

1 Egypt's path to prosperity

Egypt is among Africa's industrial heavyweights. The first chapter of the PTPR of Egypt discusses the country's economic performance, focusing on structural determinants such as industry, trade and innovation. The country is upgrading its domestic industrial capabilities and has identified strengthened international partnerships and enhanced ties with Africa as major opportunities for advancing on its march towards prosperity. This chapter clarifies that scaling-up productive investments and innovation are needed to unlock opportunities for all.

Introduction

The Production Transformation Policy Review (PTPR) of Egypt has been developed through a process of dialogue and consensus-building, matched with peer review, designed to identify the country's strengths and areas of potential as well as barriers that need to be addressed to unlock Egypt's potential. Understanding the country's advancements and remaining challenges on its path to prosperity is not only important for Egypt – so that it can update its strategy and policies – but also offers valuable insights into other developing economies in Africa and beyond, at a time when the world economy is rethinking its developing models and looking for ways to foster development in all countries and for all citizens.

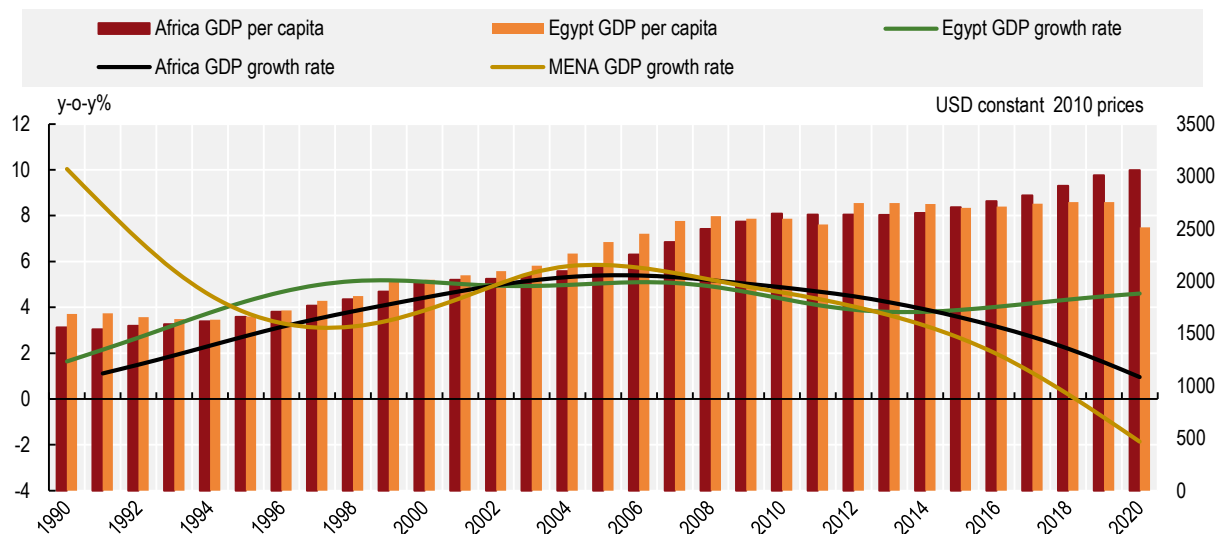
This first chapter of the PTPR of Egypt provides an overview of the country's economic transformation, with a focus on production, trade, investment and innovation. It has three sections. The first shows that Egypt has grown into one of Africa's major industrial hubs; the second discusses international ties and participation in global value chains (GVCs); and the third clarifies areas where Egypt needs to focus on innovation. Chapter 2 of this PTPR discusses strategies, policies and tools for economic transformation in Egypt, while Chapter 3 provides a snapshot on agro-food and engineering related activities. Chapter 4 focuses on the AfCFTA as an accelerator of industrial upgrading in Egypt and its partner countries.

A growing industrial hub

Egypt is one of Africa's heavyweights. The country is Africa's third-largest economy by GDP after Nigeria and South Africa, accounting for 12.5% of continental GDP [authors' elaboration based on (World Bank, 2021^[1])]. With nearly 100 million inhabitants, Egypt is also the third-most-populous country, after Nigeria and Ethiopia. Egypt had a fast-growing economy prior to the onset of the COVID-19 pandemic, and it has maintained positive growth since then. Since the 1990s, Egypt's real GDP has grown on average by 4.3% annually, higher than the African average (3.8%) and in line with that of the Middle East and North African (MENA)¹ (4.3%) (Figure 1.1). During 2015-19, just before the pandemic hit the global economy, Egypt outperformed the African average, and was the fastest growing economy on average in MENA. During 2020, Egypt's economy continued to grow by 3.6% despite the challenging global circumstances caused by the pandemic. This performance stands out even more compared to a contraction of 4% in the Middle East and 1.9% in Africa, and of 3.3% globally (IMF, 2021^[2]). Under the framework of the National Structural Reform Program (NSRP), now in its second phase (see Chapter 2), the country reacted quickly to mobilise resources to address the pandemic. GDP per capita has also grown in the past three decades. However, due to the country's rapid growth in population (which has doubled since 1985), it has grown at only half the pace of total GDP – 2.3% annually since the 1990s.

Figure 1.1. Egypt is among the fastest growing economies in North Africa and the Middle East

Annual GDP growth rate and GDP per capita, 1990-2019



Note: GDP: gross domestic product. HP: Hodrick-Prescott Filter. MENA: Middle East and North Africa. The Lambda in the HP filter has been chosen according to OECD (2016^[3]), *OECD Compendium of Productivity Indicators 2016*, <http://dx.doi.org/10.1787/pdtyv-2016-en>. Figures for Africa and MENA exclude Libya.

Source: Author's elaboration based on World Bank (2021^[1]), *National accounts data*, <https://data.worldbank.org> and IMF (2021^[2]), *World Economic Outlook Database*, <https://www.imf.org/en/Publications/WEO/weo-database/2021/April>

Over the past several decades the country has undergone a process of gradual structural transformation. A targeted push towards industrialisation began in the 1950s. Since then, industrialisation has been perceived as both a means of generating higher incomes and a way to deal with land scarcity. The majority of land area in Egypt is arid desert, with only 3.7% of the country's 100 million hectares suitable for agriculture, supported by the Nile and its Delta Valley.

The country has had at its disposal three key assets to foster industrialisation in the past few decades. Its population grew from being the 21st largest in the world in 1960 to the 13th largest today, fuelling domestic demand. It enjoyed a strategic location between Africa, the Middle East, Asia and Europe, and is home to the Suez Canal, through which about 10% of global trade passes (Hafez and Madney, 2020^[4]). And Egypt possessed an important textile industry – a staple of Egyptian production still today. Cotton production reached significant scale in the beginning of the 19th century and became the main raw material to feed several Egyptian industries that developed from the 1900s onwards, such as cotton spinning and weaving (Hawash, 2007^[5]). In the 1950s and 1960s, Egypt implemented an import substitution industrialisation strategy, in line with many developing economies around the world at the time. The government played a key role in sustaining industrialisation through several means, including strongly relying on state-owned firms (FEMISE, 2015^[6]). Many of the industries that exist today in Egypt originated during this period (Box 1.1).

