sector (Boughzala, 2019[1]).

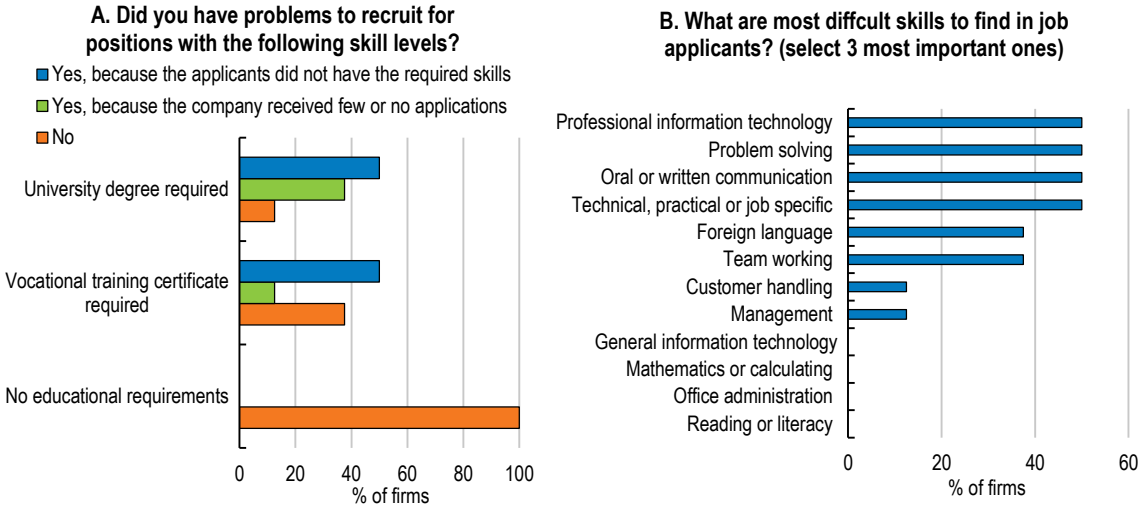
Figure 34. Many youth study tertiary degrees in STEM, and unemployment among them is high



Source: (Boughzala, 2019[1]).

Significant mismatches exist between the skills that graduates obtain at university and the skills required for high-skilled white-collar jobs in the private sector. Half of firms in ICT services indicate that they have difficulties filling vacancies for white-collar jobs requiring a tertiary degree, because candidates do not possess the skills needed for the job (Figure 35) (UNESCO, 2021[60]). In particular, candidates lack specific technical and ICT skills, which indicates that university curricula do not include frontier technologies and tools used in ICT services firms. Many firms need to provide costly additional technical training to new employees to integrate them into production processes (IFC and UTICA, 2017[61]). Moreover, many candidates also lack key soft skills such as communication and language skills, team-working skills and problem solving and conflict resolution skills (Figure 35). This is also the case in many manufacturing firms, which have difficulties to find the right candidates for vacancies of medium to high-skilled white-collar jobs (Box 4).

Figure 35. Many ICT graduates lack the technical and soft skills required by firms



Source: Firm survey on skill needs conducted by the OECD for this report; data refers to the year 2019 (Annex A.1).

This signals that the public education system does not equip graduates with a sufficient level of key soft skills, which are crucial for increasing the globalisation and digitalisation of production processes (Figure 21, Figure 35) (Grundke et al., 2017[63]; OECD, 2019[50]). Compared to other countries, 15-year old students show particularly weak performance in literacy skills (Figure 27). At the root of the weak performance in soft-skills are structural issues of the basic education system (see above). As the digital revolution and a further integration into the world economy have large potential to foster the creation of good jobs and raise the living standards, it is a priority to reform the basic education system to provide all students with a sufficient level of cognitive and soft skills. In particular, for ICT services, which have the potential to create many high-skill intensive jobs in interior regions of Tunisia, a rising supply of graduates with the right skill-set could attract more foreign firms and stimulate the entry of domestic start-ups (Box 1).

Box 4. The automotive industry has strong potential for innovation and job creation

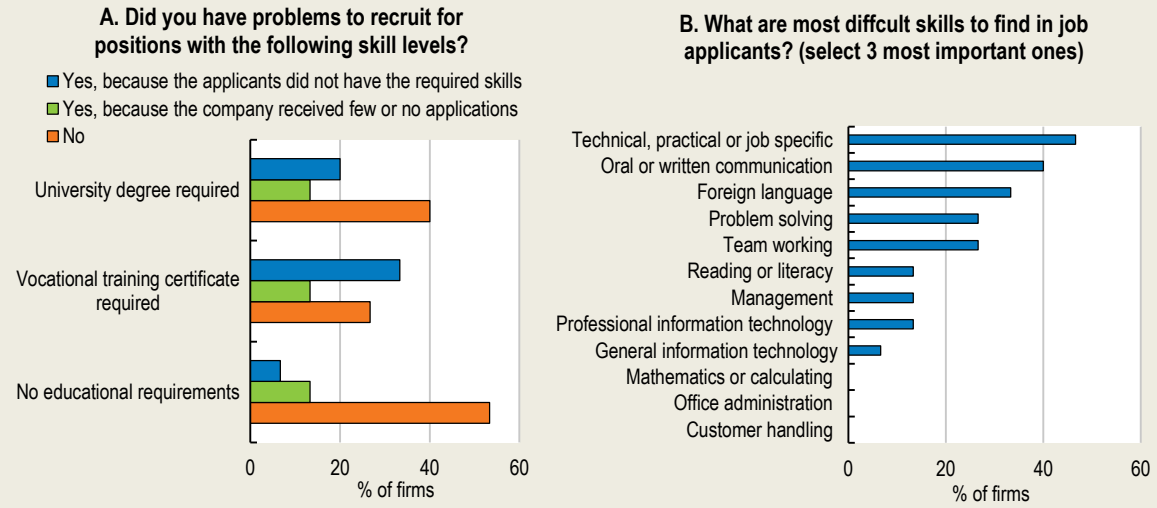
Since the early 2000s, the automotive industry has become an important driver of exports and employment growth in Tunisia. It employs more than 90 000 workers in more than 260 national and international firms (as of 2019), and production and exports have grown by around 12% per year from 2007-2017 (TAA, 2020[86]). The automotive cluster is mainly located in four agglomerations in the North-East and comprises a wide range of different activities along the whole value chain, including electrical and electronic components, cables, engines and engine components, other mechanical components, plastics and rubber, textile and leather, assembly of cars as well as software and design development. These activities related to the automotive industry contributed around 4% of GDP in 2019 (TIA, 2020[87]).

This success story has been enabled by the 1998 association agreement with the European Union, which has strongly improved access to better-quality inputs and capital goods for manufacturing firms and opened up potential markets for higher value-added products (European Commission, 2021[15]). More than 65% of automotive-related companies are offshore firms, mostly subsidiaries of French, German and Italian firms and exporting to the European Union. However, 35% of firms are Tunisian onshore firms, which have increased their exports almost fivefold from 2003 until 2019, above the growth rate for offshore firms (OECD calculations based on RNE data). This shows the great potential that an increasing international integration can have for domestic firms.

Tariffs for intermediate inputs and capital goods from non-EU countries are still high, and non-tariff measures are hampering access to imports from all sources (WTO, 2016[11]; European Commission, 2019[28]). Reducing tariffs and non-tariff measures by 50% would raise production, employment and value added in the automotive industry by more than 8% (Figure 19). Job opportunities would particularly arise for medium and high-skilled workers, such as technicians and associate professionals and middle management occupations (Cassimon, Grundke and Kowalski, forthcoming[59]).

However, the increasing international integration of the domestic economy needs to be accompanied by improvements in the VET and tertiary education systems. Many firms in the automotive sector have difficulties to find workers with the right skills, especially for vacancies in medium- and high-skill intensive jobs (Figure 36) (TAA, 2020[86]). Many applicants do not have a sufficient level in technical and soft skills, such as communication and languages, team working and problem solving skills. As in other economic sectors (and described elsewhere in the chapter), this is related to structural issues in basic education and missing coordination and cooperation between VET institutes and universities and firms. Critical issues concern the adaptation of curricula and teaching methods to private sector skills needs and on-the-job training arrangements. However, in the automotive industry the share of firms that indicates that available VET courses do not correspond to skill needs of workers is more than 50% and much higher than in other sectors (OECD calculations based on firm level data, see Annex A.1). Thus, the need for better cooperation between public VET institutes and private firms is particularly high in the automotive sector.

Figure 36. Firms in automotive have difficulties finding workers with the right skills



Source: Firm survey on skill needs conducted by the OECD for this report; data refers to the year 2019 (Annex A.1).

In spite of these issues, there are very encouraging examples that show the potential of the Tunisian tertiary education and innovation system and its cooperation with the private sector. Telnet, which is a Tunisian multinational technology company and a central player in the automotive cluster, has recently launched a satellite, which was developed and constructed by local engineers and is part of a bigger project to develop the Internet-of-things in Tunisia. Engineering graduates from the best Tunisian universities are highly qualified, but often decide to migrate to the EU to earn better salaries, which intensifies domestic skill shortages (Boughzala, 2019[1]; UNESCO, 2021[60]). The main solution for the existing skill shortages is to raise the quality of education for students in the non-elite part of the education system and to improve the cooperation with the private sector. Several bigger firms in the automotive cluster have recently started co-operations with universities to introduce study programmes

for engineers and other high-skilled white-collar occupations, which include extensive on-the-job training periods and adapt curricula content to skill needs of firms.

The COVID-19 pandemic and the ensuing disruptions in global supply chains have led European firms and policy makers to re-evaluate the advantages of re- and near-shoring key activities closer to the EU, including automotive and micro-electronics among others (Eurofound, 2021[88]). This is a great opportunity for Tunisia to further increase its integration into global value chains and upgrade and diversify its export activities. However, this requires bold and rapid policy action to reduce existing trade barriers and administrative burden, improve customs procedures and infrastructures, and ease access to finance for domestic firms. The accelerating green and digital transformation, however, pose significant challenges to the Tunisian automotive cluster, as firms need to adapt to new production trends concerning electromobility and industry 4.0. Improving the skills of the workforce and strengthening innovation, e.g. by lowering market entry barriers and raising competition complemented by improved coordination between firms, universities and research institutes, is key for taking advantage of the opportunities ahead.

The public tertiary education system operates in isolation from the private sector and labour market needs, similar to the initial VET system (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Cooperation between universities, the Ministry of Higher Education and the private sector are weak due to a missing culture of impact evaluation and stakeholder involvement (Arfa et al., 2018[80]; Angel-Urdinola, Nucifora and Robalino, 2015[5]). Many firms complain that in addition to weak adaptation of university curricula to skill needs of firms, certain profiles do not exist at all, such as a specific track for purchasing managers in business schools or specialised engineers in rubber manufacturing. Thus, intensifying information exchange, coordination and cooperation with the private sector is key to make the tertiary education system more responsive to labour market needs. Systematic evaluations of existing study-programmes and the resulting employability of graduates are missing. If alumni-surveys exist, they are not systematically used to inform universities and potential students about existing skill mismatches and the labour market success of past graduates.

A more active participation of firms is necessary to make skills development in tertiary education more demand driven (Angel-Urdinola, Nucifora and Robalino, 2015[5]). This concerns a more active cooperation and coordination in the design of new programs and curricula, but also in research and development and the combination of formal education programmes with workplace training. Firm-level analysis conducted for this report finds that firms which invest into research and development have a 3.2% higher total-factor productivity compared to other firms (Figure 16, Annex A.2). Intensifying the cooperation between public research institutions and the private sector holds large potential to improve innovation capacities, better prepare graduates with the skills needed by firms and raise productivity of Tunisian firms.

Administrative burden for adapting course content to new technologies, adding additional courses into curricula or introducing new programs and degrees is high. These procedures can take up to 3 years, which is too long especially for technical subjects, as some technologies can already be outdated again after 3 years. To make existing programs and curricula more responsive to skill needs of firms, these procedures should be streamlined and curricula should be made more flexible by reducing the number of hours for obligatory core subjects. However, as inflation of new degrees and certificates can also distort signals in the labour market and increase skill mismatch, the introduction of new programs and degrees should be limited and complemented with a comprehensive quality evaluation and certification system for tertiary degrees in public and private universities. This would support secondary graduates in their career choices and set the right incentives for public universities to improve their programmes.

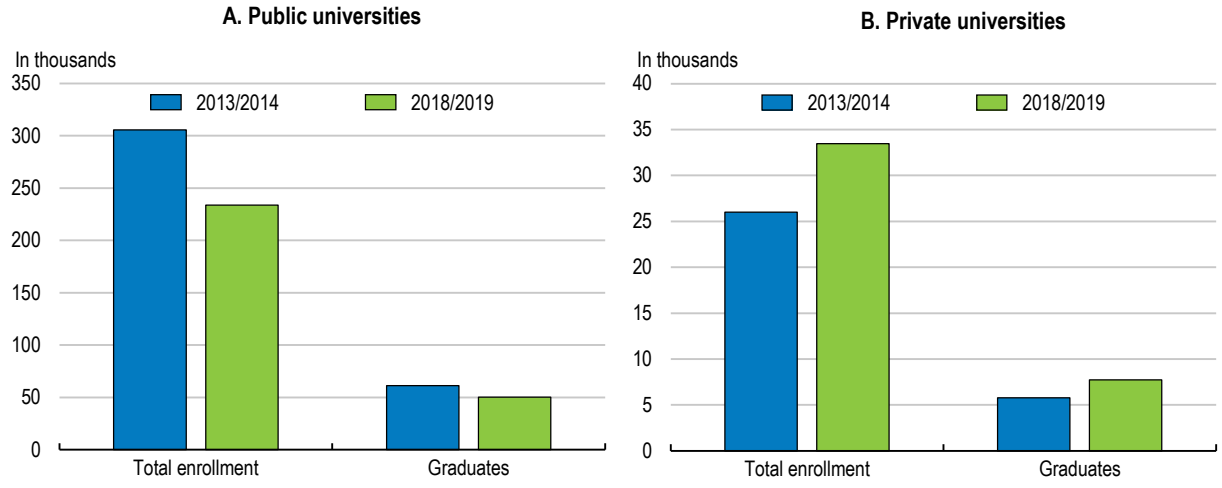
Introducing workplace-training into tertiary education can help reducing skill-mismatch, as it allows students to get familiar with frontier technologies and methods used in firms. However, the legal framework for integrating workplace training into tertiary education programs is weak. Firms are not allowed to employ

students with longer-term work contracts, leaving them with short-term internship contracts as the sole option. This prevents them from undertaking training investments, as they fear that their investments will have no return when graduates leave to work for other firms. Allowing for more flexibility in work-contracts for tertiary students, however, needs to be complemented with stronger engagement from sectoral business associations to solve the coordination issues regarding training investments of single firms into young workers (OECD, 2015[8]; OECD, 2010[82]).

The quality of tertiary education can also make a difference in reducing skill mismatches related to soft-skills, and partly make-up for structural weaknesses in basic education. Many firms report that graduates from private universities have better communication and presentation as well as team-working skills, although the best students according to high-school exams select into public universities (IACE, 2019[12]). This is due to a stronger focus of curricula and performance assessment on soft-skills, including more curricula hours dedicated to specific soft-skill courses using modern pedagogical methods. Moreover, private universities are also more responsive to technical skill needs of firms. Recently, many private universities have started to cooperate with firms to develop three- to five-year study programs with workplace-training elements, allowing students to get familiar with frontier technologies and methods used in firms. This higher responsiveness of private universities to the skill needs of firms might partly explain the increasing attractiveness of private universities, as indicated by rising student and graduate numbers (Figure 37).

Figure 37. The attractiveness of public tertiary education has decreased

Number of enrolled students and graduates for public and private universities



Source: Ministry of Education, Tunisia.

The skill mismatch in the labour market is also related to the misallocation of students to fields of study. Over 40% of students study and graduate in humanities, law or business administration and economics, and around 30% of unemployed tertiary graduates hold a master's degree in these fields (Figure 34). Since 2011, many of them have been hired by the public sector, particularly in the public administration and the education system, and many unemployed and current students still hope for future employment in the public sector (Angel-Urdinola, Nucifora and Robalino, 2015[5]; Boughzala, 2019[1]). This is mainly due to high wages and social security benefits as well as long-term contracts. However, due to the difficult fiscal situation, the pace of public sector hiring and wage increases are unlikely to continue. Although private education services are expanding, they can only partly absorb these tertiary graduates, and unemployment among teachers and graduates in humanities will remain high (Figure 37, Figure 10, Figure 32).

Better informing secondary school students about the content and quality of tertiary education programmes and labour market outcomes of graduates is crucial to improve the allocation of students to fields of study. It would also set the right incentives for universities to improve the quality of their programmes and better adapt them to the skill needs of firms. Comprehensive information about labour market outcomes of former graduates does not exist. Some universities have introduced personal counselling services, but these need to be extended and complemented with a comprehensive and publicly available IT system providing information on the quality of study programmes (World Bank, 2021[77]). Moreover, reducing the large gap between public and private sector wages for labour market entrants, which including jobs in SOEs reached 35% in 2018, is also key to encourage entrepreneurship and promote fields of study that prepare for a career in the private sector (Angel-Urdinola, Nucifora and Robalino, 2015[5]; World Bank, 2021[77]).

Although spending for tertiary education is high and spending per student has increased since 2013, supply constraints in tertiary education exist that lead many students to choose humanities, law or business administration and economics (Figure 24). Many regional universities do not offer the full range of tertiary programs due to a lack of equipment and specialised university teachers. Secondary students that cannot afford to pay the high rents in bigger cities choose to study closer to the family, restricting their study choices. Moreover, the lack of entry requirements for humanities, law and business administration and economics contributes to the high number of students. Better allocating resources across different fields of studies to reflect existing and future labour market needs and adapting entry requirements accordingly could raise spending efficiency (World Bank, 2021[77]). Supporting poorer qualified students from interior regions to raise their mobility should also be considered.