Box 1.1. Public and private investments have supported industrialisation in Egypt since the 1950s

Steel

Egypt is the largest steel producer in Africa and 21st largest in the world, with 7.8 million metric tonnes produced in 2019. The country's steel industry took off with the establishment of the Egyptian Iron and

Steel Company in Egypt in 1954, which was set up to exploit the country's mineral wealth, such as iron ore deposits in Aswan and Bahriya Oasis, and limestone from Suez and Minya. Since then, private companies have entered and captured the majority of the market, such as Ezz Steel, established in 1994. In 2020, El Ezz Al Dekhela Steel, a subsidiary, was the 24th largest company in Egypt by market capitalisation (with USD 381 million) and the 17th largest in Africa in metals and mining. Other eminent steel companies in Egypt include Egyptian Steel and Garhy Steel.

Automobile

Although Egypt is a small automobile producer by global standards – it was 49th in the world in 2017, producing 16 times fewer cars than South Africa – it has several firms that engage in local assembly. The first firm to operate in the automotive sector was the state-owned NASCO (El Nasr Automotive Manufacturing Company), founded in the 1960s, which soon focused on assembling foreign cars for sale in the domestic market and ended passenger vehicle production in 2009. In the 1970s, private sector players emerged and started to gain market share, notably El Mansour Group and GB Auto. These firms mainly assemble imported complete knock-down (CKD) kits for foreign brands – such as Hyundai, Mazda and Geely – for the local market. In the 1990s, through joint ventures and wholly foreign-owned operations, foreign players started operating in auto assembly. In 2021, within the framework of Egypt's efforts to foster the localisation of electric vehicles and keep pace with the current global trends of green transition, the state-run El Nasr Automotive and the People's Republic of China's Dongfeng Motor signed a memorandum for the production of electric vehicles (EVs) in Egypt at an annual capacity of 25 000 units.

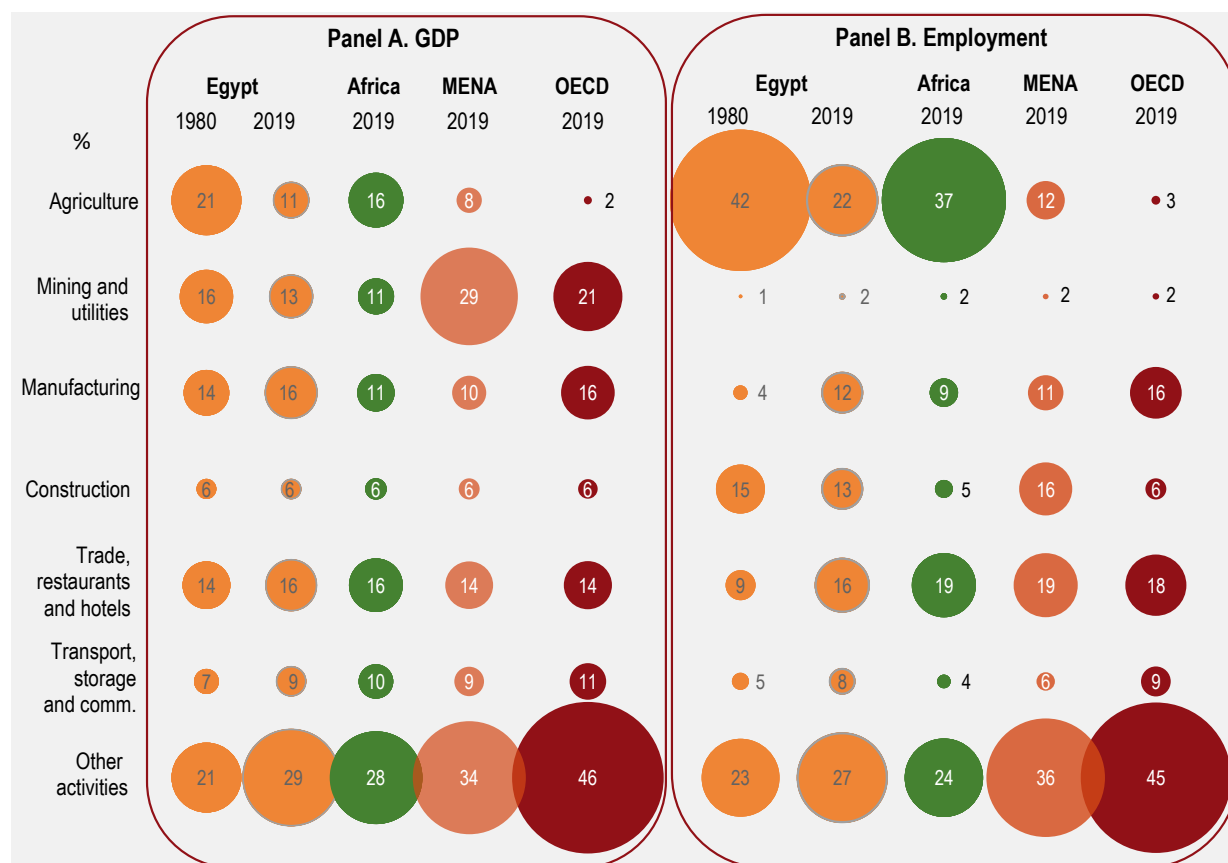
Source: El-Haddad (2017^[7]), OICA (2020^[8]), World Steel Association (2019^[9]) and African Business Magazine (2020^[10]).

By the end of the 1960s, budgetary and foreign-exchange pressures and the low competitiveness of local firms led to a rethink of development strategy in Egypt. The country started relaxing foreign trade and investment rules in the 1970s (a process known as “opening up” or *infithah* in Arabic), with the hope of attracting export-oriented investments in labour-intensive commodities, such as textiles, footwear and electronics. It set up Free Trade Zones (FTZs) that granted tax and other incentives to investors, similar to those in other developing countries, particularly in Asia, such as Malaysia and Thailand. However, protections remained for accessing the domestic market. Private firms began taking advantage of the growing local demand and a trade policy aimed at supporting nascent industries (Ikram, 2019^[11]). The low oil prices of the 1980s, combined with weak investment levels, depleted revenues and led the government to seek out a structural adjustment programme supported by the IMF and the World Bank.

Since the 1980s, agriculture's share of GDP has halved, and the sector now accounts for 11% of GDP and 22% of Egypt's employment – 30% and 40% lower than the African average, respectively (Figure 1.2). Nevertheless, these figures are higher than the average for the MENA region, where, despite large variations in the importance of agriculture due to geographic conditions and economic specialisation, agriculture accounts on average for 8% of GDP and 12% of employment. The relatively high importance of agriculture in labour absorption compared to its capacity to generate value added is explained by the prevailing dualism, with productive large farms existing side-by-side with subsistence agriculture, particularly in the Nile delta (see Chapter 3 of this PTPR for more information on agro-food in Egypt). In tandem, manufacturing and services have increased their relevance in GDP and employment. Employment in manufacturing tripled from 4% in 1980 to 12% in 2018, reaching a level that is currently about 30% higher than the African average and 10% higher than the MENA one. Egypt's performance is at odds with the continental one, as the country has not experienced a process of premature deindustrialisation as has been the case in several other countries in Africa (Tregenna, 2014^[12]). Manufacturing accounts for 16% of GDP, higher than the average for Africa (11%) and MENA (10%), although still low with respect to fast-industrialising economies such as Malaysia (22%) and Thailand (27%). Services, trade, restaurants and

hotels accounted for 16% of GDP, and transport, communication and storage for 9%, both two percentage points higher than with respect to 1980 and in line with Africa, MENA and OECD averages. Tourism has emerged as one of the most important services in Egypt, accounting for 15% of the country's GDP (directly and indirectly) and employing 9.5% of the workforce (OECD, 2020^[13]).