Improving continuing vocational education and training policies

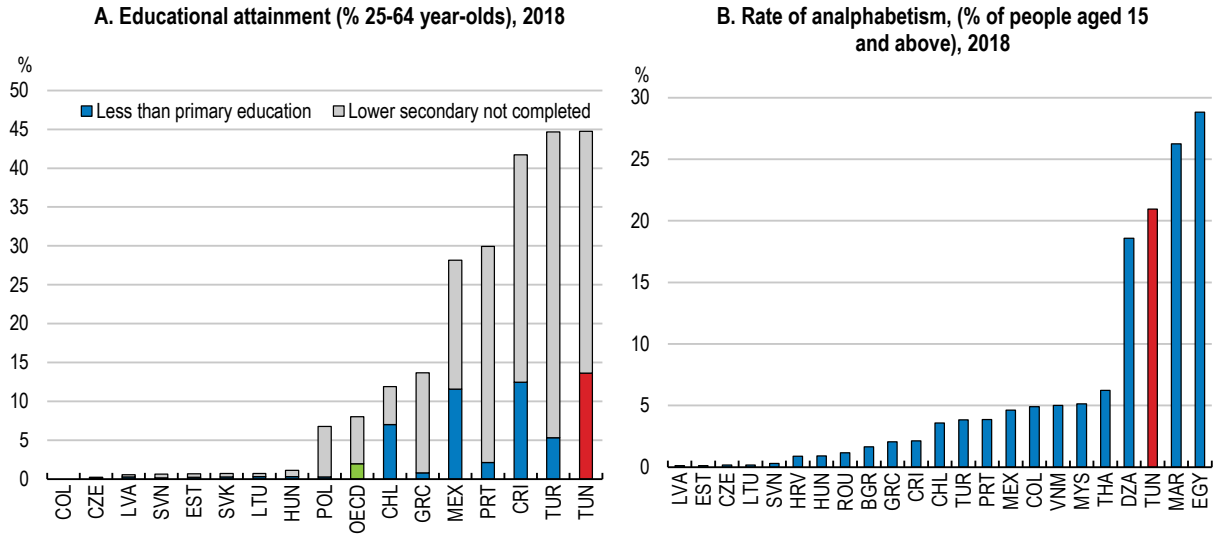
Public spending for continuing VET policies, at 0.1% of GDP, is slightly below the OECD average, and is financed through a training levy designed as a payroll tax for firms (OECD, 2015[7]). To finance their continuous VET activities, firms can recover up to 60% of their training levy payments through an online platform. The administrative procedures to register and approve training activities and related tax refunds have considerably improved in recent years raising incentives for training investments into workers. Since firms have been granted freedom to choose training providers, competition and supply have increased, particularly from private providers. The remaining revenues from the training levy are used to finance initial VET and support training activities of smaller firms through specific subsidies.

These tax incentives are exclusively targeted at firms, which decide about the training content and the workers to train. This ensures that training content is aligned with skill needs of firms. However, firms choose the workers with the highest marginal return from the training, but not necessarily the low-skilled workers that would need training the most to prepare for the structural changes that digitalisation and globalisation of production processes will bring about (OECD, 2019[85]; OECD, 2019[50]). In addition, informal workers, the unemployed and the inactive population are excluded from these training subsidies. Although the public employment agency is providing training linked to wage subsidies for registered unemployed workers, in case they find a new employer, only about 17% of all the unemployed are

registered and it takes on average around 26 months for them to find a new employer to benefit from training subsidies (Boughzala, 2019[1]).

The social and economic benefits of expanding continuous VET and adult learning policies to make more space for low-skilled and informal workers could be substantial. The share of adults that has not finished primary education is larger than in OECD countries (Figure 38). Although Tunisia is doing better than some of its regional peers, more than 20% of Tunisia's adult population cannot read or write. This is not only a serious social issue, but also partly explains the low productivity in many firms. Adoption of new technologies and production processes or compliance with product quality standards, often necessary for accessing export markets, is very difficult, if a large part of the blue-collar workforce has an insufficient level of basic skills to follow continuous VET courses. Thus, establishing a system of basic education for adults, which provides the opportunity to finish lower-secondary education, is crucial to prepare the population for the increasing digitalisation and globalisation of production processes. Raising spending efficiency in other parts of the education system could free financial resources and teachers to support this endeavour, in addition to key fiscal reforms discussed in the first chapter (Figure 24).

Figure 38. The share of adults without basic skills is high



Note: Data refers to 2018 or latest year available.
Source: OECD, Education at a Glance 2021; INS, Labour force survey; and World Bank, World Development Indicators.

Training opportunities for low-skilled, unemployed, informal or inactive adults with sufficient basic skills to follow training courses need to be expanded. The capacity of the existing public training infrastructure directly serving workers is small, with only 9 000 inscriptions in 2016 (ONEQ, 2019[83]). Direct allocation of training vouchers has been a successful strategy in many countries to raise access to training for disadvantaged individuals (Box 5). The allocation could be based on administrative data, such as the register of poor households used to administer the cash transfer programme (AMEN), which would reduce registration and information costs. If combined with a transparent quality certification system for training institutions, vouchers would improve competition between training providers (OECD, 2018[89]). The vouchers could be used to select courses from a region-specific training catalogue that is closely linked to local private sector skill demands and should be combined with high-quality career counselling (Grundke et al., 2021[90]). Another option could be to allocate a certain share of places in courses requested by firms in the current training levy system to disadvantaged workers, following a successful experience in Singapore (Box 5).

Box 5. Targeting vocational training to vulnerable workers: experience from several countries

Allocating vouchers for subsidised training courses to disadvantaged individuals has been a successful strategy to enhance employability of low-skilled, older and low- income individuals in many countries (OECD, 2019[85]). An important feature of successful programmes has been to steer the use of vouchers to training content that is linked to labour market skill needs. Effective information and career guidance infrastructure have helped to increase take-up, and some countries even link the delivery of vouchers to the outcomes of career counselling.

In Korea, unemployed individuals are required to attend career counselling before they can access the Vocational Competency Development Account (OECD, 2019[91]). In Belgium, adults with tertiary qualification can only access training vouchers if career counsellors agree that training is necessary. Some countries restrict the use of vouchers to a list of pre-approved training courses. In Estonia, for instance, vouchers can only be used by individuals who enrol in training that is related to ICT skills or has been identified to develop skills that are in shortage in the labour market (OECD, 2019[85]). In Austria and Greece, vouchers are available for both the employed and the unemployed to develop digital skills while in Israel vouchers must be used to develop skills such as Real-Time, Java, or Application Development.

To reduce the administrative costs of targeting training to labour market demand, some countries have allocated vouchers directly to firms that could decide on training content and select workers for which the training would be most effective (OECD, 2019[50]). Singapore has made these vouchers conditional on the inclusion of low-skilled, informal or unemployed workers in these courses so that they could benefit from training directly mapping with firms' skill demands. However, the experience of Italy and Malaysia with their training funds shows that employers are not necessarily perfectly forward looking in their assessment of future skill demands, as a major part of the funding is used for safety and health related training and very little for training related to ICT skills (OECD, 2019[92]).

By linking the allocation of training vouchers to career counselling and job placement services, the cost effectiveness of training courses could be improved (Box 5). Access to courses could be made conditional on career counselling and an evaluation of the necessary prior-knowledge to better match trainees' skills and experience with training content (Box 5). Counselling services could provide better information on training opportunities and help to direct those interested in training to the right course. Incentivising the supply of evening, part-time or distance learning courses and providing a worker-specific subsidy linked to income or living area would facilitate the participation of disadvantaged workers living in remote areas. During the pandemic, the supply of online training courses has increased, but this needs to be combined with better Internet access, particularly for disadvantaged individuals.

Social or development impact bonds could be one option to finance training provision to disadvantaged individuals (OECD, 2020[24]; CGD, 2021[93]). In this type of public-private partnership arrangements, providers would get significant autonomy in designing training courses and content, but their remuneration would be made contingent on specific outcome targets, such as the future employment rate of training participants. The success of such arrangements depends on how contracts are designed (OECD, 2016[94]). In particular, the definition and measurement of social outcomes and the selection of target and control groups to evaluate whether objectives have been met are complex tasks that entail significant transaction costs and risks for the public sector. So far, the empirical evidence on the effectiveness of social impact bonds has been mixed and governments should be careful in providing specific social services completely through these types of arrangements (OECD, 2016[94]). However, as a complement to traditional forms of public social service provision, social impact bonds have the potential to nurture a culture of monitoring and evaluation in social service delivery, which is currently missing in Tunisia.

Similar to the initial VET and the tertiary education system, the public training institutes providing continuous VET courses operate in isolation from the private sector and labour market needs (World Bank, 2021[77]). The content of many courses is outdated and the supply is not well adapted to course demand, particularly in interior regions. Improving impact evaluation and quality control of courses through better coordination with firms and former trainees are crucial. Collecting training requests from local firms through an electronic platform could be combined with a skill anticipation assessment system focusing on skill needs in local labour markets to better guide course supply. This could build on experiences from firms in Tunisia, which have introduced such a platform to inform public and private training providers about their plant-specific training needs, monitor training needs of employees and evaluate the impact of training courses. In Brazil, the para-statal training provider SENAI has introduced a region-specific skill anticipation system in the state of São Paulo, which is combined with a comprehensive impact evaluation and content update of training courses that follow international best practices (OECD, 2018[89]; Grundke et al., 2021[90]).

As administrative procedures to approve subsidies for training courses have been improved and firms can freely choose providers, the supply of private training providers has strongly increased (World Bank, 2021[77]). So far, neither a comprehensive registry nor an evaluation of private providers for continuous VET exist, which increases information costs for firms and workers searching for training. A comprehensive evaluation of existing training providers and programmes combined with a credible certification system would reduce asymmetric information and set the right incentives for training providers to improve the quality of their programmes. This would also increase training incentives for workers (Angel-Urdinola, Nucifora and Robalino, 2015[5]).

Improving management and organisational skills in small and medium sized firms can be very effective to increase human capital investments and on the job training for workers (Angel-Urdinola, Nucifora and Robalino, 2015[5]; Bloom and Reenen, 2010[95]). It also has potential to significantly raise the productivity of firms in Tunisia and contribute to the reduction of informality. Many small and medium size firms in Tunisia suffer from weak management practices and underinvestment in human capital of their staff (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Since 2013, the share of firms providing formal training has significantly decreased (Figure 14). Firm-level analysis conducted for this report finds that in Tunisia the provision of formal training programmes for workers is associated with a 3.1% higher total factor productivity (Figure 16, see Annex A.2). Subsidising targeted training for managers of small firms can be a suitable policy tool to improve human resource management and prepare low-productivity firms for rising domestic and international competition (Dutz, 2018[96]).

Improving labour market policies and the matching of labour demand and supply

Enhancing the effectiveness of active labour market policies

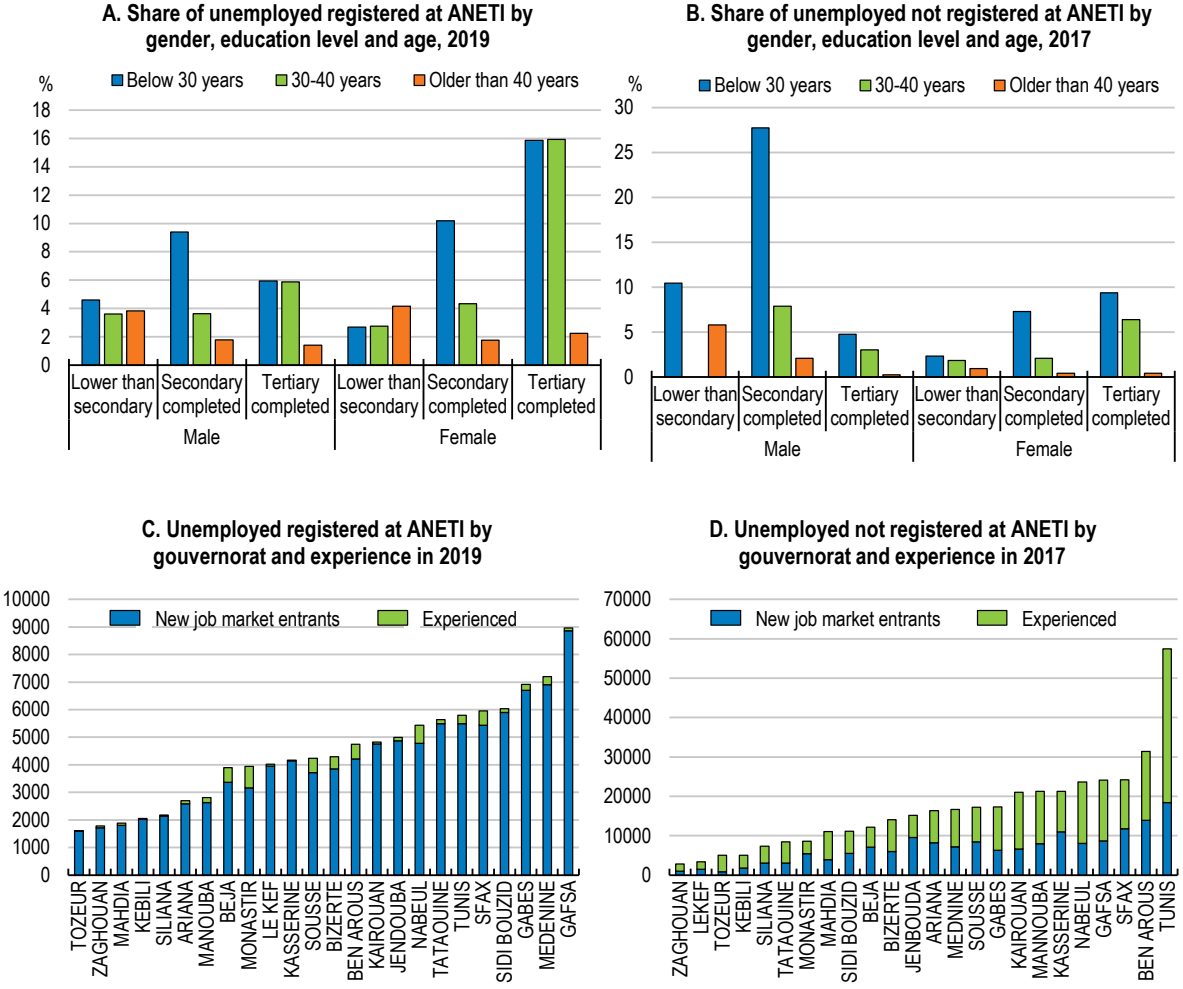
Although spending for active labour market policies, at 0.9% of GDP in 2017, is significantly above the OECD average of 0.5% of GDP, the design and implementation of these policies is weak due to a lack of coordination and impact evaluation (World Bank, 2021[77]). The governance structure is highly fragmented with several ministries, agencies and a public bank responsible for different types of programs, and a comprehensive review of all programmes and their impacts does not exist.

The public employment agency (ANETI) manages wage and training subsidies for the unemployed, job placement services as well as some programs to promote entrepreneurship and self-employment, with total spending of about 0.5% of GDP (World Bank, 2021[77]). Public works programmes, including construction works, but also a broad range of community services such as cleaning of public spaces, are managed by the Ministry of Regional Development, local communities as well as state-owned enterprises (SOEs) with an estimated cost of about 0.2% of GDP. The promotion of entrepreneurship and distribution of micro-credits is mainly managed by a public bank with a budget of around 0.2% of GDP, but programmes

targeting women in remote areas or youth are administered by other ministries. Moreover, the 2016 investment law has introduced additional wage and training subsidies that are independent from the ANETI programmes and administered by the investment agency and the Ministry of Industry. Consolidation of programmes and better coordination would allow for consistent monitoring and impact evaluation and improve resource allocation, effectiveness and spending efficiency of active labour market programmes.

Only around 17% of all unemployed individuals are registered at the public employment agency ANETI, and most of them are young tertiary graduates that have never worked before (Figure 39). Many unemployed are not registered, particularly young men without a tertiary degree and the unemployed with work experience, since the main incentive to register at ANETI is to receive wage and training subsidies (World Bank, 2021[77]). These are mainly focused on unemployed tertiary graduates to provide them with a first professional experience and facilitate their transition to the formal labour market (World Bank, 2021[77]; Angel-Urdinola, Nucifora and Robalino, 2015[5]). To be eligible for these subsidies, unemployed persons need to register and regularly visit the offices of the public employment agency ANETI.

Figure 39. Wage subsidies and employment services mainly target young tertiary graduates without job experience



Note: Data for the unemployed registered at ANETI comes from the public employment agency ANETI, which collects information on the socio-economic background of registered unemployed persons. Data for the unemployed not registered at ANETI comes from the micro data of the labour force survey, which is only available up to 2017. The statistics are based on individual answers to the question whether the unemployed are registered at ANETI or not.
Source: ANETI, Indicateurs DEFM; and INS, Labour force survey.

The fact that so many unemployed workers do not register at ANETI indicates that public job placement services are not working well (Figure 39) (World Bank, 2021[77]). The large majority of the unemployed is searching for a job through their personal network and the family or by randomly sending out applications or passing by employers close to their community (IACE, 2019[12]). This leads to many inefficient job matches and contributes to low productivity of firms. Moreover, it generates high frustration among qualified job seekers, who do not find jobs due to a lack of the right personal contacts (IACE, 2019[12]; OECD, 2015[7]).

Improving job placement services is crucial to reduce structural unemployment and raise productivity through better job matches. Job placement services of ANETI suffer from significant understaffing and high administrative burden, with many job counsellors lacking the necessary skills and spending most of their time on administering wage and training subsidy contracts (World Bank, 2021[77]; OECD, 2015[7]). Moreover, the IT system fails to properly match skill requirements of vacancies with competences and abilities of job seekers, because detailed evaluations of occupational skill requirements and the quality and content of education certificates are missing (World Bank, 2021[77]). Improving coordination and data exchange across ministries and agencies is key to build the necessary statistical infrastructure to monitor labour market trends and better inform stakeholders, such as firms, students, and workers as well as education and training institutes, about skill supply and skill needs in the labour market. This requires the introduction of a unique individual identifier which would allow to connect different databases and monitor and evaluate the effects of active labour market policies and education and training programmes on individual labour market outcomes.

To improve public job placement services, resources should be increased and reallocated from costly and ineffective wage subsidy programmes to employment services and the provision of training and adult education, expanding services to unemployed with work-experience and low-skilled labour market entrants. Job counsellors should have full access to individual training records and employment histories to better match job seekers with skill demands of firms and tailor training supply to individual needs (Box 5). This also requires better training and incentives for job counsellors, whose performance should be measured by longer-term labour market outcomes of clients, and the reallocation of administrative tasks to office clerks (OECD, 2015[7]). Improving and expanding the certification system for work competences and prior-learning, in particular for informal workers, would help raising employability of low-skilled workers and encourage training investments (Dutz, 2018[96]). Moreover, sharing databases and engaging private providers in job placement and counselling services with performance-based remuneration could complement improvements at ANETI (OECD, 2020[24]). Allowing for more competition through the entry of private providers could also improve labour market matching, as currently private job placement services are forbidden and only selected firms are allowed to operate through discretionary authorisations (World Bank, 2021[77]; OECD, 2015[7]).