Figure 1.2. Composition of GDP and employment in Egypt and selected areas, by economic activity, 1980-2019



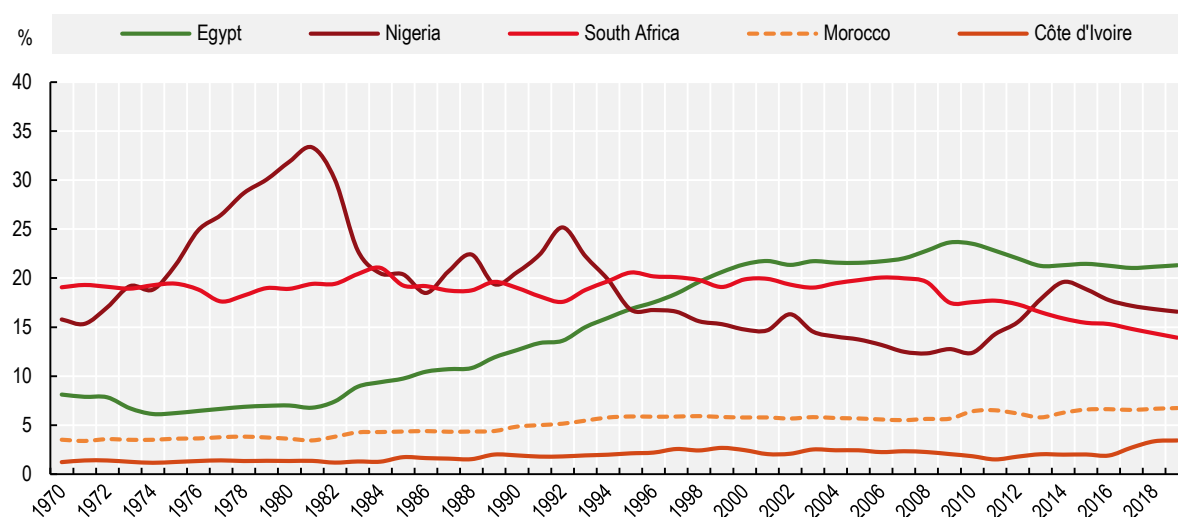
Note: Composition follows ISIC Rev.3 classification. GDP figures are calculated on constant USD 2015 prices. Employment figures are based on data from labour force surveys. For the African average of the employment structure the following countries were included (by date): 2019: Botswana, Cape Verde, Mauritius, Rwanda, Seychelles, South Africa, Zimbabwe; 2018: Burkina Faso, Chad, Egypt, Gambia, Mali, Namibia, Zambia; 2017: Algeria, Burundi, Cote d'Ivoire, Ghana, Mauritania, Niger, Togo, Tunisia, Uganda; 2016: Eswatini; 2015: Madagascar, Mozambique, Senegal; 2014: Angola, Cameroon, Comoros, Liberia, Morocco, Sierra Leone, Tanzania; 2013: Ethiopia; 2010: Benin. For MENA average: 2019: Jordan, Lebanon, Palestinian Authority, Qatar, UAE; 2018: Egypt, Oman, Saudi Arabia; 2017: Kuwait, Mauritania, Tunisia; 2015: Bahrain; 2014: Morocco, Yemen; 2011: Syria.

Source: Authors' elaboration based on UN National Accounts (2021^[14]), *Analysis of Main Aggregates* (database), <https://unstats.un.org/unsd/snaama> and ILO (2021^[15]), *Employment by activities and status* (ALFS) (database), <https://ilostat.ilo.org/topics/employment/> and OECD (2019^[16]), *Employment and Labour Market Statistics* (database), <https://doi.org/10.1787/d3186ba7-en>.

Nowadays Egypt is Africa's top manufacturer by value added. The country has tripled its share in Africa's manufacturing value added (MVA), from 7% on average during the 1970s to 22% during 2010-19 (measured in USD constant 2015 prices) (Figure 1.3). Together the top five countries in Africa – Egypt, Nigeria, South Africa, Morocco, and Côte d'Ivoire – accounted for 62% of the continental manufacturing value added in 2017-19.

Figure 1.3. Egypt is Africa's top manufacturer

Top five countries by total manufacturing value added in Africa, 1970-2019, share of total African manufacturing value added (%)



Source: Authors' elaboration based on UN National Accounts (2021_[14]), *Analysis of Main Aggregates* (database), <https://unstats.un.org/unsd/snaama/>.

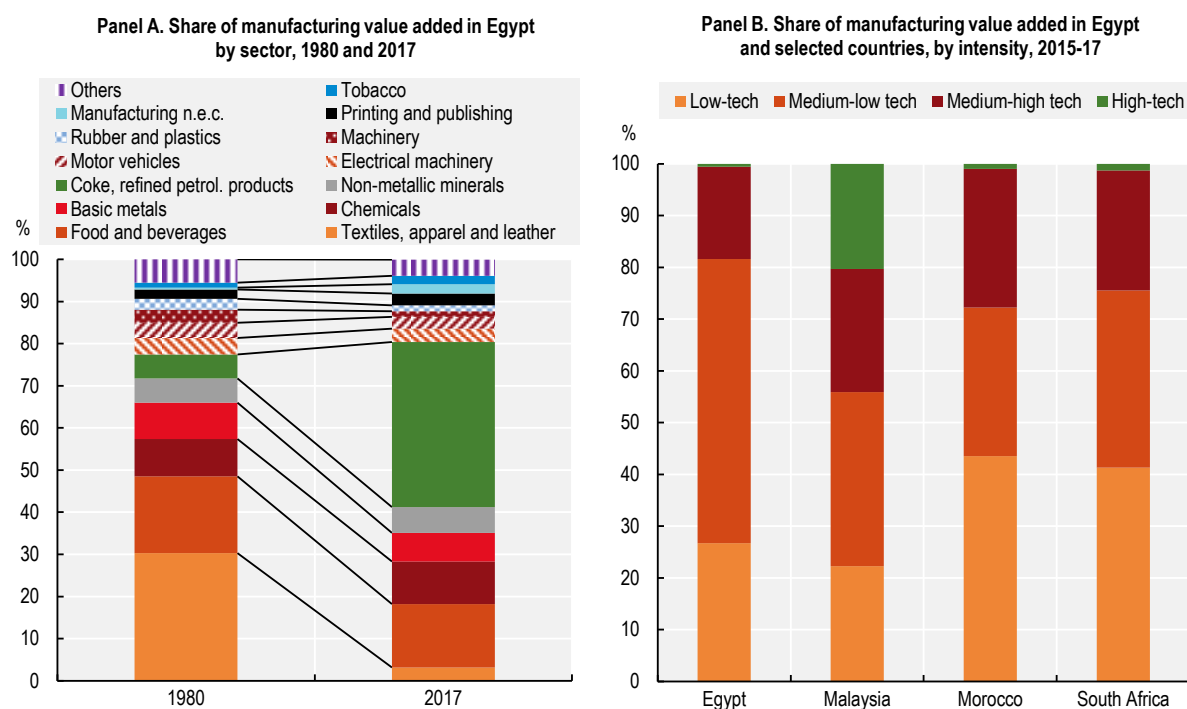
Within manufacturing – which nowadays accounts for 16% of Egypt's GDP – Egypt specialises in low-to-medium-technology industries, which account for around 50% of domestic manufacturing value added. This contrasts with Morocco, where low-technology industries account for more than 40% of domestic manufacturing value added; and with Malaysia, where high-tech manufacturing accounts for more than 20% of the domestic manufacturing value added (Figure 1.4). The government is a key player in national industrialisation. State-owned firms account on average for 9% of total manufacturing value added (excluding petroleum refining), concentrating in such industries as basic metals and transport equipment [according to data from CAPMAS (2019_[17])]. Among industrial activities, the following are noteworthy:

- **Refined petroleum:** Egypt's reliance on coke and refined petroleum products has increased over time, with the sector accounting for 39% of total MVA in 2017, up from around 5% in the 1980s. Egypt is the fifth largest producer of crude oil in Africa and has the highest refinery capacity on the continent (BP, 2020_[18]). The total oil & gas sector, including extraction, accounted for 9.7% of GDP during 2019/20 (CAPMAS, 2021_[19]). On the one hand, even though crude oil production has been in decline since its peak in the early 1990s, natural gas production tripled from 0.73 exajoules in 2000 to 2.34 exajoules in 2019. On the other hand, energy prices can cause the relative value of this sector to fluctuate greatly. Oil prices have experienced high volatility since the end of the commodity boom, and this was exacerbated by COVID-19. Average crude spot prices in 2000 for a selection of markets were around USD 28 per barrel, but by 2012 they had risen fourfold to USD 107. Since then they have been on a mostly downward trajectory – and with the pandemic reducing demand for transport sharply in the midst of global overproduction, prices reached a low of USD 21 by April 2020, although prices have recovered since to pre-pandemic levels (BP, 2020_[20]).
- **Food and beverages:** This is Egypt's top sector by manufacturing employment, accounting for 25% of total in 2017 and the second-to-top sector by MVA, accounting for 14% of the total. While Egypt faces a large trade deficit in agro-food (exports account for between 30% and 40% of

imports), the country has seen fast development of some fresh and processed fruits and vegetables, and has been expanding its local poultry, dairy and aquaculture segments.

- **Textiles:** The textiles sector continues to account for 20% of employment in Egypt, giving it the second-highest share of manufacturing employment in the country. The sector faces productivity challenges, however, as it generates only 3.7% of domestic manufacturing value added. The sector has declined over time in both absolute and relative terms: in 1980, textiles constituted the largest generator of value added (30%) and employment (37%). Nevertheless, the country is still an important continental hub. Egypt was Africa's second-largest apparel manufacturer by total MVA in 2016-18, behind Morocco [authors' elaboration based on (UNIDO, 2021^[21])]. One of Egypt's assets in this sector is high-quality cotton. Egypt supplies around 17% of global long-staple cotton (a variety that produces higher quality and offers higher strength); this is about half the output of the world's top exporter, the United States, and is also behind that of the People's Republic of China (hereafter "China"). But the area planted is falling, along with yield (Cotton Outlook, 2020^[22]). Local consumption of long-staple cotton in Egypt is about 18% of production, whereas in India and China local consumption outstrips local suppliers (ibid.). Additionally, the country has faced increasing competitive pressures from other suppliers globally and in the region (e.g. Turkey), which have captured an increasing share of the world market since the end of the Multi-Fibre Arrangement. While textiles and apparel have been hit by the COVID-19 pandemic, the conversion of production lines from textiles to healthcare goods (e.g. personal protective equipment, such as masks) in response to high demand during the pandemic has provided an alternative source of demand for some producers.
- **Chemicals:** The chemicals industry in Egypt accounts for 10% of MVA and manufacturing employment. It is also an important export sector, accounting for approximately 15.5% of total exports during 2018-20, including plastics [authors' elaboration based on (UN Comtrade, 2021^[23])]. Drawing on the country's large petroleum and gas resources, plastics, fertilisers and other petrochemicals are the main commodities produced. The plastic sector in particular uses natural gas as feedstock and produces several materials such as polyvinyl chloride (PVC), ethylene and polypropylene, with half of local production going into the packaging sector. The country relies relatively more on imports for so-called "engineering plastic" materials, such as PET, EVA, LDPE and PU (USAID SEED, 2017^[24]).
- **Engineering:** Engineering is a sector grouping used in Egypt that encompasses transport equipment, electronics and electrical (E&E), basic metals, fabricated metal products and machinery. Engineering as a whole accounts for 21% of total manufacturing jobs and 16.5% of total MVA. Within engineering, the E&E industry stands out as one of the most dynamic in Egypt's export basket, accounting for around 6% of total exports and increasing by 10.6% annually during 2010-19, 6.3 times the merchandise export average (1.7%). This performance has been bolstered by new foreign investments that look to leverage Egypt as a regional assembly hub and local brands in household equipment (see Chapter 3).

Figure 1.4. Refined petroleum makes up around 40% of Egypt's manufacturing value added



Note: Classification in Panel B based on OECD (2011^[25]), *Classification of manufacturing industries into categories based on R&D intensities*, <https://www.oecd.org/sti/ind/48350231.pdf>

Source: Authors' elaboration based on UNIDO (2021^[21]), *INDSTAT 2 2019 Revision 3* (database), <http://stat.unido.org/database/INDSTAT%20202019,%20ISIC%20Revision%203>.