Wage and training subsidies have not been very effective in raising employability of the unemployed, as the selection of candidates is not based on their individual needs and conditionality of contracts has not been monitored and enforced well (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Although most contracts require firms to provide training or keep subsidised workers for a certain period, the information for monitoring and enforcing these conditions is not available. IT systems collecting this information do not exist and capacity constraints hinder job counsellors to follow up with labour market entrants and firms (OECD, 2015[7]). In addition, administrative burden to recover costs for firm specific training is high, which prevents many firms from providing training to young labour market entrants. Insertion rates of participants in most programmes are low, and a high share of contracts is terminated ahead of schedule (World Bank, 2021[77]). The number of wage and training subsidy programmes has been reduced since 2019, and more programmes now allow participation of low-skilled labour market entrants, which is an important step to improve their chances to enter the formal labour market. However, workers that got unemployed later in life are still not eligible for many of these activation policies, and selection of candidates remains

independent of the length of the unemployment spell. Moreover, a comprehensive and continuous monitoring and impact evaluation of existing programs is still missing.

The low effectiveness of wage subsidies is also related to low training incentives for firms, who use wage subsidies to lower unit labour costs, do not provide training and often fire workers when subsidy payments end (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Most vacancies posted at ANETI are from firms in low-productivity activities which offer low-paid and low-skill intensive blue-collar jobs, which are not attractive enough for many tertiary graduates registered at ANETI (Figure 32) (Boughzala, 2019[1]). Most vacancies for high-skill white collar jobs are not posted at ANETI, but in social media, university networks or the few online job placement services that were allowed to enter the market (Boughzala, 2019[1]). To raise the effectiveness of wage subsidy programmes, the matching of worker profiles with skill requirements and task-content of subsidised vacancies needs to improve. This also requires more engagement with the private sector to convince firms to post more vacancies for skill-intensive white-collar jobs at ANETI, or at least inform ANETI about the nature of their vacancies and skill needs to allow for better counselling job seekers (OECD, 2015[7]).

High reservation wages contribute to explain why more than three out of four tertiary graduates registered at ANETI have been unemployed for longer than 24 months, although 45% of posted vacancies could not be filled (Figure 20). High reservation wages are due to negative cultural connotations of blue-collar work and the high attractiveness of public sector employment (World Bank, 2021[77]). Wages in the public sector and state-owned enterprises (SOEs) are more than 35% higher than in the private sector, complemented by generous social security benefits (OECD, 2018[9]). Recruitment in some parts of the public administration and SOE's has given priority to unemployed tertiary graduates registered at ANETI as labour market entrants, mainly due to pressure from the union of unemployed tertiary graduates (OECD, 2015[8]; Marzouk, 2020[97]; Marzouk, 2021[98]). This has led to a phenomenon of queuing, whereby many tertiary graduates particularly from humanities, law and economics register as unemployed to wait for a public sector job, and receive support from their family or work in the informal sector (Angel-Urdinola, Nucifora and Robalino, 2015[5]; Boughzala, 2019[1]). This phenomenon is particularly pronounced in southern provinces home to large SOEs, where unemployment, ANETI registrations and informality are high, but at the same time daily wages for simple private sector jobs are more than double the wages in provinces with very low unemployment rates, such as Monastir (Figure 39) (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Moreover, being registered at ANETI is often an administrative requirement for unemployed tertiary graduates to receive a visa for labour migration (Boughzala, 2019[1]).

It is key to change the cultural mind-set that underlies the phenomenon of queuing for public sector employment towards a culture of entrepreneurship. This requires reducing the gap between public and private sector wages, clear signals that being an unemployed labour market entrant is not a valid criterion for public recruitment and that public hiring will have to significantly slow down over the next years due to low fiscal space (OECD, 2015[8]; Marzouk, 2020[97]; Marzouk, 2021[98]). Public recruitment processes should be open to all applicants including experienced workers from the private sector, which is currently hindered by strict maximum age limits of 35 and 40 years depending on the position, and recruitment should be exclusively based on performance in standardised tests and interviews.

Moreover, a culture of entrepreneurship needs to be developed, which requires a reform of basic education to improve teaching quality and emphasise entrepreneurial and soft skills in learning standards and curricula. However, above all, significant improvements in the business environment are necessary to facilitate the market entry of young start-ups and allow the development of innovative products and services (see above). Programs for the unemployed to stimulate entrepreneurship and provide access to credit can support this process, but should be better targeted to improve spending efficiency (World Bank, 2021[77]). Succeeding as an entrepreneur requires implicit knowledge and experience about markets and production processes, which many unemployed labour market entrants do not have (World Bank, 2020[14]; Morsy, Bassem and Selim, 2018[22]; Boughzala, 2019[1]).

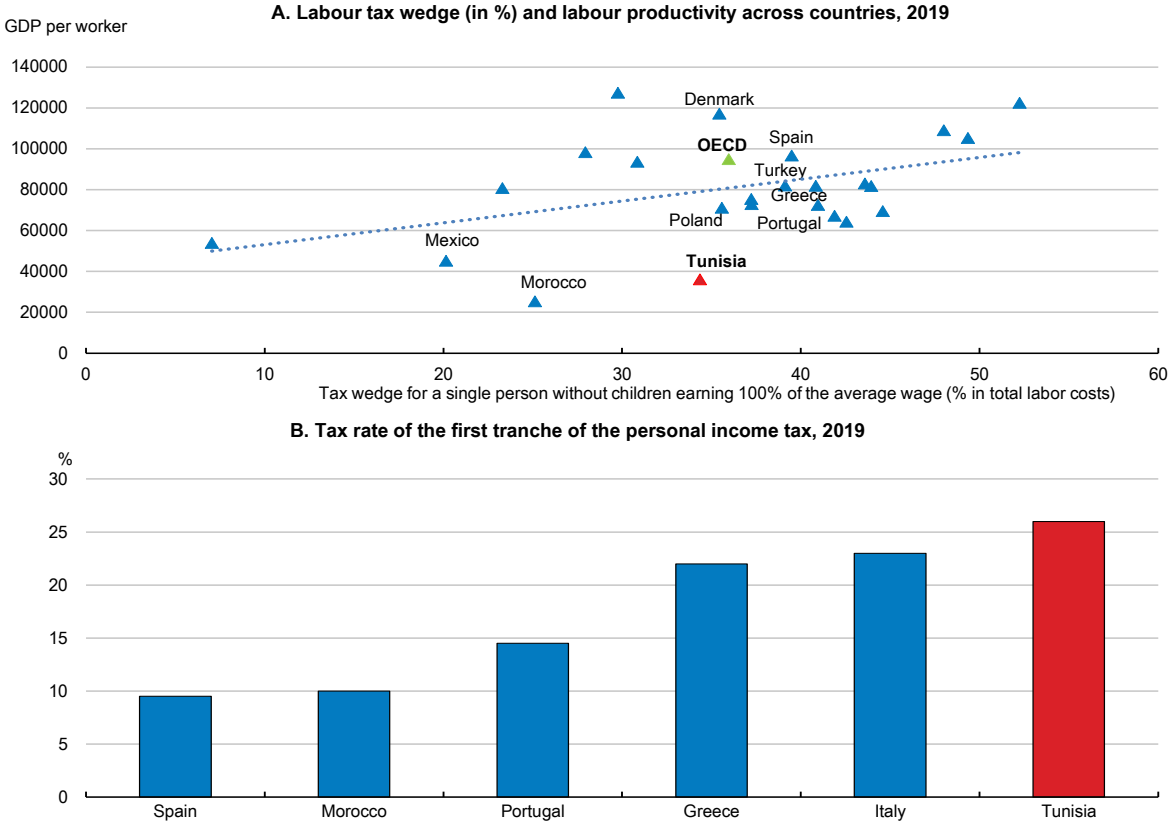
The lack of comprehensive unemployment insurance and assistance programmes hinders regional mobility and partly explains the large heterogeneity of unemployment rates across provinces (Angel-Urdinola, Nucifora and Robalino, 2015[5]). For many unemployed youth, and especially women, the family is the only support for housing and food, which strongly reduces their geographic action space for searching a job. Moreover, many wage subsidy programs have effectively functioned as implicit passive labour market support in the past, as monitoring and enforcement of activation and training components were weak and many unemployed just subscribed to receive a monthly transfer (ILO, 2019[99]; World Bank, 2021[77]). The same is true for public work schemes, which comprise very low-skill intensive activities often missing any activation component. As these programs are place-based, they impede the registered unemployed to move to other regions for finding a job. Reallocating resources from these ineffective activation policies to create a general income support scheme for the unemployed, which is conditional on job-search efforts and acceptance of job offers, would help increasing regional labour mobility (OECD, 2011[100]; ILO, 2019[99]; OECD, 2015[8]). However, this needs to be accompanied by more effective job placement and counselling services that operate nation-wide and provide mobility support and housing subsidies to facilitate reallocation (OECD, 2005[101]). Improving transport infrastructure and access to affordable housing are also crucial to improve regional labour mobility (OECD, 2018[9]).

Adjusting labour taxation and regulations to raise formal job creation and productivity

The labour tax wedge is slightly below the average of OECD countries, but relatively high when compared to low labour productivity in Tunisia (Figure 40). Particularly for low-skilled workers, a relatively steep income tax schedule reduces incentives for formalisation (Figure 40) (OECD, forthcoming[102]). Lowering the tax rate for the first income bracket and raising the allowable deduction would raise incentives for formal job creation and formalisation and could be financed by better tax enforcement (Rocha, Ulyssea and Rachter, 2018[103]; OECD, forthcoming[102]).

Social security contribution rates are similar to peers, but comprise additional payroll taxes that could be shifted to general tax revenues to extend the existing unemployment assistance scheme (OECD, forthcoming[102]). Social security contributions include contributions to the health and pension system, family allowances, housing allowances, a training tax as well as contributions to a rudimentary unemployment assistance programme. Unemployment assistance is financed by a 0.9% tax on wages, but only 6% of dismissed formal workers receive such benefits (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Extending the coverage of the existing unemployment assistance scheme would not only raise labour mobility, but would also make formal employment more attractive. This could be financed by marginal increases in the contribution rates, in combination with shifting the financing of family allowances and housing to general tax revenues, enhancing tax enforcement and reducing regressive deductions for personal income and capital gains taxes as well as VAT (IMF, 2021[104]; OECD, forthcoming[102]; ILO, 2019[99]). Raising spending efficiency in the health system and better linking pension benefits to contributions would help to prevent future rises in contribution rates (OECD, 2018[9]).

Figure 40. A relatively high labour tax wedge for low-skilled workers reduces incentives for formalisation



Note: Panel A, GDP per worker is gross domestic product (GDP), expressed in constant 2017 international dollars (purchasing power parity), divided by total workers, which includes people of working age who have been in employment recently and those who work part-time (ILO 2020). The tax wedge includes personal income taxes, employee and employer contributions, and other labour taxes from which social benefits are deducted. In Panel B, data for Morocco is for 2017.
Source: (OECD, forthcoming[102]) based on OECD (2020), Tax on payroll database; and ILO (2020): Output per worker.

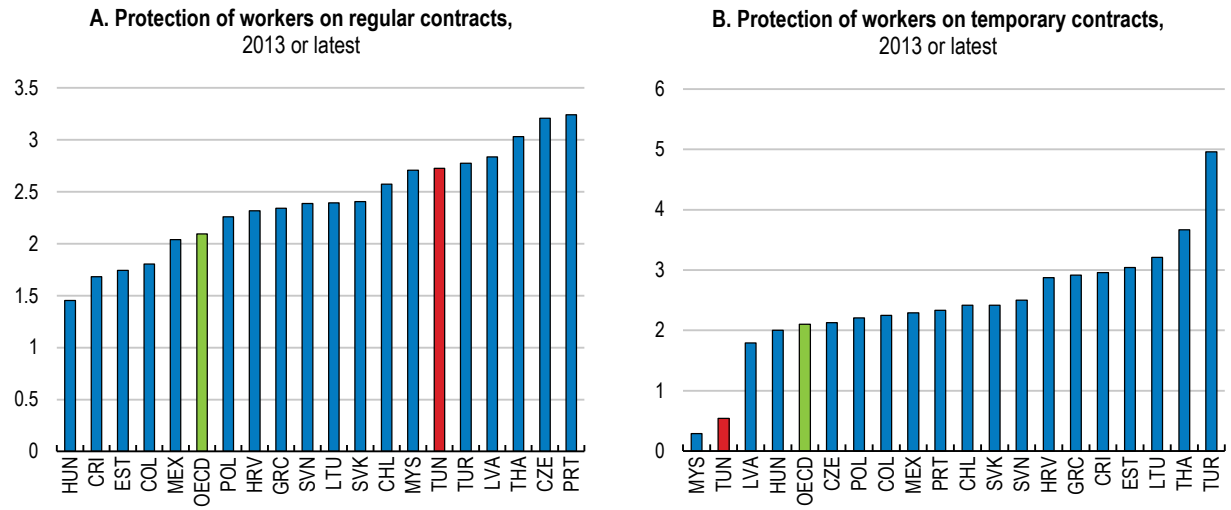
The high fragmentation of the social security system reduces labour mobility across sectors and firms as well as out of unemployment. Separate regimes exist by sector and employment status, e.g. for civil servants, agricultural workers, professional services, non-salaried workers, and low-wage workers, among others, with very different rules and contribution rates. Portability arrangements between the different regimes do not exist, which significantly reduces incentives to change jobs (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Many well-paid services professions such as architects, lawyers and other professional services are included in the regime for non-salaried workers and face very low contribution rates. Introducing a universal system with progressive contribution rates could improve labour mobility and raise social security revenues, while providing incentives for low-wage workers to join the formal sector.

Collective wage bargaining agreements, which establish wage floors by occupation, educational attainment and seniority of workers in around 70 sectors, hinder formal job creation and reduce incentives for productivity improvements. The complex wage floors are fixed at the national-level, although the cost of living can be much lower in remote regions. Larger firms dominate these wage negotiations, which leads to wage floors that many smaller and less productive competitors cannot afford, raising informality and reducing competition (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Entry wages for tertiary graduates are around 40% above the sector-specific minimum wage, and often above average wages, which reduces demand for tertiary graduates without work experience, as their average productivity is still low. Moreover, for many smaller firms the complex collective wage schedule becomes binding, as they cannot afford to top up wages above negotiated wage floors. This prevents them from rewarding employees who are more

productive compared to peers with the same occupation, seniority and education level. It also reduces incentives for workers to take training courses that do not lead to a formal education degree recognised in the collective wage schedule. Allowing for more flexibility in wage setting for smaller firms and adapting collective wage agreements to economic conditions is crucial to raise formal job creation and incentives for productivity improvements.

Large differences in employment protection between permanent and temporary contracts raise worker turnover and create a dual labour market (Figure 41) (OECD, 2015[8]). Firms are reluctant to hire on permanent contracts as dismissals for economic reasons are forbidden and even dismissals due redundancy or misconduct are complicated and involve high litigation costs (Angel-Urdinola, Nucifora and Robalino, 2015[5]). In contrast, temporary contracts, which can be extended up to four years, entail almost no firing costs for employers, who can dismiss workers without any notice or compensation. This regulatory discrepancy strongly increases worker turnover, as many firms hire workers on temporary contracts and fire them after four years (Figure 42) (Stampini and Verdier-Chouchane, 2011[105]). Although legal provisions exist to incentivise permanent contracts by preventing firms to re-fill the position of a fired temporary worker after four years, enforcement is very weak due to missing labour inspections. More than 55% of young workers are employed on temporary contracts, which are in many cases even oral contracts (Boughzala, 2019[1]). Temporary contracts do not entail any social security benefits and wages are on average 25% lower than in permanent contracts, controlling for education, gender, sector and experience of workers (Angel-Urdinola, Nucifora and Robalino, 2015[5]). Transition rates from temporary to permanent contracts are low.

Figure 41. Employment protection is high for formal workers, but not on temporary contracts



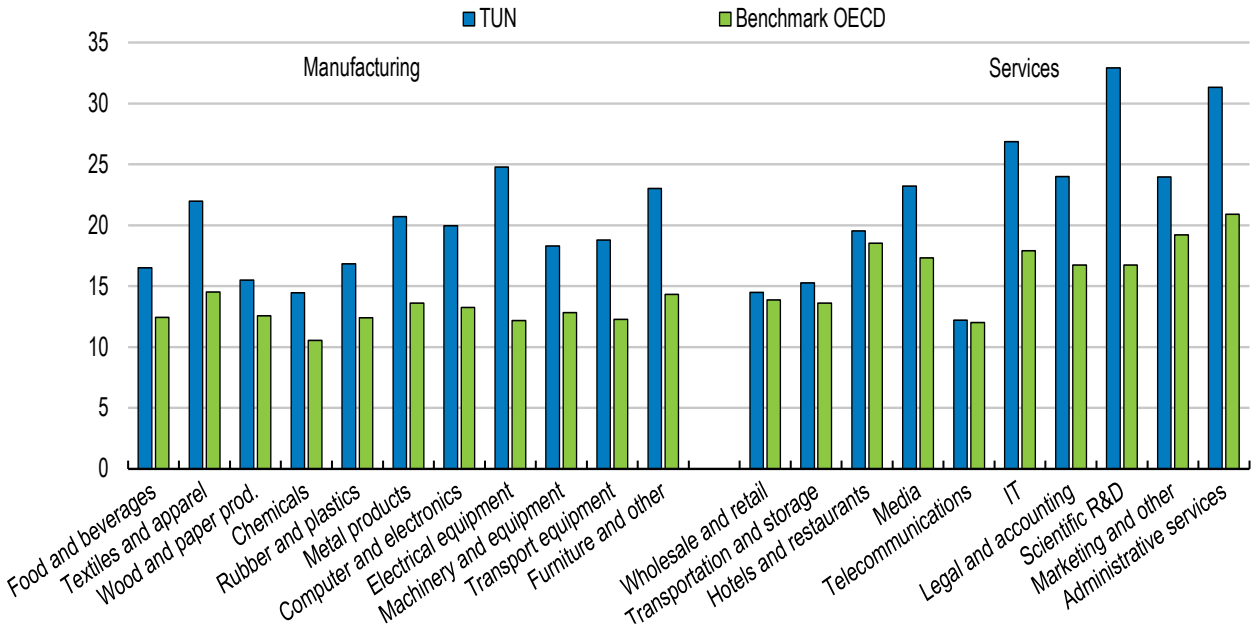
Note: The index ranges from 0 (low regulation protection) to 6 (high regulation protection).
Source: OECD Employment protection database.