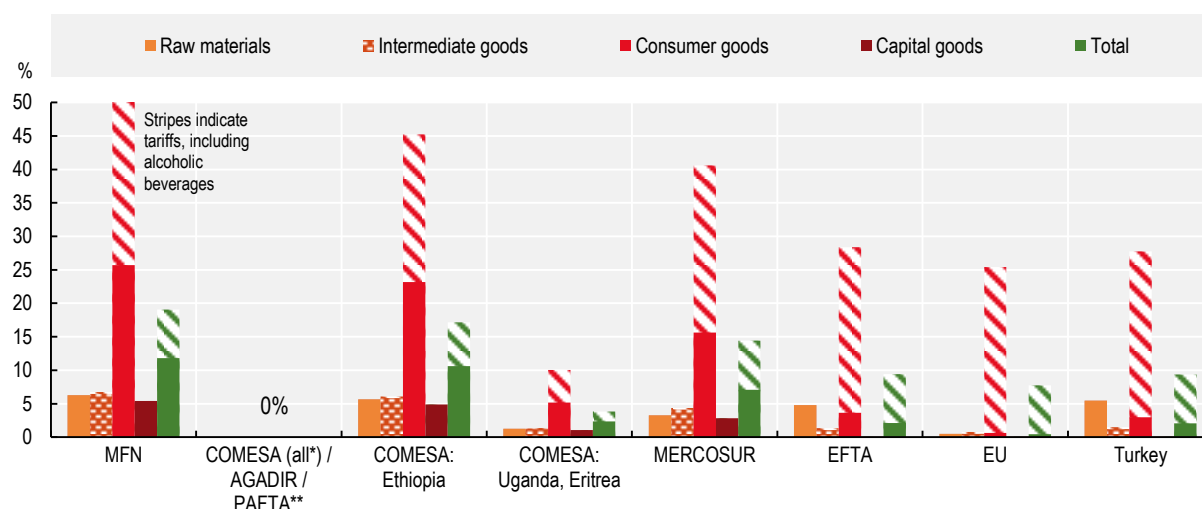
Looking for new markets, developing new partnerships

Beginning in the 1980s, Egypt embarked on a modernisation programme involving various structural reforms; however, these have not yet translated into increased local innovation capabilities or changed Egypt's pattern of integration into the world economy. Egypt's trade openness has remained relatively stable since the 1990s, with a trade-to-GDP ratio of between 40% and 50%. During 2015-19 this figure stood at 40.5% on average, lower compared to Morocco (83%) and the average for MENA (79.5%) and the OECD (57.2%). During fiscal year 2019/20, following the disruptive impact of the pandemic, the trade-to-GDP ratio fell to 34% (CBE, 2021^[26]). Exports have grown by 8.9% on average since 1990, often outperforming the MENA average, while imports have grown by 7%. However, trade has faced high volatility, rising fastest during the 2000s and then facing on average negative growth during 2009-16, when the country's overall macroeconomic performance was under pressure. Moreover, the export market is concentrated among large firms, which account for around 75.6% of total exports, whereas small firms represent only 4.8%, according to data from Egypt's General Organization for Import and Export Control. By comparison the OECD average, although not directly comparable due to difference in definitions, is around 64% for large firms and 20% for small ones (OECD, 2021^[27]). Egypt's average applied tariffs declined from 25% in 2000 to 9.6% in 2018, but they remain on average nearly double the rate prevailing in MENA (5%) and higher than in sub-Saharan Africa (7.76%). However, Egypt has put in place several FTAs that feature zero rates for tariffs on goods (e.g. COMESA and the Pan-Arab Free Trade Area), while rates with the EU and European Free Trade Area (EFTA) are close to zero, excluding alcoholic beverages (Figure 1.5), deepening integration with regional partners. This process is set to continue with the African Free Trade Continental Area (AfCFTA) (see Chapter 4). Egypt's pattern of tariffs favours local production and assembly of goods. The country's tariffs show significant escalation: tariffs are lowest for capital goods,

followed by raw materials and intermediate goods, and highest for consumer goods. The average consumer goods tariffs under Most Favored Nation (MFN) terms (excluding alcohol) is nearly 26%, while that for capital goods is 5.4%.

Figure 1.5. Simple average tariffs in Egypt, by stage of processing and trade agreement, 2017-19

Simple average of ad valorem duties, (%)



Note: * All countries except for Ethiopia, Uganda and Eritrea. **Data for 2017 only. Calculated based on average tariff rates by Harmonized System (HS) six-digit codes. Stage of processing based on UNCTAD nomenclature available at WITS (2020), reference data, <https://wits.worldbank.org/referencedata.html>. ADADIR: Arab Mediterranean Free Trade Agreement. COMESA: Common Market for Eastern and Southern Africa; EFTA: European Free Trade Association; EU: European Union; MERCOSUR: Southern Common Market; PAFTA: Pan-Arab Free Trade Area.

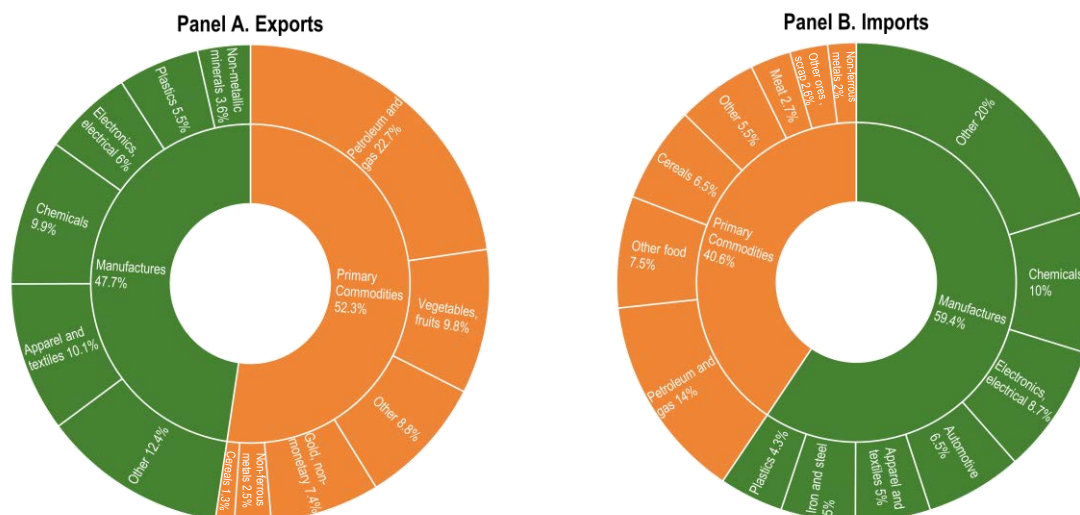
Source: Authors' elaboration based on WTO (2020_[28]), *Tariff Download Facility* (database), <http://tariffdata.wto.org/default.aspx>.

Although the liberalisation process has gone hand-in-hand with a slow diversification of Egypt's exports, these remain anchored to primary commodities. The share of primary exports has decreased from 89% of total exports in 1980, but primary commodities continued to make up over half (52.3%) of Egypt's exports to the world in 2018-20 (Figure 1.6). Petroleum and gas is the top exporting sector, accounting for 23% of total domestic gross exports. Other important primary exports include gold (7%) and fruits and vegetables (10%), which when fresh can often fetch higher prices in international markets than processed ones. Textiles, apparel and footwear account for a combined 10% of exports and chemicals for 9.9%, while other big export items include electronics and electrical (including telecommunication equipment) (6%), and plastics (5.5%). The majority of Egypt's world imports are manufactures (59.4%), including chemicals (10%), electronics and electrical (8.7%), automotive (6.5%), and apparel and textiles (5%).

Egypt possesses a relatively diverse trade network, exporting mostly to nearby countries in the Middle East, Europe and North Africa. Asia as a whole accounted for 42% of exports during 2018-20, followed by Europe (31%) and Africa (15.4%) (Figure 1.7). Within Asia, Western Asia, which includes the majority of countries in the Middle East, accounted for 30.5% of total, and other Asia for around 12%. The country's top three export destinations included the United Arab Emirates (8%) (to which the country mostly exports metals), Turkey (6.3%) (with fertilisers and other chemicals as the main export) and the United States (6.2%) (petroleum and gas). On the import side, China is Egypt's top source, with 14.8% of total imports (mainly telecommunications equipment and textiles/apparel), followed by the US (6.7%) (various products) and Saudi Arabia (6.7%) (petroleum).

Figure 1.6. 52% of Egypt's exports are commodities, 2018-20

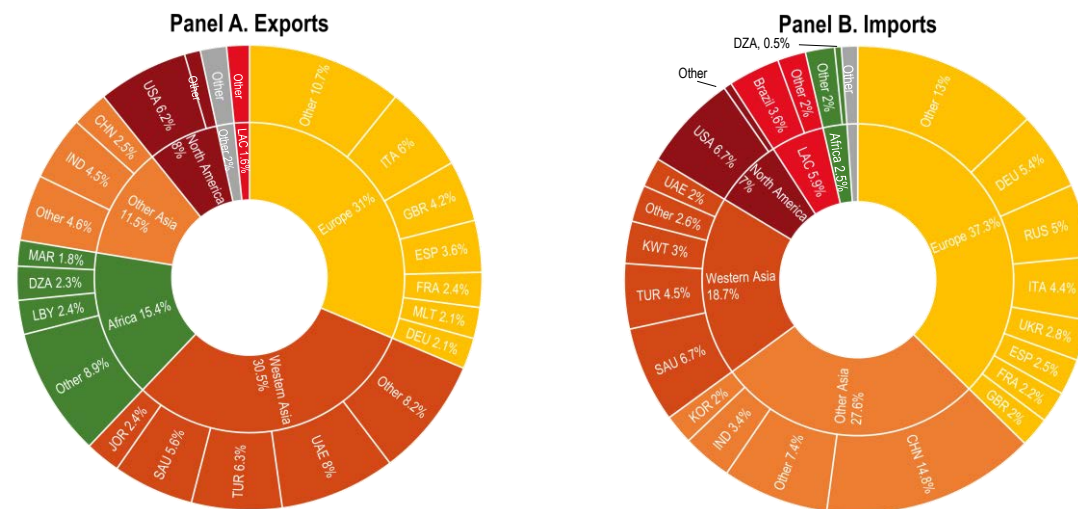
Share of total exports and imports, by category and product



Note: Based on classification of product groups and composition by UNCTAD Standard International Trade Classification (SITC) Revision 3 2-digit codes, https://unctadstat.unctad.org/en/Classifications/DimSicRev3Products_DsibSpecialGroupings_Hierarchy.pdf. Some product codes have been aggregated.

Source: Authors' elaboration based on UN Comtrade (2021[23]), Database, <https://comtrade.un.org/data>.

Figure 1.7. Egypt's exports and imports by region and partner, by share of total (%), 2018-20



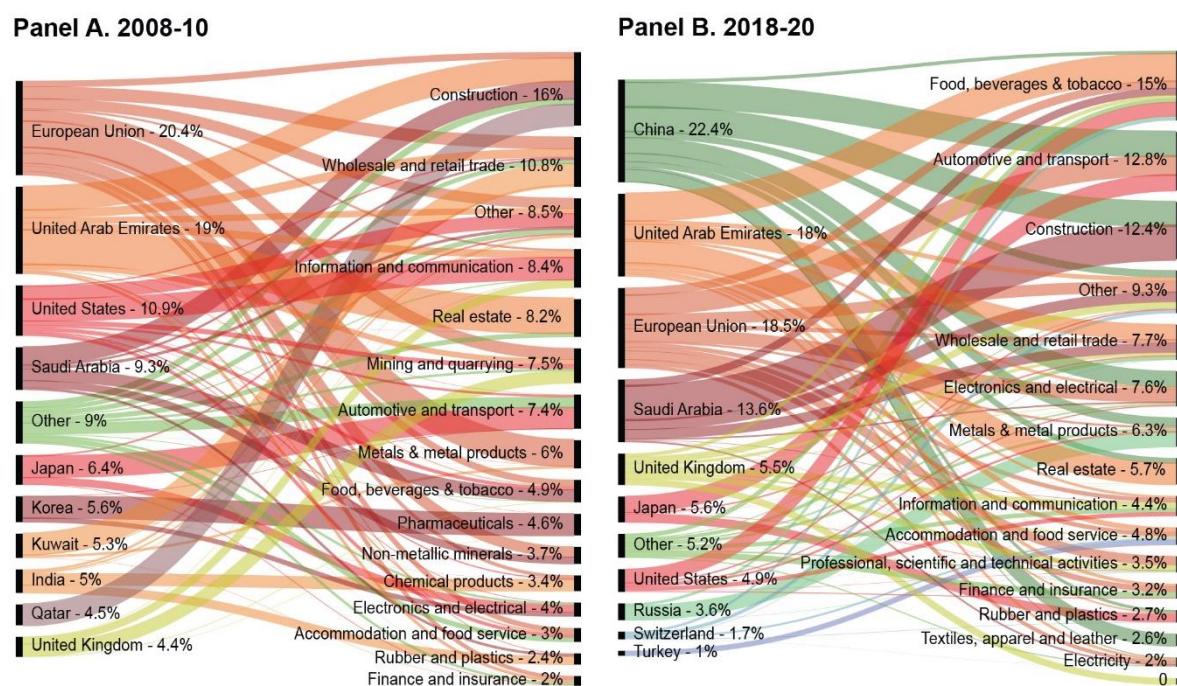
Source: Authors' elaboration based on UN Comtrade (2021[23]), Database, <https://comtrade.un.org/>.

Over the past decade, Egypt has been increasingly attracting FDI. The country's annual FDI inflows averaged 3.3% of GDP during 2017-19, nearly double the average for North Africa and Western Asia (1.7%) and higher than that of sub-Saharan Africa (1.9%) [authors' elaboration based on (UNCTAD, 2011[29])]. At the end of 2018, Egypt's FDI stock was equal to 47% of GDP, higher than in the MENA region (43%) and the OECD (40%), and lower than in the Association of Southeast Asian Nations (ASEAN) (89%) (OECD, 2020[30]). The majority of FDI transactions concerned mergers and acquisitions and re-investments related to the oil industry, while greenfield projects have been few (ibid.). The top sector for greenfield FDI

was construction, which absorbed 13.2% of the total during 2017-19, indicating the attraction of the growing domestic market for investments in commercial properties. Nevertheless, manufacturing is increasingly attracting investors' interest, with food and beverages accounting for 12.8% of total investments. Moreover, recent trends reveal that firms are choosing Egypt to produce for the African continent and the Middle East, such as in electronics (e.g. Samsung and LG, discussed in Chapter 3), and for regional technology service provision [e.g. Ericsson, which has recently set up an Artificial Intelligence and Analytics Hub (Ericsson, 2020_[31])].