High turnover among workers with temporary contracts reduces training incentives and contributes to low productivity (Figure 42). The return on investments in firm-specific human capital is low for workers, and firms have no incentives to provide general training as they cannot appropriate the returns (OECD, 2015[8]). In addition, high firing costs for permanent workers can also reduce incentives for productivity improvements and the realisation of more productive worker-firm matches. Thus, the large gap in employment protection between permanent and temporary contracts should be reduced to lower worker turnover and increase incentives for training and productivity improvements. Permanent contracts should allow for dismissals due to economic or technological reasons, while reinforcing controls and penalties for

wrongful dismissal. Providing clear legal definitions for wrongful dismissals is crucial to reduce the scope for ambiguity and related litigation costs, as for example recent reforms of the labour code in Italy and France have shown (Silva, Almeida and Strokova, 2015[106]; OECD, 2020[24]; Bellan, 2018[107]). Notice periods and compensations for dismissals on temporary contracts should be introduced, and social security benefits should be aligned to permanent contracts. Moreover, these changes in employment protection legislation need to be accompanied with a comprehensive income support for the unemployed irrespective of whether they are dismissed from a permanent or a temporary contract (ILO, 2019[99]).

Figure 42. Job turn-over is high in many sectors

Job reallocation rate (in %) for Tunisia and OECD countries



Note: Data for Tunisia refers to an average across years for 2007-2018, and data for OECD benchmark countries refers to an average from 2007 until 2015. Benchmark OECD countries include Austria, Belgium, Canada, Spain, Finland, France, Hungary, Italy, Japan, Latvia, Netherlands, Norway, New Zealand, Portugal, Sweden, and Turkey.
Source: OECD DynEmp database (https://www.oecd.org/sti/dynemp.htm).

MAIN FINDINGS	RECOMMENDATIONS
Promote the creation of more and better jobs	
In the onshore sector, authorisation regimes for entering a new market or offering a new product or service are numerous and involve opaque and lengthy procedures, discouraging entrepreneurship and investment .	**Reduce prior authorisation for market entry and investment, while maintaining transparent ex-post controls to ensure regulatory compliance. Apply silence-is-consent rules and introduce one-stop shops whenever possible.**
Overly complex tax incentive and subsidy regimes increase administrative burden, particularly for small firms, and hinder market entry and formalisation.	**Conduct a comprehensive review and impact evaluation of existing subsidies and tax incentives and simplify the tax system.**
A high income tax rate for low-skilled workers reduces incentives for formal job creation and formalisation of informal workers.	Reduce the income tax rate for the first income bracket and raise the allowable deduction, complemented by raising tax enforcement.
Collective wage bargaining agreements at the sectoral level establish complex wage floors by occupation, educational attainment and seniority of workers in around 70 sectors. Insofar as negotiations are dominated by large firms, wage floors are set at levels that are high compared to productivity levels at many smaller firms. This raises informality, hinders smaller firms to introduce performance-based remuneration and lowers training incentives of workers.	Grant SMEs more flexibility in wage setting and adapt collective wage agreements to economic conditions, including sector-specific ones.
Large differences in employment protection between permanent and temporary contracts raise worker turnover and reduce training incentives, contributing to low productivity.	Raise employment protection and social security benefits for temporary contracts and reinforce labour inspections, while allowing for dismissals due to economic reasons for permanent contracts.
Improve educational and vocational training outcomes for all	
Access to early-childhood education and childcare is low, particularly for low-income households and in interior regions, which hinders skills development and reduces labour market participation of women.	**Raise spending efficiency in other parts of the education system to finance the expansion of early-childhood education, prioritising access for low-income and single-parent families.**
Many newly-employed teachers lack a formal pedagogical education. The quality of initial and continuous teacher training is low due to a lack of teacher instructors and outdated curricula.	**Improve selection as well as initial and continuous teacher training in basic education and VET, with a special focus on pedagogical skills.**
The system of teacher evaluation and wage bonuses does not set the right incentives to improve teaching quality.	Link teacher evaluation and existing bonus systems to student improvements at yearly nation-wide exams and raise incentives for teachers to participate in additional training.
Changing the instruction language from lower to upper secondary education leads to a strong drop in performance, particularly for poor children.	Reduce barriers to advancement from primary to secondary education, in particular by providing high-quality teaching of languages from an early age, especially for children from low-income households.
Learning standards, curricula and related teaching methods for primary and secondary education are outdated, biased towards academic content and lack a focus on soft- and entrepreneurial skills.	Combine modern and less-academic learning standards and curricula with new teaching methods to foster group-work and self-initiative and improve soft and entrepreneurial skills of students.
Strong wage increases and additional hiring have put pressure on the education budget and reduced investment into a decaying school infrastructure, contributing to high dropout rates, particularly in rural areas.	Raise spending efficiency in the public education system to free resources for improving physical and ICT infrastructure in schools and vocational training institutes.
The share of adults that has not finished primary or lower secondary education and has difficulties to read or write is large.	Introduce basic education for adults providing the opportunity to finish lower-secondary education.
Many curricula of initial vocational education and training (VET) and tertiary education programmes are outdated and not adapted to the skill needs in the labour market.	Establish comprehensive impact evaluation and quality certification of VET and tertiary education programmes and better align curricula to labour market needs.
Secondary students do not receive sufficient information about labour market trends, skill needs of firms and the content and quality of VET and higher education programmes, which distorts their education decision.	Better inform secondary students and adults of employment and wage prospects for each of the higher education and VET paths.
The initial VET system and universities do not internalise skill needs in local labour markets due to a missing culture of impact evaluation and stakeholder involvement.	Improve cooperation between firms, VET institutes and universities, including at the regional level.
Age limits for apprenticeships prevent students that have dropped out from secondary education and low-skilled adults to re-enter parts of the initial VET system and upgrade their basic and technical skills.	Extend age limits for all initial VET programmes.
Although many initial VET programmes include workplace training, coordination between teachers and supervisors in firms is insufficient due to a weak legal framework and insufficient pedagogical training and	Better link formal VET and university curricula with workplace training by improving the legal framework and encourage a more active participation of firms, for example through information campaigns and stimulating intra-sectoral coordination on skills development among firms.

engagement of supervisors in firms. Very few university programmes include workplace training.	
Training subsidies do not target individuals most in need and impact evaluation of existing training subsidies to the registered unemployed does not exist.	Introduce training vouchers for low–skilled, unemployed and informal workers, linking subsidies for training providers to employment outcomes.
Recognition of non-formal and formal prior learning is weak, which creates barriers to enter initial and continuing VET and to find employment, particularly for informal workers.	Reinforce and operationalise the system for recognition and certification of prior learning and adapt course requirements in initial VET to individual needs.
Improve labour market policies and raise labour mobility	
Although spending on active labour market programmes is relatively high, their governance is highly fragmented, targeting is weak and results are modest.	**Centralise the governance of active labour market programmes, including public works and entrepreneurship support, increase spending efficiency by better targeting towards individuals most in need and improve impact evaluation.**
Job placement services of the ANETI suffer from significant understaffing and high administrative burden of job counsellors. Coordination among regional employment agencies is weak.	Improve public employment services by allocating more resources to personal counselling services, reducing administrative burden, strengthening training of counsellors, combining counselling with training support and increase inter-regional coordination.
Matching of skill requirements of vacancies with skills of job seekers is weak, because detailed evaluations of occupational skill requirements and of the quality and content of education and training activities are missing.	Introduce the individual identifier to foster data exchange across ministries and improve the IT system to evaluate labour market outcomes of training and education programmes and better match skill requirements of vacancies with abilities of job seekers.
More than 80% of the unemployed are not registered at the public employment agency, due to severe capacity constraints, and mainly use personal contacts for searching a job. However, private job placement services face legal difficulties to operate.	**Allow for more competition from private employment service providers and consider outsourcing certain tasks to private providers using performance-based incentive contracts.**
The social security system is highly fragmented and portability arrangements do not exist across regimes. This reduces labour mobility across sectors and firms.	Consolidate the fragmented social security system and introduce a universal system with progressive contribution rates.
The lack of unemployment assistance leads many unemployed, and particularly women, to rely on the family or place-based wage subsidy and public works programmes, which reduces labour mobility.	Extend the coverage of the existing unemployment assistance scheme and reinforce incentives for job search and training.
Many tertiary graduates are unemployed while they wait for public sector jobs due to attractive wages and social security benefits and hiring criteria that favour long-term unemployed and discriminate against experienced private sector workers.	Reduce incentives for labour market entrants to wait for public sector jobs by opening public recruitment processes to all applicants including experienced workers from the private sector and base recruitment exclusively on standardised performance tests. Redesign wage schedules in the public sector and SOEs to narrow the gap with the private sector.

References

Amiti, M. and A. Khandelwal (2013), "Import Competition and Quality Upgrading", *The Review of Economics and Statistics*, Vol. 95/2, pp. 476-490, https://www.mitpressjournals.org/doi/pdf/10.1162/REST_a_00271 (accessed on 22 September 2018). [34]

Amiti, M. and J. Konings (2007), "Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia", *American Economic Review*, Vol. 97/5, pp. 1611-1638, https://doi.org/10.1257/aer.97.5.1611. [33]

Andrews, D., C. Criscuolo and P. Gal (2015), "Frontier firms, technology diffusion and public policy: Micro evidence from OECD countries". [52]

Angel-Urdinola, D., A. Nucifora and D. Robalino (2015), *Labor Policy to Promote Good Jobs in Tunisia: Revisiting Labor Regulation, Social Security, and Active Labor Market Programs*, The World Bank, https://doi.org/10.1596/978-1-4648-0271-3. [5]

Angrist, J. and V. Lavy (1997), "The Effect of a Change in Language of Instruction on the Returns to Schooling in Morocco", *Journal of Labor Economics*, Vol. 15/1, pp. 48-76. [67]

Araújo, B. and L. Paz (2014), "The effects of exporting on wages: An evaluation using the 1999 Brazilian exchange rate devaluation", *Journal of Development Economics*, Vol. 111, pp. 1-16, https://doi.org/10.1016/j.jdeveco.2014.07.005. [45]

Arfa, A. et al. (2018), *La réforme de la formation professionnelle en quête d'une concrétisation*, Institut Tunisien de la Compétitivité et des Études Quantitatives (ITCEQ), Tunis, http://www.itceq.tn/files/emploi/reforme-de-la-formation-professionnelle.pdf (accessed on 27 June 2021). [80]

Arnold, J. et al. (2015), "Services Reform and Manufacturing Performance: Evidence from India", *The Economic Journal*, Vol. 126/590, pp. 1-39, https://doi.org/10.1111/ecoj.12206. [38]

Ayadi, L. et al. (2013), *Estimating Informal Trade across Tunisia's Land Borderss*, World Bank, Washington DC, http://econ.worldbank.org. (accessed on 18 June 2021). [19]

Bechichi, N. et al. (2018), "MOVING BETWEEN JOBS AN ANALYSIS OF OCCUPATION DISTANCES AND SKILL NEEDS"*, OECD SCIENCE, TECHNOLOGY AND INNOVATION POLICY PAPERS*, No. 52, OECD, Paris, http://www.oecd.org/going-digital (accessed on 27 September 2018). [51]

Bechichi, N. et al. (2019), "Occupational mobility, skills and training needs", http://www.oecd.org/going-digital. (accessed on 26 January 2020). [53]

Bellan, M. (2018), "Pourquoi les recours aux prud'hommes chutent", *Les Echos*, https://www.lesechos.fr/economie-france/social/pourquoi-les-recours-aux-prudhommes-chutent-138568. [107]

Benstead, L. (2021), "6. The Impact of Poverty and Corruption on Educational Quality in Tunisia", in *The Political Economy of Education in the Arab World*, Lynne Rienner Publishers, https://doi.org/10.1515/9781626379442-008. [66]

Bernard, A. et al. (2007), "Firms in International Trade", *Journal of Economic Perspectives*, Vol. 21/3, pp. 105-130, https://doi.org/10.1257/jep.21.3.105. [113]

Blalock, G. and F. Veloso (2007), "Imports, Productivity Growth, and Supply Chain Learning", *World Development*, Vol. 35/7, pp. 1134–1151, https://doi.org/10.1016/j.worlddev.2006.10.009. [40]

Bloom, N., M. Draca and J. Van Reenen (2016), "Trade induced technical change? The impact of chinese imports on innovation, IT and productivity", *Review of Economic Studies*, Vol. 83/1, pp. 87-117, https://doi.org/10.1093/restud/rdv039. [26]

Bloom, N. and J. Reenen (2010), "Why do management practices differ across firms and countries?", *Journal of Economic Perspectives*, Vol. 24/1, pp. 203-224, https://doi.org/10.1257/jep.24.1.203. [95]

Bosch, M. and R. Campos-Vazquez (2014), "The Trade-Offs of Welfare Policies in Labor Markets with Informal Jobs: The Case of the "Seguro Popular" Program in Mexico", *American Economic Journal: Economic Policy*, Vol. 6/4, pp. 71-99, https://doi.org/10.1257/pol.6.4.71. [111]

Bouchoucha, I. (2018), "The Migration of Women in Tunisia: Between Tradition and Modernity", in *Gender and Mobility in Africa*, Springer International Publishing, Cham, https://doi.org/10.1007/978-3-319-65783-7_3. [10]

Boughzala, M. (2019), *MARCHÉ DU TRAVAIL, DYNAMIQUE DES COMPÉTENCES ET POLITIQUES D'EMPLOI EN TUNISIE*, European Training Foundation, https://www.etf.europa.eu/sites/default/files/2019-08/labour_market_tunisia_fr.pdf (accessed on 14 June 2021). [1]

Brandt, L., J. Van Biesebroeck and Y. Zhang (2012), "Creative accounting or creative destruction? Firm-level productivity growth in Chinese manufacturing", *Journal of Development Economics*, Vol. 97/2, pp. 339-351, https://doi.org/10.1016/J.JDEVECO.2011.02.002. [46]

Broda, C. and D. Weinstein (2006), "Globalization and the Gains From Variety", *The Quarterly Journal of Economics*, Vol. 121/2, pp. 541-585, https://doi.org/10.1162/qjec.2006.121.2.541. [117]

Burke, M. and T. Sass (2013), "Classroom Peer Effects and Student Achievement", *Journal of Labor Economics*, Vol. 31/1, pp. 51-82, https://doi.org/10.1086/666653. [72]

Bustos, P. (2011), "Trade Liberalization, Exports, and Technology Upgrading: Evidence on the Impact of MERCOSUR on Argentinian Firms", *American Economic Review*, Vol. 101, pp. 304-340, https://doi.org/10.1257/aer.101.1.304. [112]

Cadot, O., J. Gourdon and F. van Tongeren (2018), "Estimating Ad Valorem Equivalents of Non-Tariff Measures: Combining Price-Based and Quantity-Based Approaches", *OECD Trade Policy Papers*, No. 215, OECD Publishing, Paris, https://doi.org/10.1787/f3cd5bdc-en. [48]

Cassimon, S. and R. Grundke (forthcoming), "Improving skills and employment opportunities in Tunisia", *OECD Economics Department Working Papers*. [115]

Cassimon, S., R. Grundke and P. Kowalski (forthcoming), "The opportunities associated with Tunisia's greater integration with international markets", *OECD Economics Department Working Papers*. [59]

CGD (2021), *Investing in Social Outcomes: Development Impact Bonds*, Centre for Global Development, https://www.cgdev.org/page/investing-social-outcomes-development-impact-bonds-0. [93]

CRES (2016), *Protection sociale et économie informelle en Tunisie - Défis de la transition vers l'économie formelle*, Centre des Recherches et d'Etudes Sociales, http://www.cres.tn/uploads/tx_wdbiblio/Secteur_informel_Tunisie.pdf. [18]

Criscuolo, C. et al. (2021), "The human side of productivity: Uncovering the role of skills and diversity for firm productivity", *OECD Productivity Working Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/5f391ba9-en. [56]

Criscuolo, C., P. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, Paris, https://doi.org/10.1787/5jz417hj6hg6-en. [44]

De Loecker, J. et al. (2016), "Prices, Markups, and Trade Reform", *Econometrica*, Vol. 84/2, pp. 445-510, https://doi.org/10.3982/ECTA11042. [42]

Dutz, M. (2018), *Jobs and Growth: Brazil's Productivity Agenda*, The World Bank, https://doi.org/10.1596/978-1-4648-1320-7. [96]

Eppinger, P. (2019), "Service offshoring and firm employment", *Journal of International Economics*, Vol. 117, pp. 209-228, https://doi.org/10.1016/j.jinteco.2019.01.007. [39]

Eurofound (2021), *European Reshoring Monitor*, https://reshoring.eurofound.europa.eu/. [88]

European Commission (2021), *Ex-post Evaluation of the impact of trade chapters of the Euro-Mediterranean Association Agreements with six partners: Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia*, European Commission - Directorate General for Trade, https://op.europa.eu/en/publication-detail/-/publication/fab9bddd-9106-11eb-b85c-01aa75ed71a1. [15]

European Commission (2019), *Rapport du sous-comité UE-TUNISIE "Commerce, industrie et service"et du sous-comité UE-TUNISIE "Marché interieur"*, https://trade.ec.europa.eu/doclib/docs/2019/october/tradoc_158410.pdf. [28]

Fajgelbaum, P. and A. Khandelwal (2016), "Measuring the Unequal Gains from Trade", *The Quarterly Journal of Economics*, pp. 1113-1181, https://doi.org/10.1093/qje/qjw013. [116]

Fouarge, D. et al. (2020), "Do labour market opportunities affect VET students' educational choice? Evidence from stated choice and field experiments", https://www.oecd.org/els/emp/OECD-ELS-Seminars-Fouarge.pdf. [76]

Garcia-Marin, A. and N. Voigtländer (2019), "Exporting and Plant-Level Efficiency Gains: It's in the Measure", *Journal of Political Economy*, Vol. 127/4, pp. 1777-1825, https://doi.org/10.1086/701607. [114]

Goldberg, P. et al. (2009), "Trade Liberalization and New Imported Inputs", *American Economic Review*, Vol. 99/2, pp. 494-500, https://doi.org/10.1257/aer.99.2.494. [32]

Grundke, R. et al. (2021), "Improving skills to harness the benefits of a more open economy in Brazil", *OECD Economics Department Working Papers*, No. 1661, OECD Publishing, Paris, https://doi.org/10.1787/222c1741-en. [90]