New partners are also emerging for Egypt. China has surfaced in recent years as Egypt's largest greenfield FDI investor, accounting for 22.4% of total jobs created in 2018-20 (up from less than 1% during 2008-10), investing in a wide range of activities, from construction to manufacturing and real estate (Figure 1.8). Russia, too, has been investing in the country, accounting for 3.6% of total in 2018-20, up from 1.4% a decade ago. Other top investors include countries from the Middle East – such as the United Arab Emirates (18%), with investments in food and beverages, real estate and trade; and Saudi Arabia (13.2%), which is particularly active in construction. The European Union as a whole has also remained an important source for investments, accounting for 18.5% of total jobs in 2018-20, with Spain, Italy, Germany, France and Poland among the top investing countries.

Figure 1.8. New partners are investing in Egypt



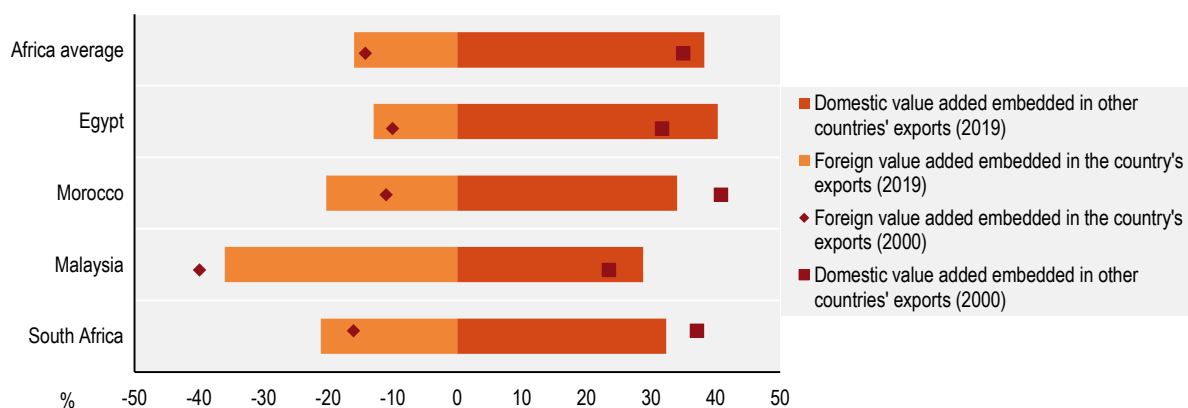
Note: Economic activities are listed according to the International Standard Industrial Classification (ISIC) rev. 4.

Source: Authors' elaboration based on Financial Times (2021_[32]), *fDi market database*, <https://www.fdimarkets.com>.

Egypt's participation in global value chains (GVCs) remains anchored in the export of primary commodities that are processed elsewhere. About 40% of Egypt's exported domestic value added was used in other countries' exports in 2019, in line with the African average (38%), based on the most recent estimates by the UNCTAD-Eora Global Value Chain Database (UNCTAD/EORA, 2021_[33]) (Figure 1.9).

Figure 1.9. Egypt participates in value chains mainly as an exporter of primary commodities

Share of foreign value added (FVA) in exports and share of domestic value added (DVA) embedded in other countries' exports, Egypt, African average and selected countries, % of exported value added, 2000 and 2019

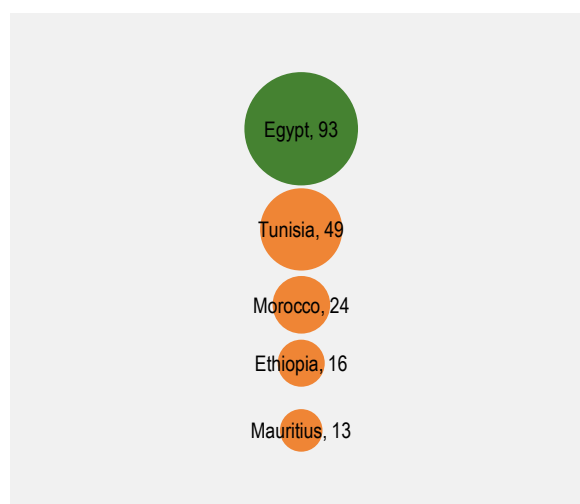


Source: Authors' elaboration based on UNCTAD/Eora (2021^[33]), *Global Value Chain Database*, <https://worldmrio.com/unctadgvc>.

The textile industry is highly integrated into GVCs, and local firms have invested in signalling their quality to capture growing market share. Egypt has the highest number of OEKO-TEX® Standard 100 certificates (93) in Africa, a label that certifies that textiles have been tested against harmful substances, nearly double those of the top continental producer in textiles, Tunisia (49) (Figure 1.10).

Figure 1.10. OEKO-TEX® standard certificates, top five countries in Africa, 2020

Number of companies that have obtained an OEKO-TEX® Standard 100 certificate, top five countries in Africa, 2020



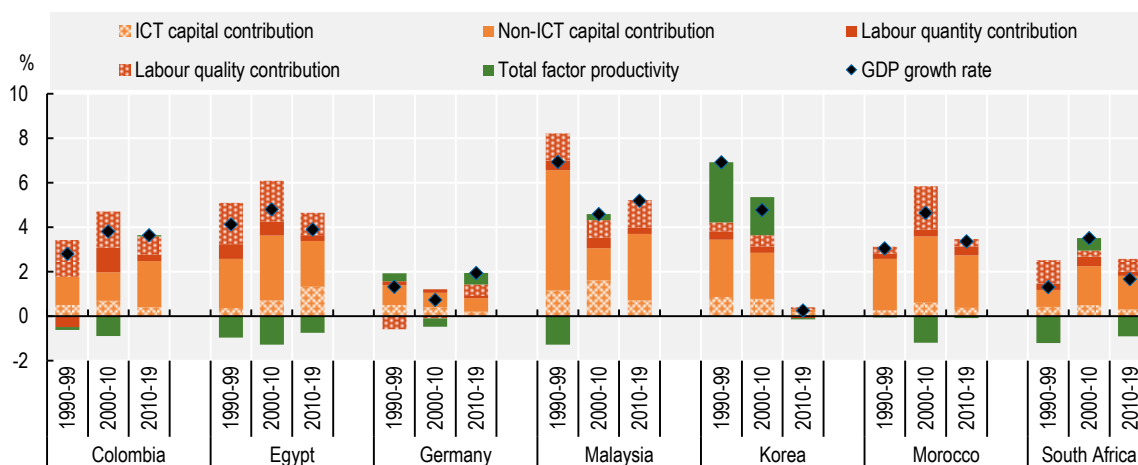
Note: Bubble size reflects number (see label) of companies that have obtained the certificate.

Source: Authors' elaboration on OEKO-TEX (2021^[34]), *Buying guide*, <https://www.oeko-tex.com/en/buying-guide>.

Egypt's performance in terms of productivity could be better. Since the 1990s, total factor productivity (TFP) has made on average a negative contribution to GDP growth, with relatively higher rates observed in the end of the 1990s, mid-2000s and since 2016. This is in contrast to countries that rely on innovation to sustain growth – such as Germany, where TFP accounted for 30% of total growth in the 2010s; and Korea,

where it reached 35-39% in the 1990s-2000s. In Egypt, growth has been driven by capital accumulation, which accounts for 87%, similar to South Africa. The addition of workers into the economy and their upskilling has also been a big driver, accounting for as much as 60% of growth in the 1990s; but this has declined over time to reach 33% since 2010 (Figure 1.11).