Grundke, R. et al. (2017), "Skills and global value chains: A characterisation", *OECD Science, Technology and Industry Working Papers*, No. 2017/05, https://doi.org/10.1787/cdb5de9b-en. [63]

Grundke, R. et al. (2018), "Which skills for the digital era?: Returns to skills analysis", *OECD Science, Technology and Industry Working Papers*, No. 2018/09, OECD Publishing, Paris, https://doi.org/10.1787/9a9479b5-en. [58]

Grundke, R. and C. Moser (2019), "Hidden protectionism? Evidence from non-tariff barriers to trade in the United States", *Journal of International Economics*, Vol. 117, pp. 143-157, https://doi.org/10.1016/j.jinteco.2018.12.007. [27]

Haltiwanger, J. et al. (2013), "Cross-Country Differences in Productivity: The Role of Allocation and Selection", *American Economic Review*, Vol. 103/1, pp. 305-334, https://doi.org/10.1257/aer.103.1.305. [20]

Heckman, J. et al. (2010), "The Rate of Return to the High/Scope Perry Preschool Program", *Journal of Political Economy*, Vol. 94/1-2, pp. 114-128. [71]

Heckman, J. and S. Mosso (2014), "The Economics of Human Development and Social Mobility", *Annual Review of Economcs*, Vol. 6, pp. 689-733, https://doi.org/10.1146/annurev-economics-080213-040753. [68]

Heckman, J., R. Pinto and P. Savelyev (2013), "Understanding the mechanisms through which an influential early childhood program boosted adult outcomes", *American Economic Review*, Vol. 103/6, pp. 2052-2086, https://doi.org/10.1257/aer.103.6.2052. [69]

He, Z. and M. Dai (2017), "Learning by Importing", Columbia University, http://www.columbia.edu/~zh2178/Learning%20by%20Importing.pdf (accessed on 22 September 2018). [41]

Hoekman, B. and A. Mattoo (2008), *Services Trade And Growth*, The World Bank, https://doi.org/10.1596/1813-9450-4461. [37]

Hsieh, C. and P. Klenow (2009), "Misallocation and Manufacturing TFP in China", *The Quarterly Journal of Economics*, Vol. 124/4, pp. 1403-1448, https://www.jstor.org/stable/pdf/40506263.pdf (accessed on 17 January 2019). [21]

Hummels, D. et al. (2012), "Offshoring, Transition, and Training: Evidence from Danish Matched Worker-Firm Data", *American Economic Review*, Vol. 103/2, pp. 424-428, https://doi.org/10.1257/aer.102.3.424. [54]

Hummels, D., J. Munch and C. Xiang (2018), *Offshoring and labor markets*, American Economic Association, https://doi.org/10.1257/jel.20161150. [55]

IACE (2019), *Rapport National de l'Emploi*, Institute Arabe des Chefs d'entreprise, https://iace.tn/docs/?limit=15&q=emploi&catid=0&theme=default. [12]

IBGE (2016), *Pesquisa nacional de saúde do escolar 2015*, Instituto Brasileiro de Geografia e Estadisticas. [109]

IFC and UTICA (2017), *Evaluation des écarts de compétences dans le secteur des TIC en Tunisie*, http://www.digitaltalent.tn/u_p_l_d/etudes/evaluation-des-ecarts-de-competences-dans-le-secteur-des-tic-en-tunisie_sommaire_1_025668900150488704659b2c1063eb78.pdf. [61]

ILO (2019), *Tunisie Étude de faisabilitÉ d'un fonds perte d'emploi (options et coûts)*, International Labour Organsiation, https://www.social-protection.org/gimi/gess/RessourcePDF.action;jsessionid=67Hr7bj8uHfcK1NlhZ-K1t-atlfCuIFmZN30KBmqcr0h7cxceFP9!539423187?id=56782 (accessed on 6 July 2021). [99]

ILO (2013), *L'amélioration de l'apprentissage informel en Tunisie*, International Labour Organisation, https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/presentation/wcms_218821.pdf. [84]

IMF (2021), *Tunisia : 2021 Article IV Consultation*, International Monetary Fund, https://www.imf.org/en/Publications/CR/Issues/2021/02/26/Tunisia-2020-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-50128. [104]

INS (2020), *Indicateurs sur l'emploi informel 2019*, Institute National de Statistiques Tunisie, http://ins.tn/publication/indicateurs-sur-lemploi-informel-2019. [17]

Joumard, I., S. Dhaoui and H. Morgavi (2018), "Insertion de la Tunisie dans les chaines de valeur mondiales et role des entreprises offshore"*, Documents de travail du Département des Affaires économiques de l'OCDE*, No. 1478, Éditions OCDE, Paris, https://doi.org/10.1787/546dbd75-fr. [13]

Maertens, M. and J. Swinnen (2009), "Trade, Standards, and Poverty: Evidence from Senegal", *World Development*, Vol. 37/1, pp. 161-178, https://doi.org/10.1016/j.worlddev.2008.04.006. [49]

Marzouk, H. (2021), "Enseignement supérieur : vers le recrutement de 1130 enseignants-chercheurs", *L'Economiste Maghrébin*, https://www.leconomistemaghrebin.com/2021/09/23/enseignement-superieur-recrutement-1130-docteurs/. [98]

Marzouk, H. (2020), "ARP : Initiative législative pour embaucher les anciens chômeurs", *Economiste Maghrebin*, https://www.leconomistemaghrebin.com/2020/06/18/arp-initiative-legislative-embaucher-anciens-chomeurs/. [97]

Melitz, M. (2003), *The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity*, https://www.jstor.org/stable/pdf/1555536.pdf?refreqid=excelsior%3Ae3382ca8aee44f583882d975e0cdb85e (accessed on 22 September 2018). [43]

Morsy, H., K. Bassem and R. Selim (2018), *Tunisia Diagnostic paper: Assessing Progress and Challenges in Unlocking the Private Sector's Potential and Developing a Sustainable Market Economy*, European Bank for Reconstruction and Development, https://www.ebrd.com/documents/strategy-and-policy-coordination/tunisia.pdf?blobnocache=true. [22]

OECD (2022), *OECD Economic Surveys: Tunisia 2022*, OECD Publishing, Paris, https://doi.org/10.1787/7f9459cf-en (accessed on 17 June 2022). [3]

OECD (2021), *Career Guidance for Adults in a Changing World of Work*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/9a94bfad-en. [75]

OECD (2021), *OECD Tourism Trends and Policies 2020*, OECD Publishing Paris, https://www.oecd.org/cfe/tourism/2020-Tourism-Brochure.pdf. [78]

OECD (2020), *Education at a Glance 2020: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/69096873-en. [118]

OECD (2020), "Mitigating the impact of COVID-19 on tourism and supporting recovery", *OECD Tourism Papers*, No. 2020/03, OECD Publishing, Paris, https://doi.org/10.1787/47045bae-en. [79]

OECD (2020), *OECD Economic Surveys: Brazil 2020*, OECD Publishing, Paris, https://doi.org/10.1787/250240ad-en. [24]

OECD (2019), *Financial Incentives to Promote Adult Learning in Australia*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/c79badcc-en. [91]

OECD (2019), *Getting Skills Right: Future-Ready Adult Learning Systems*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/9789264311756-en. [85]

OECD (2019), *OECD Competition Assessment Reviews: Tunisia*, OECD Publishing Paris, https://www.oecd.org/daf/competition/ca-tunisia-review-2019-en.pdf. [31]

OECD (2019), *OECD Economic Surveys: PORTUGAL*, OECD. [23]

OECD (2019), *OECD Economic Surveys: Argentina 2019*, OECD Publishing, Paris, https://doi.org/10.1787/0c7f002c-en. [29]

OECD (2019), *OECD Economic Surveys: Malaysia 2019*, OECD Publishing, Paris, https://doi.org/10.1787/eaaa4190-en. [92]

OECD (2019), *OECD Skills Outlook 2019 : Thriving in a Digital World*, OECD Publishing, Paris, https://doi.org/10.1787/df80bc12-en. [50]

OECD (2019), *PISA 2018 Results (Vol II): Where all students can succeed.*, OECD Publishing Paris, https://doi.org/10.1787/b5fd1b8f-en. [70]

OECD (2018), *Études économiques de l'OCDE : Tunisie 2018: Évaluation économique*, Éditions OCDE, Paris, https://doi.org/10.1787/eco_surveys-tun-2018-fr. [9]

OECD (2018), *Getting Skills Right: Brazil*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/9789264309838-en. [89]

OECD (2018), *OECD Economic Surveys BRAZIL*. [108]

OECD (2018), *Seven Questions about Apprenticeships: Answers from International Experience*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/9789264306486-en. [81]

OECD (2017), *OECD Skills Outlook 2017: Skills and Global Value Chains*, OECD Publishing, Paris, https://doi.org/10.1787/9789264273351-en. [119]

OECD (2016), *Getting Skills Right: Assessing and Anticipating Changing Skill Needs*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/9789264252073-en. [74]

OECD (2016), *Low-Performing Students: Why They Fall Behind and How To Help Them Succeed*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/9789264250246-en. [73]

OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/9789264266490-en. [65]

OECD (2016), *Understanding social impact bonds*, OECD, Paris, http://www.oecd.org/cfe/leed/UnderstandingSIBsLux-WorkingPaper.pdf (accessed on 19 February 2020). [94]

OECD (2015), *Investing in Youth: Tunisia: Strengthening the Employability of Youth during the Transition to a Green Economy*, Investing in Youth, OECD Publishing, Paris, https://doi.org/10.1787/9789264226470-en. [7]

OECD (2015), *Tunisia: A reform agenda to support competitiveness and inclusive growth*, OECD Publishing, Paris, https://www.oecd.org/countries/tunisia/Tunisia-a-reform-agenda-to-support-competitiveness-and-inclusive-growth.pdf (accessed on 28 June 2021). [8]

OECD (2011), *OECD Employment Outlook 2011*, OECD Publishing, Paris, https://doi.org/10.1787/empl_outlook-2011-en. [100]

OECD (2010), *Learning for Jobs*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/9789264087460-en. [82]

OECD (2005), *Trade and Structural Adjustment: Embracing Globalisation*, OECD Publishing, Paris, https://doi.org/10.1787/9789264010970-en. [101]

OECD (forthcoming), *Competition Assessment Tunisia*, OECD Publishing Paris. [25]

OECD (forthcoming), *Soutenir la Tunisie dans la mise en œuvre de mesures fiscales*, OECD Publishing Paris. [102]

Olley, G. and A. Pakes (1996), "The Dynamics of Productivity in the Telecommunications Equipment Industry", *Econometric*, Vol. 64/6, pp. 1263-1297, https://www.jstor.org/stable/pdf/2171831.pdf?refreqid=excelsior%3A0e474c9384e818e114e409d9172a6487 (accessed on 17 January 2019). [47]

ONEQ (2019), *La formation professionnelle en chiffres 2017*, Observatoire National de l'Emploi et des Qualifications, http://www.emploi.tn/uploads/pdf/ONEQ/FP2017_VF.pdf (accessed on 27 June 2021). [83]

ONEQ (2017), *Etude sur l'insertion professionnelle des diplômés du dispositif national de la formation professionnelle*, Observatoire Nationale de l'Emploi et des Qualifications, http://www.emploi.nat.tn/ckeditor/ckfinder/userfiles/files/Rapport_dip_fp.pdf. [62]

ONEQ (2013), *Le marché du Travail en Tunisie*, Observatoire National de l'Emploi et des Qualifications, http://www.emploi.tn/uploads/pdf/ONEQ/2013_Rapport_sur_le_marche_du_travail.pdf (accessed on 11 June 2021). [2]

Pavcnik, N. (2002), "Trade Liberalization, Exit, and Productivity Improvements: Evidence from Chilean Plants", *The Review of Economic Studies*, Vol. 69/1, pp. 245-276, https://doi.org/10.1111/1467-937X.00205. [36]

Plank, L. and C. Staritz (2014), "Global Competition, Institutional Context, and Regional Production Networks: Up-and Downgrading Experiences in Romania's Apparel Industry", *ÖFSE Working Paper*, Vol. 50, https://www.econstor.eu/bitstream/10419/104631/1/805462295.pdf (accessed on 9 July 2021). [16]

Rocha, R., G. Ulyssea and L. Rachter (2018), "Do lower taxes reduce informality? Evidence from Brazil", *Journal of Development Economics*, Vol. 134, pp. 28-49, https://doi.org/10.1016/j.jdeveco.2018.04.003. [103]

Rudloff, B. (2020), "A Stable Countryside for a Stable Country? The Effects of a DCFTA with the EU on Tunisian Agriculture", *Stiftung Wissenschaft Politik Research Papers*, Vol. 2, https://doi.org/10.18449/2020RP02. [30]

Silva, J., R. Almeida and V. Strokova (2015), *Sustaining Employment and Wage Gains in Brazil: A Skills and Jobs Agenda*, The World Bank, https://doi.org/10.1596/978-1-4648-0644-5. [106]

Spitz-Oener, A. (2006), "Technical Change, Job Tasks, and Rising Educational Demands: Looking outside the Wage Structure", *Journal of Labor Economics*, Vol. 24/2, pp. 235-270, https://doi.org/10.1086/499972. [57]

Stampini, M. and A. Verdier-Chouchane (2011), "Labor Market Dynamics in Tunisia: The Issue of Youth Unemployment", *Review of Middle East Economics and Finance*, Vol. 7/2, pp. 1-35, https://doi.org/10.2202/1475-3693.1394. [105]

TAA (2020), *Présentation du Pacte pour l'Industrie Automobile en Tunisie et des résultats de l'enquête impact COVID-19*, https://taa.tn/wp-content/uploads/2020/12/20200723-TAA-Pr%C3%A9sentation-AG-TAA-Jeudi-23-Juillet.pdf. [86]

TIA (2020), *Automotive Sector Representation*, Tunisian Investment Authority, https://tia.gov.tn/storage/app/media/TUNISIA%20VALUE%20PROPOSITION/TIA%20TUNISIA%20AUTOMOTIVE%20SECTOR.pdf. [87]

Topalova, P. and A. Khandelwal (2011), "Trade Liberalization and firm productivity: The case of India", *The Review of Economics and Statistics*, Vol. 93/3, pp. 995-1009, https://doi.org/10.1162/REST_a_00095. [35]

UNESCO (2021), *Talents TIC en Tunisie - l'adéquation entre l'offre et la demande*, https://en.ichei.org/Uploads/Download/2021-10-13/61667cfbd9c78.pdf. [60]

UNICEF (2020), *Analyse de la situation des enfants en Tunisie 2020*, UNICEF, https://www.unicef.org/tunisia/media/2986/file/SITAN-11-2020.pdf (accessed on 15 June 2021). [6]

UNICEF and INS (2019), *Tunisie: Enquête par grappes à indicateurs multiples (MICS)*, le Ministère du Développement de l'Investissement et de la Coopération Internationale (MDICI)., https://washdata.org/report/tunisia-2018-mics-report. [4]

World Bank (2021), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators. [64]

World Bank (2021), *Youth Employment In Tunisia : Concept Note for Activities Under the New Window, Better Employment Policies*, World Bank, https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/368251622210279606/youth-employment-in-tunisia-concept-note-for-activities-under-the-new-window-better-employment-policies. [77]

World Bank (2020), *TUNISIA ECONOMIC MONITOR Rebuilding the Potential of Tunisian Firms*, World Bank, Washington DC, https://documents1.worldbank.org/curated/en/194331608565600726/pdf/Tunisia-Economic-Monitor-Rebuilding-the-Potential-of-Tunisian-Firms-Fall-2020.pdf (accessed on 17 June 2021). [14]

World Bank (2016), *Brazil Systematic Country Diagnostic: Retaking the path to Inclusion, Growth and Sustainability*, The World Bank Group. [110]

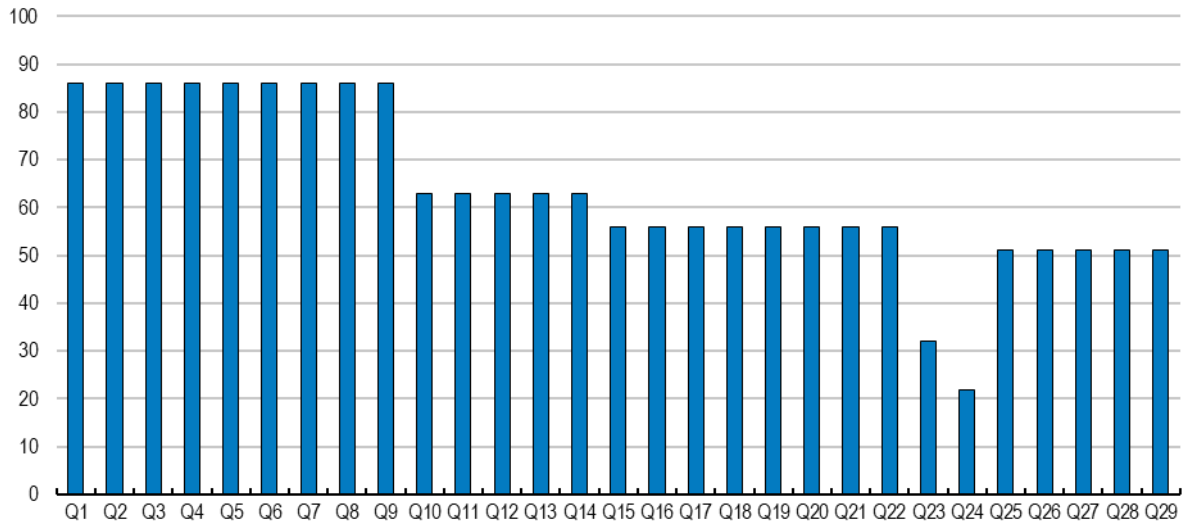
WTO (2016), *Trade policy review - Tunisia*, World Trade Organsiation, https://www.wto.org/english/tratop_e/tpr_e/s341_e.pdf. [11]

Annex A. Details on the empirical analysis

Annex A.1. Online survey on skill needs of firms in Tunisia

To gather information on skill needs as well as training and recruitment activities of firms, an online survey among 86 firms active in Tunisia has been conducted for this survey in spring 2021. The questionnaire, which is presented below in Annex A.5., has been developed in close cooperation with the Employment, Labour and Social Affairs (ELS) Directorate of the OECD, which has created an additional module on skill gaps for the EU Continuing Vocational Training Survey (CVTS). The questionnaire has been adapted to the Tunisian context supported by a pilot study among Tunisian firms and experts. It has been implemented online using the licensed software Survey Monkey. All questions refer to the year 2019. The business chambers of France, Germany and Italy as well as the German Corporation for International Cooperation (GIZ) provided access to their firm networks in Tunisia to distribute the online survey. The sample of firms covers 12 economic sectors and all six regions in Tunisia, and the size of firms ranges from below 10 to above 1000 employees per firm. The sample size per questions is shown in Figure A.1

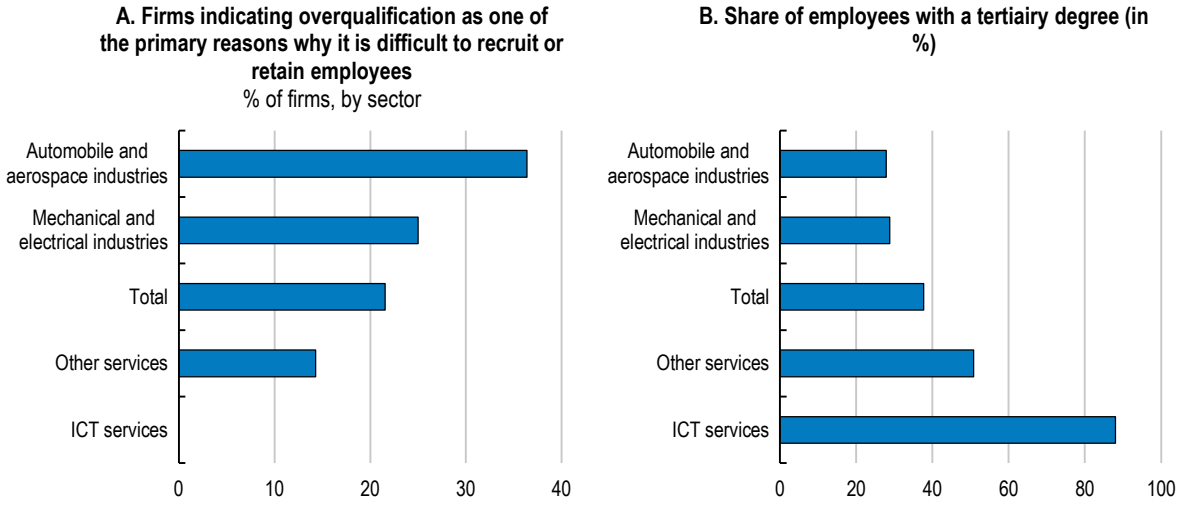
Figure A.1. Number of responses per question



Source: Firm survey on skill needs conducted by the OECD for this report.

The online survey was complemented by a series of 12 qualitative interviews with firms in four focus sectors: ICT services, automotive industries, tourism and agriculture. The interviews took about an hour on average and focused on questions related to skill needs, training and recruitment practices, but also on the business climate as well as labour market policies and institutions.

Figure A.2. Absorption capacity for tertiary graduates is lower in the manufacturing industries, and over-qualification is more frequent



Note: Only sectors with at least 7 companies that replied are included.
Source: Firm survey on skill needs conducted by the OECD for this report.

Annex A.2. Firm level analysis of total factor productivity (TFP)

This study uses firm-level information provided in the World Bank (WB) Enterprise Survey for the years 2013 and 2019 to construct comparable measures of firm's total factor productivity (TFP) in several economic sectors in Tunisia. The WB surveys include a representative sample of firms in the non-agricultural and formal private sector. The topics covered by the survey include infrastructure, trade, finance, regulations, taxes and business licensing, corruption, crime and informality, access to finance, innovation, labour, and perceptions about obstacles to doing business. The 2013 survey collected data from 592 firms, while the most recent survey for Tunisia collected data from 615 firms for the year 2019, but was conducted in 2020. 228 firms were observed in 2013 and 2019. The data from the most recent survey were not influenced by COVID-19, since it refers to firms' operations in the previous financial year (2019).

Using information on firm revenue, employment, capital stock and intermediate input use, the following sector-specific value-added production functions in logarithmic form were estimated for the pooled sample of firms across all years:

$$\log\left(real\_value\_added_{f,t,k}\right) = \alpha_k \log\left(employment_{f,t,k}\right) + \beta_k log(capital_{f,t,k}) + u_{f,t,k} \quad (1)$$

For firm f, in year t and sector k. Capital is measured as the replacement costs of all equipment and machinery. As firms in services sectors did not report capital and intermediate input use, they are excluded from the analysis. In the baseline specification, the nominal variables revenue, capital and inputs were deflated using a consumer price index (CPI) from the National Statistics Institute (INS). The regressions are estimated using OLS, as sample size by year was not sufficient for using more sophisticated econometric techniques such as the estimator suggested by Levinsohn and Petrin (Levinsohn and Petrin, 2003).

The residuals of the estimated sector-specific production functions in equation (6) are taken as a measure for firm's total factor productivity (TFP). To make calculations using the TFP estimates comparable across economic sectors, the measure for firm TFP is standardised by the geometric mean of the measure across firms within the economic sector. The TFP estimation was only feasible for five aggregated economic

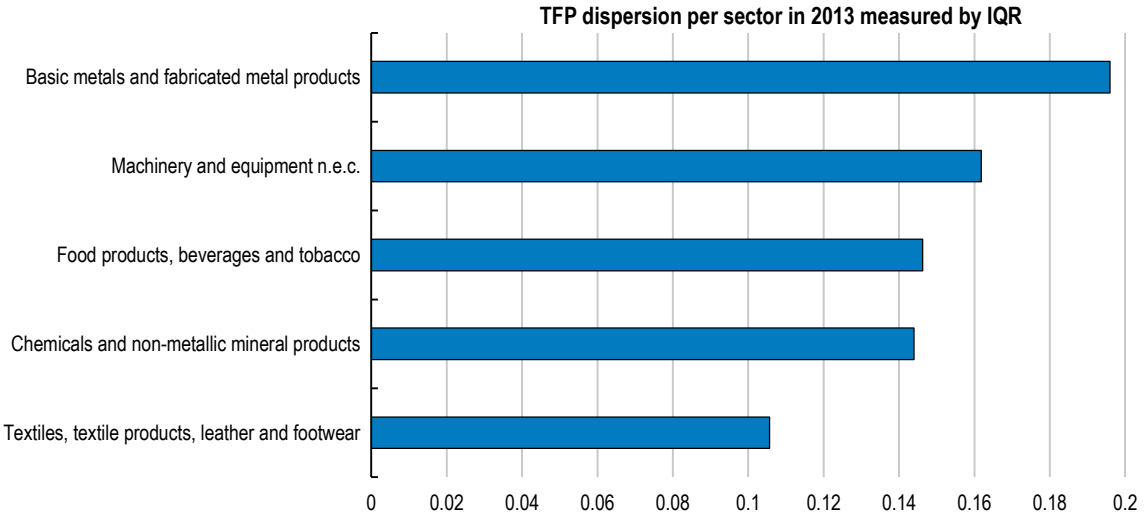
sectors (basic metals and fabricated metal products; machinery and equipment; chemicals and non-metallic mineral products; textiles, textile products, leather and footwear; food products, beverages and tobacco), as the sample does not include sufficient information on firms in other economic sectors. The resulting sample of firms includes 614 firm-year observations. A robustness check using a sector-specific gross production function (with output instead of value added as the dependent variable) gives similar results to the results presented in this section.

An interesting question is to what extent differences in the efficiency of factor allocation across firms within economic sectors can explain productivity differences across economic sectors. The decomposition method suggested by Olley and Pakes allows such an assessment (Olley and Pakes, 1996). Aggregate sector productivity for each sector and year is decomposed into two terms (indices for sector and year are omitted for readability):

$$\sum_{f=1}^{N}(\theta_f\, TFP_f) = \frac{1}{N}\sum_{f=1}^{N} TFP_f + \sum_{f=1}^{N}(\theta_f - \bar{\theta})(TFP_f - \overline{TFP}) \quad (2)$$

θ_f is the market share of firm f, N is the total number of firms and $\bar{\theta}$ and $\overline{TFP}$ are the average market share and total factor productivity of firms, respectively. In the baseline, value added is used to measure the market share of firms in each sector and year, but results also hold when using employment instead. The first term after the equal sign is the unweighted average of firm-level total factor productivity (TFP). The second term is a cross term that captures allocative efficiency. It reflects the extent to which firms with greater total factor productivity have a greater market share (or a larger size). The cross term increases when more productive firms are larger. As the dispersion of TFP within sectors might influence the size of the efficiency measure (but not the sign), it is important to also consider TFP dispersion by sector (Figure A.3). A high value of the efficiency measure might be related to a high productivity dispersion, and vice versa.

Figure A.3. Dispersion of TFP by sector



Note: IQR stands for Inter-quartile range and measures the difference of a variable between the third and the first quartile of the distribution.
Source: OECD calculations based on the World Bank Enterprise survey.

An attractive measure of allocative efficiency is the share of the average sector level TFP that is explained by the resource allocation in the industry, i.e. the ratio between the cross term on the right hand side of equation (2) and the term on the left hand side. This measure of allocative efficiency is presented in

Figure 18 (panel A) for the five economic sectors, for which the TFP estimation was feasible. In food manufacturing, which is characterised by relatively high tariffs and non-tariff measures (NTMs), the allocation of resources across firms only explains 5% of average sectoral productivity, which is much lower than in metal manufacturing, machinery and equipment or chemicals, which are characterised by lower import protection (Figure 18, panel B). This indicates that in food manufacturing resources are trapped in low-productivity firms, while they should move to more productive usage in higher productivity firms. The fact that productivity dispersion in food manufacturing is relatively high confirms that the low value of the allocative efficiency measure is due to an inefficient resource allocation and not due to a low productivity dispersion (**Error! Reference source not found.**).

A complementary analysis looks for correlations between firm productivity and other firm characteristics as identified from the World Bank Enterprise Survey. The following simple OLS regressions of firm TFP on covariates are conducted on the pooled sample of firms using robust standard errors:

$$\log(TFP\_index_{f,t,k}) = \alpha_0 + \alpha_1 z_{f,t,k} + \boldsymbol{x'}_{f,t,k}\boldsymbol{\beta} + \gamma_k + \delta_t + u_{f,t,k} \quad (3)$$

For firm f in year t and economic sector k. The variable z stands for the variable of interest, with a separate specification estimated for each variable of interest as presented in (Table A.1). All specifications include the following covariates in vector x: dummy variables for the firm being a subsidiary, partly foreign owned or partly government owned, the population size of the economic region the firm is located in, the age of the firm, and three binary variables for firm size (based on employment, using 10, 20 and 100 as thresholds, and with smallest firms being the base category). All specifications also include sector fixed effects (γ_k), which control for any time-invariant sector-specific characteristics, and year fixed effects (δ_t), which control for time-varying macro-economic effects affecting all firms at the same time. Including fixed effects for firms was not possible due to limited sample size, but results are robust to including sector-year fixed effects (Table A.2). As for some firms TFP could not be calculated due to missing capital stock information, the regression (3) was also estimated using the log of labour productivity (measured as value added divided by employment) as the dependent variable. Although the sample is larger when using the labour productivity measure, not controlling for the capital stock of the firm can introduce omitted variable bias, which is why TFP regressions are preferred as the baseline.

Selected results for different variables of interest are shown in Table A.1. Table A.2 shows the estimated coefficients of control variables. As the TFP measure is standardised using the mean of TFP across firms within the economic sector (see above), coefficients need to be interpreted with respect to the sector mean of firm productivity. For example, providing formal training for its workers is associated with a 3.1% higher firm TFP relative to the sectoral mean of firm productivity (Table A.1). To make estimates comparable, labour productivity was standardised in the same way. Results are similar when comparing the dependent variable TFP with labour productivity. As regressions only use variance across firms within economic sectors, the coefficients of some regulatory and infrastructure variables are insignificant due to low variation of these variables across firms within economic sectors.

Table A.1 Correlates of total factor productivity (TFP) and labour productivity for Tunisian firms

Independent Variable	Association with firm level TFP	Percentage increase/decrease of TFP index	Association with firm level labour productivity	% increase/decrease of labour productivity index
Skills				
Firm has formal training programs for workers	++	3.1%	+++	2.6%
Trade				
Firm uses imported intermediate inputs	+++	4.4%	+++	2.6%
Firm has internationally recognized quality certification for its products	Not significant	2.2%	+++	3.4%
Innovation				
R&D expenditure (yes or no dummy)	++	3.2%	+++	3.4%
Using technology licensed by a foreign company	+++	5.8%	+++	4.6%
Firm has its own website	+++	2.7%	+++	3.3%
Access to Credit				
Access to finance is an issue for the firm	---	-1.5%	---	-1.1%
Firm has a line of credit from a financial institution	Not significant	1.6%	Not significant	0.6%
Infrastructure				
Losses as % of annual sales due to power outages	Not significant	-0.4%	Not significant	0.1%
Regulatory Environment				
How much of an obstacle: inadequately educated workforce	Not significant	-0%	-	-0.6%
How much of an obstacle: Corruption	Not significant	-0%	Not significant	-0.5%

Note: Results are based on OLS regressions on the pooled sample of firms using robust SE. The dependent variables are log of total factor productivity (TFP) and log of labour productivity (measured as value added divided by employment). As TFP and labour productivity are standardised using the sectoral mean, changes presented in the table are relative to average productivity in the economic sector the firm is located in. All regressions control for dummies for the firm being a subsidiary, partly foreign owned, partly government owned, dummies for the size of the economic region the firm is located in, the age of the firm, three dummies for firm size (based on employment, using 10, 20 and 100 as thresholds, and with smallest firms being the base category), dummies for the year of the observation as well as dummies for the economic sector. The sign "+" stands for a positive correlation and the sign "-" for a negative correlation of the independent variable with firms TFP (or labour productivity). "+++"/"---" stands for significant at the 5% level, "++"/"--" stands for significant at the 10% level and "+"/"-" stands for significant at the 15% level.
Source: OECD calculations based on the World Bank Enterprise Survey 2013 and 2020.

Table A.2. Correlates of total factor productivity (TFP) and labour productivity for Tunisian firms

Coefficients for all control variables used in the OLS regressions in previous table

Dependent Variable:	TFP		Labour productivity	
	Without sector-year FE	With sector-year FE	Without sector-year FE	With sector-year FE
Firm has its own website	0.027**	0.026**	0.033***	0.033***
	(0.013)	(0.013)	(0.009)	(0.009)
Dummy variable for the firm being a subsidiary of a larger company	-0.030*	-0.027	-0.020*	-0.019*
	(0.018)	(0.017)	(0.011)	(0.011)
% owned by foreign individuals	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Dummy variable for the firm being partly government owned	-0.015	-0.010	-0.025	-0.022
	(0.104)	(0.104)	(0.059)	(0.059)
Age of the firm (in years)	0.000	0.000	0.001**	0.001**
	(0.001)	(0.001)	(0.000)	(0.000)
Dummy variable for the firm being small (10-20 employees) – ref: <10 employees	0.016	0.011	0.022	0.022
	(0.027)	(0.029)	(0.019)	(0.019)
Dummy variable for the firm being medium size (20-100 employees) – ref: <10 employees	0.014	0.011	0.039***	0.040**
	(0.024)	(0.026)	(0.015)	(0.016)
Dummy variable for the firm being large (more than 100 employees) – ref: <10 employees	0.004	0.002	0.041**	0.043**
	(0.025)	(0.026)	(0.016)	(0.017)
City with 50k to 250k inhabitants – ref: <50k inhabitants	0.016	0.013	0.012	0.009
	(0.018)	(0.018)	(0.012)	(0.012)
City with over 250k to 1 million inhabitants – ref: <50k inhabitants	0.010	0.009	0.010	0.009
	(0.019)	(0.019)	(0.012)	(0.012)
Tunis Metropolitan area (except the capital city) – ref: <50k inhabitants	0.045**	0.039*	0.037**	0.035**
	(0.023)	(0.023)	(0.015)	(0.015)
Sector fixed effects	Yes	No	Yes	No
Year fixed effects	Yes	No	Yes	No
Sector-year fixed effects	No	Yes	No	Yes
Observations	330	330	452	452
R-squared	0.078	0.092	0.140	0.146

Note: Results are based on OLS regressions on the pooled sample of firms using robust SE. The dependent variables are log of total factor productivity (TFP) and log of labour productivity (measured as value added divided by employment). As TFP and labour productivity are standardised using the sectoral mean, coefficients presented in the table are relative to the average productivity in the economic sector the firm is located in. All regressions control for dummies for the firm being a subsidiary, partly foreign owned, partly government owned, dummies for the size of the economic region the firm is located in, the age of the firm, three dummies for firm size (based on employment, using 5, 20 and 100 as thresholds), dummies for the year of the observation as well as dummies for the economic sector. Robust standard errors in parenthesis, *** p<0.05, ** p<0.1, * p<0.15.

Source: OECD calculations based on the World Bank Enterprise Survey 2013, 2020.

References:

Levinsohn, J. and A. Petrin (2003), "Estimating Production Functions Using Inputs to Control for Unobservables", Review of Economic Studies, Vol. 70/2, pp. 317-341, http://dx.doi.org/10.1111/1467-937x.00246.

Olley, G. and A. Pakes (1996), "The Dynamics of Productivity in the Telecommunications Equipment Industry", *Econometrica*, Vol. 64/6, p. 1263-1298, http://dx.doi.org/10.2307/2171831.

Annex A.3. Analysis of industry level effects of trade protection

To investigate how sectoral economic activity, productivity and exports have reacted to changes in input tariffs over the past years in Tunisia, this study uses a sectoral panel dataset for Tunisia from 2003 until 2016. The dataset contains information on average input tariffs, employment, production, value added, exports, imports as well as several indicators for the integration into global value chains. Data on production, value added, exports, imports and various measures for sector specific integration into global value chains are taken from the OECD Trade in Value Added (TiVA) database (Feb 2021). Data are available for 36 unique industries based on the ISIC rev. 4 classification and for the years 2005-2015.

Data on formal employment as well as additional data on exports and imports by economic sector are taken from the "Repertoire National des Entreprises" from the "Institut National de la Statistique" (INS) and are available for the years 1995-2016. These data were aggregated from the original firm-level data to the ISIC4 four-digit sector classification, which was mapped with the TIVA industry classification. As this firm-level data allows to distinguish between "offshore" firms, which enjoy preferential conditions in terms of taxes, tariffs, administrative procedures, and access to customs and trade infrastructure, and other "onshore" firms, the data was aggregated separately for the groups of offshore and onshore firms for each economic sector (Joumard, Dhaoui and Morgavi, 2018; World Bank, 2020). To include informal employment in the analysis, additional data on total employment by economic sector, which includes formal and informal employment, was taken from the Labour Force Survey of the INS for the years 2005-2017. As the sectoral classification of the Labour Force Survey was less detailed, analysis using this data required a mapping with the main panel data set at a higher level of aggregation, i.e. 17 aggregated TIVA level industries.

To quantify average sector-level input protection over 2003-2016, this study uses time series data on import tariffs for intermediate inputs from the OECD, in addition to detailed data on input use by sector based on the OECD TIVA input-output table for Tunisia. OECD tariff data aggregate input tariffs to the sectoral level using weighted averages of input tariff lines within the economic sector, with import values as weights. Product-level tariffs for inputs are applied tariff rates (AHS) at the HS 8 digit level sourced from UN COMTRADE, with inputs defined according to a novel OECD classification that classifies goods as intermediates, capital goods or final consumption goods (see **http://oe.cd/btd**). Where applied tariff rates are not available, preferential rates or most-favoured nation (MFN) rates are taken instead. Average tariffs for capital goods and final goods by sector are computed accordingly.

The industry-level input tariff data are then weighted using input-output coefficients to obtain measures of average input protection for each of the 36 final goods sector. The input-output coefficients are constructed using input-output data from OECD TiVA for the years 2005-2015 and calculating the average share of inputs from the origin sector in total input use of the final sector. Using an average over several years allows netting out short-term fluctuations in macro-economic accounts. This procedure allows constructing average input tariffs for 36 economic sectors over the years 2003-2016. Similarly, average input tariffs were constructed for the 17 aggregated economic sectors required for the analysis using the labour force data.

To analyse the effects of input protection on sectoral economic activity, productivity and employment the following regressions are estimated for each of the eight dependent variables (in logs) shown in (Table A.3) using a fixed effects estimator:

$$\log(dependent\ variable_{i,t}) = \beta inputtariffs_{i,t} + \gamma_i + \delta_t + u_{i,t} \quad (1)$$

Where the subscript i denotes the sector and t the year. The independent variable of interest is the average input tariff for the economic sector i in year t (input tariffs). Fixed effects for the economic sector (γ_i) control for all unobservable time-invariant sector-specific characteristics and time fixed effects (δ_t) for all macroeconomic effects that affect all economic sectors alike. These regressions only use variation within economic sectors across time for identification, which allows to control for unobserved time-constant sector-specific differences. For example, these are average capital intensity or investment in research and development, that otherwise might bias the results to the extent that any of them could be correlated with the dependent variable and at the same time with the independent variable average input tariffs. Robust standard errors are used to account for potential heteroscedasticity.

Source:

Table A.3. Effects of average intermediate input tariffs on economic activity

OLS regressions control for sector fixed effects and use only variation within economic sectors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variables:	**Log of employment**	**Log of production**	**Log of value added**	**Log of output per worker**	**Log of value added per worker**	**Log of exports**	**Log of exports per worker**	**Log of value added exports**	**Log of intermediate imports**
Average tariffs for Inputs	0.008	-0.009**	-0.011**	-0.019***	-0.022***	-0.054	-0.067*	-0.013	-0.030**
	(0.005)	(0.004)	(0.005)	(0.007)	(0.007)	(0.035)	(0.035)	(0.011)	(0.015)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	490	385	385	385	385	470	470	352	385
R-squared	0.979	0.992	0.992	0.984	0.984	0.898	0.887	0.984	0.982

Note: For each dependent variable, the table shows the results of fixed effects regressions that control for unobservable and time-invariant sector specific as well as time specific characteristics and only use variation within economic sectors over time for identification. Due to data availability issues, the sample sizes vary between dependent variables, but results are robust to restricting the sample to be equal across regressions. Robust standard errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.
Source: OECD calculations based on data from OECD TiVA and INS.

The main results are presented in (Table A.3 and show a strong negative link between average input tariffs and sectoral output, value added as well as labour productivity measured by output per worker or value added per worker. The negative association is significant at the 5% significance level for these four dependent variables. For example, an increase in average input tariffs by 1 percentage point is associated with a decrease in labour productivity by 2.2% (using value added per worker). This productivity decrease is related to a deteriorating access to intermediate inputs, as the increase in input tariffs decreases imports of intermediate inputs by 3%. There is no significant link between average input tariffs and exports at the sectoral level, but further analysis below allows shedding light on differential effects for onshore and offshore firms. Employment shows no significant correlation with input tariffs. As the average input tariffs in 2016 (the last year of the sample) are about 9%, the results indicate that a reduction of input tariffs by 50% would lead to an increase in labour productivity by around 10%, and an increase in imports of intermediate inputs by 14%.

To investigate whether the significant negative effect of an increase in input tariffs on labour productivity holds when taking into account informal employment, regressions are run using total employment by economic sector, which includes formal and informal employment. Results in (Table A.4 indicate that the effects of an input tariff rise on labour productivity are still significantly negative, although the size of the effect is smaller than compared to (Table A.3). Thus, a reduction in input tariffs is not only associated with an increase in labour productivity in the formal sector, but would likely also benefit many informal workers. Lower input prices and increased labour productivity could incentivise the formalisation of many workers.

Table A.4. Effects of average intermediate input tariffs on labour productivity including informal employment

OLS regressions control for sector fixed effects and use only variation within economic sectors

	(1)	(2)	(3)	(4)
Dependent Variables:	**Log of employment**	**Log of output per worker**	**Log of value added per worker**	**Log of exports per worker**
Average tariffs for Inputs	0.006	-0.013**	-0.014*	-0.028***
	(0.004)	(0.006)	(0.008)	(0.014)
Sector FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	176	165	165	143
R-squared	0.996	0.989	0.987	0.99

Note: For each dependent variable, the table shows the results of fixed effects regressions that control for unobservable and time-invariant sector specific as well as time specific characteristics and only use variation within economic sectors over time for identification To merge the panel data set with employment data from the labour force survey, economic sectors were aggregated to 17 sectors. Due to data availability issues, the sample sizes vary between dependent variables, but results are robust to restricting the sample to be equal across regressions. Robust standard errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.
Source: OECD calculations based on data from OECD TiVA and INS.

To attract foreign direct investment Tunisia grants specific administrative and tax advantages to foreign-owned firms (‘’offshore firms”), if they export at least 70% of their production. These offshore firms have played a very important role as an engine of job creation and exports growth, as they account for 35% of formal sector employment and more than three quarters of exports, but for only 4% of all firms. They are exempted from strict foreign exchange regulations, tariffs and non-tariff measures, and many taxes, and have preferred access to trade infrastructure and custom procedures (Joumard, Dhaoui and Morgavi, 2018). However, linkages with the domestic economy are very weak. In turn, domestic or “onshore” firms face relatively high tariffs for inputs and capital goods and are poorly integrated into global value chains.

To investigate how improved access to cheaper and higher quality inputs and capital goods would affect onshore firms, the analysis builds on the firm-level data set “Repertoire National des Entreprises” which allows to aggregate exports, imports and formal employment by economic sector and offshore vs. onshore regime. Matching this data to the baseline panel data set and running fixed effects regressions akin to equation (1) for each regime separately leads to the results shown in (Table A.5) An increase in average input tariffs is associated with a large negative significant effect on exports and exports per worker in onshore firms. Reducing input tariffs by 50% is associated with an increase of exports and exports per worker by 28% and 36%, respectively. For offshore firms results are insignificant at the 5% significance level, which reflects the fact that these firms are exempted from tariffs and should therefore not be directly affected by tariff changes. However, the positive size of the coefficients indicate that relative improvements in access to inputs and capital goods for onshore firms might have negative spill-over effects to offshore firms in the same sector through rising costs of production factors that are mobile between the two regimes.

Table A.5. Effects of average intermediate input tariffs on economic activity for offshore and onshore firms

OLS regressions control for sector fixed effects and use only variation within economic sectors

	(1)	(2)	(3)	(4)
	Onshore firms		Offshore firms	
Dependent Variables:	Log of exports (INS)	Log of exports per worker	Log of exports (INS)	Log of exports per worker
Average tariffs for Inputs	-0.062**	-0.081**	0.042	0.045*
	(0.032)	(0.033)	(0.029)	(0.025)
Sector FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	469	469	380	380
R-squared	0.873	0.874	0.911	0.866

Note: For each dependent variable, the table shows the results of fixed effects regressions that control for unobservable and time-invariant sector specific as well as time specific characteristics and only use variation within economic sectors over time for identification. Due to the fact that offshore firms are not active in all economic sectors, the sample sizes vary between the two regimes. Robust standard errors in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.
Source: OECD calculations based on data from OECD TiVA and INS.

A set of unreported robustness checks has been undertaken and is available on request. Endogeneity concerns are somewhat mitigated in the estimation equation (1), as the input tariff measure is a weighted average across all economic sectors and less likely to be simultaneously affected by the economic activity of the specific sector or other unobserved, time-varying and sector specific variables correlated with economic activity. Trying to address endogeneity concerns by including the input tariff measure with a one-year lag gives similar results than in (Table A.3). As data for some dependent variables was not available for all years and sectors, sample sizes for the regressions differ between dependent variables to include the maximal available sample size for each dependent variable. However, results are robust to restricting the sample size to be equal across dependent variables. Additional results from regressions excluding sector fixed effects, which use variation across sectors for identification, suggest that sectors facing higher average input tariffs import fewer intermediate inputs and have significantly lower labour productivity.

To investigate how sectoral economic activity, labour productivity, and exports have reacted to changes in sectoral output tariffs over the past in Tunisia, this study uses the same sectoral panel dataset for Tunisia from 2003 until 2016 described above, replacing the input tariff measures in equation (1) by a measure of average output tariffs at the sectoral level. Results show a significant negative link between average output tariffs and labour productivity as well as exports and value added exports. A decrease of average output tariffs by 1 percentage point is associated with an increase in labour productivity and exports by 1.4% and 4.3%, respectively. The magnitude of the effect on labour productivity is about half of the effect of a decrease in input tariffs on labour productivity (Table A.3), a result which is consistent with other empirical studies and underlines the importance of prioritising lowering import barriers for inputs and capital goods to raise productivity and economic growth (Amiti and Konings, 2007). Similar to the analysis on input tariffs, the positive effects of lowering output tariffs on labour productivity and exports are confined to onshore firms, whereas offshore firms are not significantly affected by changes in tariff measures. Results are robust to including the output tariff measure with a time lag, which addresses possible endogeneity concerns.

References:

Joumard, I., S. Dhaoui and H. Morgavi (2018), “Insertion de la Tunisie dans les chaines de valeur mondiales et role des entreprises offshore”, Documents de travail du Département des Affaires économiques de l’OCDE, No. 1478, Éditions OCDE, Paris, https://dx.doi.org/10.1787/546dbd75-fr.

World Bank (2020), TUNISIA ECONOMIC MONITOR Rebuilding the Potential of Tunisian Firms, World Bank, Washington DC, https://documents1.worldbank.org/curated/en/194331608565600726/pdf/Tunisia-Economic-Monitor-Rebuilding-the-Potential-of-Tunisian-Firms-Fall-2020.pdf (accessed on 17 June 2021).

Amiti, M. and J. Konings (2007), "Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia", American Economic Review, Vol. 97/5, pp. 1611-1638, http://dx.doi.org/10.1257/aer.97.5.1611.

Annex A.4. The OECD METRO model

To analyse the economy wide effects of a reduction in import protection for Tunisia, simulations have been undertaken using the OECD METRO model calibrated for this analysis to 6 regions, 30 economic sectors, and 8 production factors. This static CGE model relies on a comprehensive specification of all economic activity within and between countries and the different inter-linkages that tie these together. As persistently high unemployment is a characteristic of the Tunisian economy, the simulations assume that the supply of labour is elastic. The endowments of capital, natural resources and land are fixed. The simulations represent medium-term shocks where production factors are mobile, but there is no capital accumulation. It has been used widely in trade analysis to simulate the effects of domestic trade policy reforms in an international environment (OECD, 2015).

The OECD METRO model builds on the GLOBE model (McDonald and Thierfelder, 2013). The novelty and strength of the METRO model lies in the detailed trade structure and the differentiation of commodities by end use, e.g. commodities designed for intermediate use, for use by households, for government consumption, and for investment. The underlying framework of METRO consists of a series of individually specified economies interlinked through trade relationships. As is common in CGE models, the price system in the model is linearly homogeneous, with a focus on relative, not absolute, price changes. Each region has its own numéraire, typically the consumer price index, and a nominal exchange rate (an exchange rate index of reference regions serves as model numéraire). Prices between regions change relative to the reference region.

The model is firmly rooted in microeconomic theory, with firms maximising profits and creating output from primary inputs (i.e. land, natural resources, labour and capital), which are combined using constant elasticity of substitution (CES) technology, and intermediate inputs in fixed shares (Leontief technology). Households are assumed to maximise utility subject to a Stone-Geary utility function, which allows for the inclusion of a subsistence level of consumption. All commodity and activity taxes are expressed as ad valorem tax rates, and taxes are the only income source of the government. In this study, the government is assumed to maintain an internal balance by adjusting its expenditure, tax rates are fixed. At the same time, the trade balance is fixed, and the nominal exchange rate is flexible in the simulations. The remuneration rates of the production factors land, capital, natural resources are assumed to adjust to equilibrate the factor markets. Wages are fixed and labour markets clear through adjustments in labour supply. The study differentiates between five different types of labour: managers and professionals, technical and assistant professionals, clerks, service and shop assistants and agricultural and other low skilled workers.

The database of the model relies on the GTAP v9 database (Aguiar, Narayanan and McDougall, 2016) in combination with the OECD Inter-Country Input-Output Tables, which are the main source of the OECD Trade in Value Added (TiVA) data, and allows the model to distinguish trade for use in intermediate production or final demand. The original dataset contains 61 countries and regional aggregates and 57 commodities and was aggregated for this analysis to 6 regions and 30 economic sectors. Policy information for Tunisia combines tariff and tax information from GTAP with OECD estimates of non-tariff measures on goods (see below). Information on trade facilitation, export restricting measures and estimates of services

trade restrictions was not available for Tunisia. Information on the intensity of economic sectors in different types of labour also come from the GTAP v9 database.

In the context of this study, the OECD METRO model has been extended to incorporate a productivity-enhancing effect of improved access to foreign inputs (Cassimon, Grundke and Kowalski, forthcoming). When firms are constrained in their choice of using imported inputs or capital goods, they are likely to pay higher prices and may have to source lower-quality input and capital goods. Lower trade barriers can bring down prices, but also raise the quality of these inputs. This may be the result of rising imports, but also of the reaction of domestic producers to rising competition. Many domestic producers of intermediate and capital goods would likely react to the stronger foreign competition by upgrading their production processes and improving their products (Amiti and Khandelwal, 2013[6]; Topalova and Khandelwal, 2011[7]; Pavcnik, 2002). As a consequence, the improved sourcing options for intermediate inputs and capital goods would allow domestic firms to upgrade their production processes through technology embedded in new inputs and machinery (Amiti and Konings, 2007).

To incorporate this productivity-enhancing effect of improved access to foreign inputs into the OECD METRO model, the elasticity of labour productivity with respect to input tariffs is estimated for Tunisia using sectoral panel data, as described in Annex A.3. If input tariffs are decreased by one percentage point, labour productivity (measured as value added per worker) increases by 2.2% in (Table A.3). As the average input tariffs in 2016 (the last year of the sample) are about 9%, the results indicate that a reduction of input tariffs by 50% would lead to an increase in labour productivity by around 10%. This elasticity is then linked to the production efficiency factor in the OECD METRO model, whereby the size of the Hicks-neutral technological shock at the sectoral level equals the respective percentage change in sectoral tariff and non-tariff measures multiplied by this elasticity and adjusted by the share of labour in total factor demand in the sector (Cassimon, Grundke and Kowalski, forthcoming). This shock is applied additively to the product efficiency parameter at the top of the nested CES production function.

To be able to include non-tariff measures in the METRO model simulations for Tunisia, this study uses a methodology developed at the OECD to estimate sector-specific, price-based ad-valorem equivalents of existing non-tariff measures (Cadot, Gourdon and van Tongeren, 2018; Gourdon, Stone and van Tongeren, 2020). To analyse the economy wide effects of a reduction in import protection for Tunisia, the OECD METRO model is used to simulate a unilaterally decrease of currently applied tariffs and non-tariff measures in Tunisia by 50%. The methodology and further results are described in detail in (Cassimon, Grundke and Kowalski, forthcoming).

References:

OECD (2015), "METRO VERSION 1 MODEL DOCUMENTATION", https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP(2014)24/FINAL&docLanguage=En.

McDonald, S. and K. Thierfelder (2013), Globe v2: A SAM based global CGE model using GTAP data - Model Documentation, http://cgemod.org.uk/Global%20CGE%20Model%20v2.pdf.

Aguiar, A., B. Narayanan and R. McDougall (2016), "An Overview of the GTAP 9 Data Base", *Journal of Global Economic Analysis*, Vol. 1/1, pp. 181-208, http://dx.doi.org/10.21642/jgea.010103af.

Cassimon, S., R. Grundke and P. Kowalski (forthcoming), "The opportunities associated with Tunisia's greater integration with international markets", *OECD Economics Department Working Papers*.

Amiti, M. and A. Khandelwal (2013), "IMPORT COMPETITION AND QUALITY UPGRADING", *The Review of Economics and Statistics*, Vol. 95/2, pp. 476-490, https://www.mitpressjournals.org/doi/pdf/10.1162/REST_a_00271.

Amiti, M. and J. Konings (2007), "Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia", American Economic Review, Vol. 97/5, pp. 1611-1638, http://dx.doi.org/10.1257/aer.97.5.1611.

Cadot, O., J. Gourdon and F. van Tongeren (2018), "Estimating Ad Valorem Equivalents of Non-Tariff Measures: Combining Price-Based and Quantity-Based Approaches", *OECD Trade Policy Papers*, No. 215, OECD Publishing, Paris, https://dx.doi.org/10.1787/f3cd5bdc-en.

Gourdon, J., S. Stone and F. van Tongeren (2020), "Non-tariff measures in agriculture", *OECD Food, Agriculture and Fisheries Papers*, No. 147, OECD Publishing, Paris, https://dx.doi.org/10.1787/81933f03-en.

Annex A.5. Questionnaire of the Online Survey on skills needs of Tunisian firms

Enquête sur les besoins de compétences des employeurs en Tunisie

L'intensification de la concurrence due à la mondialisation, à la transformation numérique et à la transition vers une économie plus verte contraignent les entreprises à adapter leur production, leur organisation et leurs processus de gestion. Dans ce contexte, les compétences des salariés et des dirigeants des entreprises sont essentielles pour améliorer leur compétitivité. La formation professionnelle continue et la formation en cours d'emploi, ainsi que les possibilités d'évolution professionnelle, sont plus importantes que jamais.

Cette enquête vise à obtenir des informations sur les besoins de compétences ainsi que sur les pratiques de recrutement et de formation dans votre entreprise. Les informations réunies aideront l'OCDE à faire le point sur la situation actuelle de la Tunisie en termes d'investissement dans les compétences et la formation, et à comprendre les difficultés et les limitations connexes. Cette enquête contribuera à l'élaboration de l'*Étude économique* que l'OCDE est en train de préparer à la demande des autorités tunisiennes.

Pour éviter toute distorsion potentielle due à la pandémie de COVID-19 et aux mesures d'endiguement connexes, nous vous demandons de répondre à toutes les questions en vous référant à l'année 2019.

Veuillez répondre à toutes les questions. À tout moment, vous pouvez retourner à une page précédente. Dans ce cas, et aussi si vous rencontrez des problèmes de connexion, vos réponses seront sauvegardées et vous pourrez revenir pour finaliser l'enquête. Les réponses sont enregistrées tant que vous utilisez le même navigateur Web et le même compte de courrier électronique.

Toutes les réponses resteront anonymes et les résultats seront uniquement diffusés sous forme agrégée.

Merci beaucoup de prendre le temps de répondre à cette enquête. N'hésitez pas à nous contacter si vous avez besoin d'informations complémentaires sur le projet et les objectifs de cette enquête, en utilisant les adresses électroniques suivantes : andrea.goldstein@oecd.org ; robert.grundke@oecd.org ; bishoy.sadek@oecd.org

Protection des données personnelles des répondants

L'OCDE s'engage à protéger les données à caractère personnel qu'elle traite, conformément à ses Règles de protection des données personnelles.

En vertu de ces Règles, vous avez le droit d'accéder aux données à caractère personnel qui vous concernent et de les rectifier, ainsi que de vous opposer à leur traitement, d'en demander l'effacement et d'obtenir, dans certaines conditions, la portabilité de ces données. Pour exercer ces droits au titre de votre participation à cette enquête, veuillez contacter : bishoy.sadek@oecd.org.

Pour toute autre demande ou réclamation relative au traitement des données à caractère personnel vous concernant, veuillez prendre contact avec le Délégué à la protection des données. Si vous avez besoin d'une aide complémentaire pour régler un litige en rapport avec la protection des données à caractère personnel vous concernant, vous pouvez vous adresser au Commissaire à la protection des données.

Q1 : Quel poste occupez-vous dans l'entreprise ?
Réponse ouverte :

Section I : Informations générales sur l'entreprise

Q2 : Quel est le principal secteur d'activité de votre entreprise ? (Veuillez en choisir un.)

i. Agriculture (y compris la pêche)
ii. Fabrication de produits alimentaires et de boissons
iii. Textiles
iv. Industrie chimique
v. Industrie pharmaceutique
vi. Industries mécaniques et électriques
vii. Industries automobile et aérospatiale
viii. Autres industries manufacturières
ix. Tourisme
x. Services liés aux technologies de l'information et de la communication (TIC)
xi. Services financiers
xii. Autres services

Q3 : Dans quelle région de la Tunisie est établie votre entreprise ? (Si votre entreprise possède plusieurs installations de production, veuillez sélectionner la région dans laquelle se trouvent l'essentiel de ces installations.)

i. Grand Tunis
ii. Nord-Est
iii. Nord-Ouest
iv. Centre-Ouest
v. Centre-Est
vi. Sud-Ouest
vii. Sud-Est

Q4 : Quel est le principal marché approvisionné par votre entreprise ? Veuillez-sélectionner une des réponses suivantes :

i. Marché intérieur tunisien (régime *onshore*)
ii. Marchés d'exportation uniquement (régime *offshore*)
iii. Marché intérieur et marchés d'exportation (régime mixte)

Q5 : Quelle est la structure du capital de votre société ? Veuillez-sélectionner une des réponses suivantes :

i. Société du secteur privé à capitaux tunisiens.
ii. Société à capitaux étrangers.
iii. Société du secteur privé à capital mixte (capitaux tunisiens et étrangers).
iv. Société entièrement ou partiellement détenue par l'État tunisien.

Q6 : À quand remonte la création votre entreprise ? Veuillez-sélectionner une des réponses suivantes :

i. Moins de 3 ans.

ii. Entre 3 et 6 ans.
iii. Entre 6 et 10 ans.
iv. Plus de 10 ans.

Q7 : Combien de salariés employait votre entreprise en 2019 ? Veuillez indiquer le nombre total de salariés :

Q8 : En 2019, quelle a été l'évolution des effectifs ? Veuillez-sélectionner une des réponses suivantes :

i. Ils ont diminué.
ii. Ils ont augmenté.
iii. Ils sont restés plus ou moins identiques.

Q9 : Quelle était la structure approximative de vos effectifs en 2019 ? Veuillez indiquer le pourcentage approximatif représenté par chaque catégorie :

a) Ventilation par sexe : hommes / femmes
b) Ventilation par niveau de formation : personnes n'ayant pas achevé l'enseignement secondaire / personnes diplômées de l'enseignement secondaire / personnes diplômées de l'enseignement supérieur
c) Ventilation par catégorie professionnelle : travailleurs manuels (ouvriers) / travailleurs intellectuels (employés)
d) Ventilation par âge : moins de 50 ans / plus de 50 ans

Section II : Comprendre les besoins de compétences de l'entreprise

Q10 : Dans votre entreprise, combien de salariés n'ont-ils pas les compétences nécessaires pour exercer leur emploi actuel ? (Veuillez-sélectionner une des réponses suivantes.)

a) Tous
b) La plupart
c) Certains
d) Peu
e) Aucun
f) Ne sait pas

[si Q9= (a), (b), (c) ou (d)]

Q11. S'agissant des salariés de votre entreprise qui ne disposent pas des compétences nécessaires pour exercer leur emploi actuel au niveau requis, lesquelles des compétences suivantes devraient, selon vous, être améliorées ? (Veuillez sélectionner les trois plus importantes dans la liste ci-dessous.)

Domaine de compétences

A Connaissances informatiques générales
B Connaissances informatiques professionnelles
C Compétences en gestion
D Aptitude au travail en équipe
E Aptitude aux relations avec la clientèle
F Aptitude aux tâches administratives
G Compétences en langues étrangères
H Compétences techniques, pratiques ou spécifiques au poste
I Compétences de communication orale ou écrite
J Compétences en mathématiques ou en calcul
K Compétences en lecture et/ou en écriture
L Capacité de résolution de problèmes
M Autres

Q12. Toujours s'agissant des salariés de votre entreprise qui ne disposent pas des compétences nécessaires pour exercer leur emploi actuel au niveau requis, lesquelles des mesures suivantes prenez-vous en vue de remédier à cette situation ? (Veuillez sélectionner les trois plus importantes dans la liste ci-dessous.)

A Fournir des activités de formation aux employés dans le cadre de l'entreprise (Définition : Ce type de formation se caractérise par des périodes planifiées de formation, de tutorat, d'acquisition de savoir faire et d'expérience pratique, faisant appel aux outils de travail habituels, directement sur le lieu de travail ou en situation de travail.)
B Fournir des cours de formation professionnelle continue (FPC) (Définition : Les sessions de la formation continue se déroulent généralement dans un environnement clairement distinct du lieu de travail, dans un endroit spécifiquement conçu pour l'apprentissage, tel qu'une salle de classe ou un centre de formation)
C Offrir des possibilités de mobilité professionnelle interne (c'est-à-dire d'affectation à un poste différent pour lequel la personne est qualifiée)
D Modifier les pratiques de travail et réattribuer les tâches
E Recruter de nouveaux travailleurs dotés des qualifications, des compétences et des aptitudes requises
F Recruter de nouveaux travailleurs tout en leur dispensant une formation spécifique
G Mettre en œuvre un système de tutorat ou de parrainage
H Renforcer le suivi des performances et fournir au personnel un retour d'information oral ou écrit

Q13. Sachant que certains de vos salariés ne disposent pas des compétences nécessaires pour exercer leur emploi au niveau requis, votre entreprise est-elle confrontée aux problèmes suivants ? (Cocher la case « Oui » ou la case « Non », si le problème mentionné vous concerne.)

		Oui	**Non**
A	Impossibilité de réaliser le volume d'activité souhaité		
B	Perte d'activité ou de commandes au bénéfice de concurrents		
C	Retard dans l'élaboration de nouveaux biens ou services		
D	Difficulté à satisfaire les exigences de qualité		
E	Augmentation des coûts d'exploitation		
F	Difficulté à introduire de nouvelles pratiques de travail		
G	Augmentation de la charge de travail d'autres salariés		
H	Difficultés à atteindre les objectifs visés en matière de service à la clientèle		
I	Retrait pur et simple et de certains biens ou services		
J	Difficultés à introduire des changements technologiques		

Q14. Votre entreprise évalue-t-elle régulièrement ses futurs besoins en matière de compétences et d'aptitudes ?

a) Non
b) Oui, mais pas régulièrement (essentiellement en cas de changement de personnel)
c) Oui, cela fait partie du processus global de planification de l'entreprise

Section III : Activités de formation de l'entreprise

Q15. En 2019, combien de salariés de votre entreprise ont participé à un ou plusieurs cours de formation professionnelle continue (qu'il s'agisse de cours internes ou externes) ? (Chaque personne ne doit être comptée qu'UNE SEULE FOIS, indépendamment du nombre des sessions de formation continue auxquels elle a participé.)

Q16. À quel type de prestataires votre entreprise a-t-elle généralement recours pour ces cours de formation professionnelle continue ?
(Sélectionnez les trois principaux prestataires de formation dans la liste suivante (catégories « a » à « h »), c'est-à-dire les plus importants en termes de nombre total d'heures de formation dispensées. Si un prestataire ne correspond exactement à aucune des catégories ci-dessous, veuillez sélectionner celle qui s'en rapproche le plus. Vous êtes priés de sélectionner au moins une et au maximum trois des catégories « a » à « h ».)

a) Service de formation interne
b) Établissements publics de formation continue (relevant de l'État)
c) Entreprises privées de formation continue
d) Entreprises privées dont la formation continue ne constitue pas la principale activité (fournisseurs d'équipement, sociétés mères/associées)
e) Organisations patronales, chambres de commerce, organismes sectoriels
f) Syndicats
g) Établissements scolaires, universités et autres établissements d'enseignement supérieur
h) Autres prestataires de formation continue (veuillez préciser) :

Q17. En 2019, quelles compétences/aptitudes visées par les activités de formation ont été les plus importantes en termes d'heures de formation ? (Veuillez sélectionner les trois plus importantes dans la liste ci-dessous.)

Domaine de compétences

A Connaissances informatiques générales
B Connaissances informatiques professionnelles
C Compétences en gestion
D Aptitude au travail en équipe
E Aptitude aux relations avec la clientèle
F Aptitude aux tâches administratives
G Compétences en langues étrangères
H Compétences techniques, pratiques ou spécifiques au poste
I Compétences de communication orale ou écrite
J Compétences en mathématiques ou en calcul
K Compétences en lecture et/ou en écriture
L Capacité de résolution de problèmes
M Autres

Q18. Certaines formations sur la santé et la sécurité au travail sont obligatoires. À peu près quelle percentage du nombre total d'heures de formation dispensées dans l'entreprise en 2019 a été consacrée à ces formations ? (%, veuillez saisir un nombre compris entre 0 et 100)

Q19. L'entreprise évalue-t-elle les résultats des activités de formation ?

a) Oui
b) Non

Q20. Quels sont les facteurs qui ont limité la prestation de services de formation aux salariés en 2019 ? (Cocher la case « Oui » si le facteur mentionné vous concerne, ou la case « Non » si ça ne vous concerne pas.)

		Oui	**Non**
A	Les qualifications, compétences et aptitudes des salariés étaient adaptées aux besoins de l'entreprise pendant la période considérée.		
B	Difficultés à évaluer les besoins de formation dans l'entreprise.		
C	Absence de cours de formation professionnelle continue adaptés parmi ceux proposés par les prestataires de formation *car leur contenu ne correspond pas aux besoins de compétences des travailleurs.*		
D	Absence de cours de formation professionnelle continue adaptés parmi ceux proposés par les prestataires de formation *car la qualité des cours de formation proposés laisse à désirer.*		
E	Absence de cours de formation professionnelle continue adaptés parmi ceux proposés par les prestataires de formation *car le nombres places disponibles dans les cours de formation proposés est insuffisant.*		
F	Charge de travail importante, qui n'a pas laissé le temps aux membres du personnel de suivre la formation continue.		
G	Coût financier élevé des cours de formation professionnelle continue.		
F	Charge de travail importante, qui n'a pas laissé le temps aux membres du personnel de suivre des cours de formation professionnelle.		
G	Efforts considérables déployés au cours des dernières années en matière de formation continue et de formation dans le cadre de l'entreprise.		
H	Compte tenu des difficultés à retenir les travailleurs recrutés, des investissements plus importants dans la formation ne sont pas rentables pour l'entreprise.		

Q21. L'entreprise a-t-elle défini une stratégie globale en matière de formation professionnelle continue de son personnel ?

a) Oui
b) Non

Q22. Votre entreprise offre-t-elle des places de formation professionnelle initiale en alternance ou des places d'apprentissages?

a) Oui
b) Non

[si Q21= (a)]

Q23. Pour quel(s) motif(s) votre entreprise offre-t-elle des places d'apprentissage/ formation initiale en alternance ? (Cocher la case « Oui » si le motif mentionné vous concerne, ou la case « Non » si ça ne vous concerne pas.)

	Motif	**OUI**	**NON**
a	Pour doter les futurs salariés de qualifications correspondant aux besoins de l'entreprise.		
b	Pour sélectionner les meilleurs apprentis afin de les recruter une fois leur apprentissage/formation initiale en alternance terminé.		
c	Pour éviter d'éventuels problèmes d'inadéquation entre les compétences des personnes embauchées et celles dont a besoin l'entreprise en cas de recrutement externe.		
d	Pour utiliser les capacités productives des apprentis dès leur période d'apprentissage/ formation initiale en alternance.		
e	Pour tirer parti du fait que les salaires/rémunérations versés aux apprentis sont plus faibles.		
f	Autres motifs (par exemple, rendre l'entreprise plus attrayante pour de nouvelles recrues potentielles).		

[si Q21= (b)]

Q24. Pourquoi votre entreprise n'offre-t-elle pas de places d'apprentissage/ formation initiale en alternance ? (Cocher la case « Oui » si le motif mentionné vous concerne, ou la case « Non » si ça ne vous concerne pas.)

	Motif	**OUI**	**NON**
a	Le nombre des candidatures pour les places d'apprentissage/ formation initiale en alternance reçues est insuffisant		
b	La qualité du travail accompli par les apprentis n'est pas à la hauteur des exigences de l'entreprise.		
c	L'entreprise ne dispose pas de suffisamment de ressources et/ou de personnel pour pouvoir former des apprentis sur le lieu de travail ou dans des centres de formation.		
d	La coopération avec les instituts de formation initiale est compliquée à cause des lourdes procédures administrative.		
e	Autres motifs (veuillez préciser) :		

Section IV : Autres aspects de la politique de l'entreprise en matière de ressources humaines (RH)

Q25. Votre entreprise a-t-elle été récemment confrontée à des difficultés de recrutement ... (sélectionnez la réponse adéquate pour chaque catégorie)

		Oui, car les personnes ayant présenté leur candidature ne possédaient pas les compétences requises	**Oui, car l'entreprise a reçu peu ou pas de candidatures**	**Non**
a	... pour embaucher des salariés à des postes exigeant normalement un diplôme ou un certificat de formation professionnelle ?			
b	... pour embaucher des salariés à des postes exigeant normalement un diplôme universitaire ?			
c	... pour embaucher des salariés à des postes qui n'exigent aucun un diplôme ou un certificat de formation professionnelle?			

Q26. S'agissant des difficultés que vous avez rencontrées pour pourvoir des postes vacants, quelles sont les compétences les plus difficiles à trouver chez les personnes qui présentent leur candidature ? (Veuillez sélectionner les trois plus importantes dans la liste ci-dessous)

Domaine de compétences

A Connaissances informatiques générales
B Connaissances informatiques professionnelles
C Compétences en gestion
D Aptitude au travail en équipe
E Aptitude aux relations avec la clientèle
F Aptitude aux tâches administratives
G Compétences en langues étrangères
H Compétences techniques, pratiques ou spécifiques au poste
I Compétences de communication orale ou écrite
J Compétences en mathématiques ou en calcul
K Compétences en lecture et/ou en écriture
L Capacité de résolution de problèmes
M Autres

Q27. Votre entreprise a-t-elle récemment éprouvé des difficultés à conserver ses salariés ?

a) Oui
b) Non

Q28. Parmi les éléments suivants, quels sont les principaux motifs pour lesquels il est difficile de recruter et/ou de retenir des salariés ? (Cocher la case « Oui » si le motif mentionné vous concerne, ou la case «Non » si ça ne vous concerne pas.)

		Oui	**Non**
A	Le niveau des salaires est plus faible dans votre entreprise que dans d'autres entités.		
B	La situation géographique de votre entreprise limite l'offre de main-d'œuvre.		
C	Les conditions de travail ne sont pas attrayantes dans votre entreprise, parce que la durée de travail est élevée et/ou les horaires de travail sont inhabituels.		
D	Les possibilités d'avancement professionnel et de formation sont insuffisantes dans l'entreprise.		
E	La concurrence des autres employeurs est forte.		
F	Il n'y a pas suffisamment de personnes intéressées par ce type de travail.		
G	Les travailleurs ne veulent pas s'engager sur le long terme vis-à-vis de l'entreprise.		
H	La rigueur de la réglementation du travail complique le processus de recrutement.		
I	Du fait de la rigueur de la réglementation du travail, il est difficile pour l'entreprise de retenir son personnel au-delà d'un certain nombre d'années.		
J	Employés sont surqualifiés pour leurs postes, ce limite leur motivation.		

K	Autres motifs (veuillez préciser) :		

Variable de contrôle :

Q29 : Votre entreprise a-t-elle été affectée par la crise liée au COVID-19 ?

i. Pas du tout.
ii. La diminution du chiffre d'affaires a été inférieure à 20 % en 2020.
iii. La diminution du chiffre d'affaires s'est établie entre 20 % et 50 % en 2020.
iv. La diminution du chiffre d'affaires a été supérieure à 50 % en 2020.