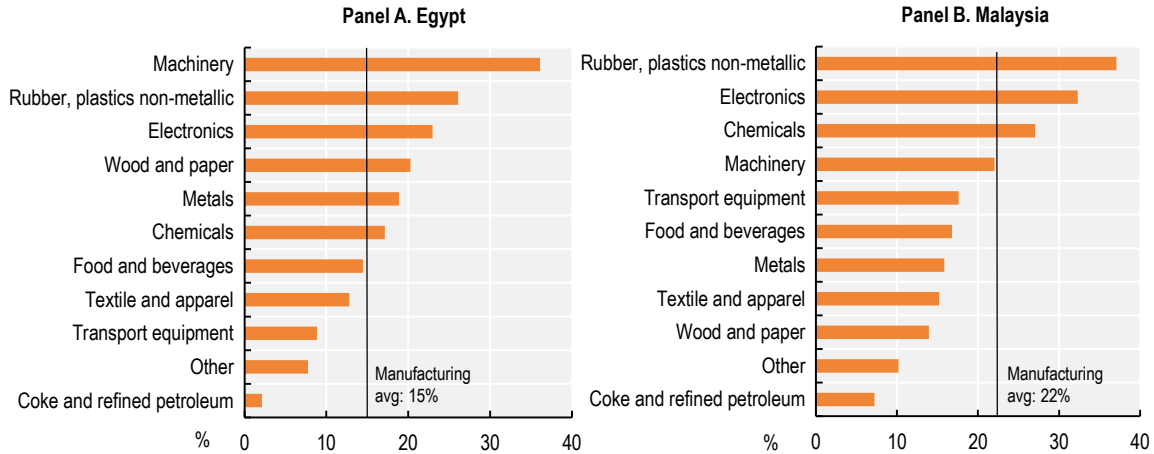
Figure 1.11. Average percentage point contributions of factors to GDP growth, selected countries, 1990-2019



Source: Authors' elaboration based on Conference Board (2021^[35]), *Total Economy Database™ (Adjusted version)*, <https://www.conference-board.org/data/economydatabase/>.

Among the several factors hindering productivity growth in Egypt, two deserve particular attention. The first is linked to investments in industrial equipment modernisation. In Egypt the gross fixed capital formation (GFCF) as a share of manufacturing value added is 15%, compared to 22% in Malaysia and an OECD average of 18%. This investment lag is mostly explained by the specialisation of Egyptian manufacturing in activities that have less scope for increasing returns and knowledge spillovers. Machinery, plastics and non-metallic minerals and electronics were the top three activities in Egypt by their share of GFCF, similar to Malaysia (Figure 1.12). In electronics, the rate was 22%, which is about 50% higher than the national average and approximately 50% lower than the rate in Malaysia (33%).

Figure 1.12. Gross fixed capital formation in manufacturing in Egypt and Malaysia as a share of value added, by sector, 2017



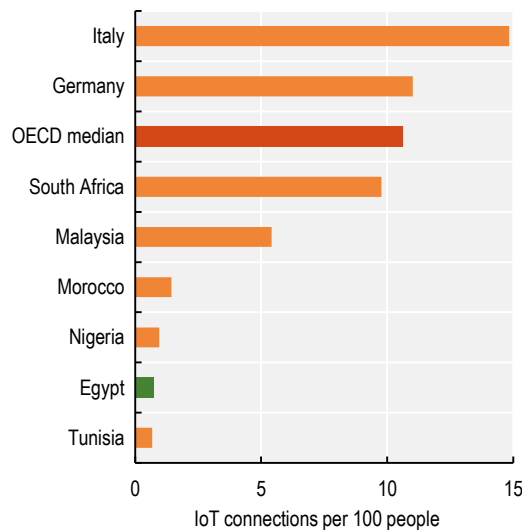
Note: The GFCF measures the investment in plant and machinery, transport equipment, software, and major improvements to existing buildings and structures, which is a proxy for modernisation of the industrial structure.

Source: Authors' elaboration based on Central Agency for Public Mobilization and Statistics (CAPMAS) (2018^[36]), *Egypt's Fifth Economic census 2017/2018*, <https://www.capmas.gov.eg> and UNIDO (2021^[21]), *INDSTAT 2 2019 Revision 3 (database)*, <https://stat.unido.org/database>.

The second factor is linked to the quality and coverage of digital infrastructure and its use by firms. Firms in Egypt lag behind global leaders in using digital technologies for business (Box 1.2). Globally there are 1.57 billion cellular Internet of Things (IoT) connections in the world, most of which (66%) are in China (GSMA, 2020^[37]). Africa is a marginal user of IoT technologies but has seen fast growth, adding 14 million such connections since 2015. In Egypt, in 2019 there were 1.5 million machine-to-machine (M2M) cellular connections in 2019, the 2nd highest in Africa after Nigeria, and 2.2 times as many as in 2015. However, in per capita terms, uptake is below the country's potential, with about 1 connection per 100 inhabitants, compared to an OECD median of 10.6 (Figure 1.13).

Figure 1.13. Number of cellular Internet of Things (IoT) connections per 100 people, 2019

Selected countries and OECD median



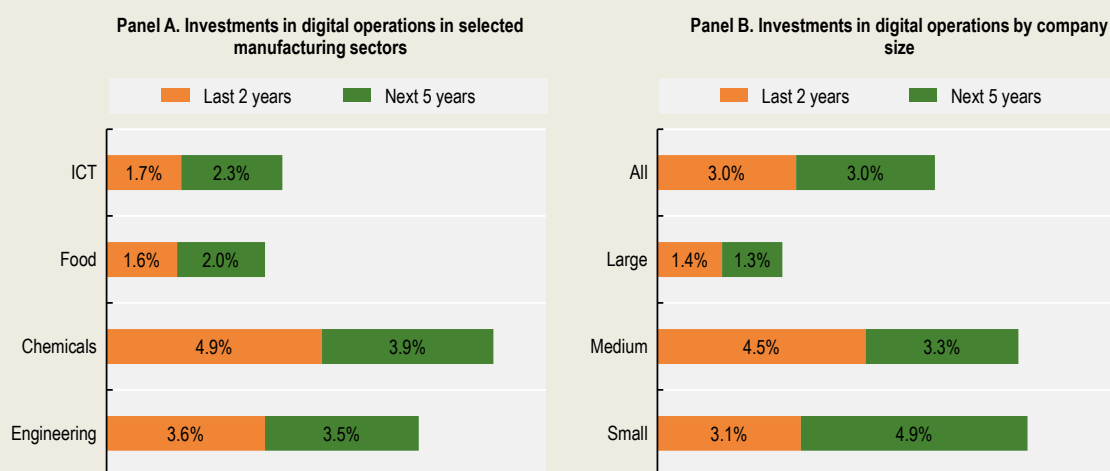
Source: Authors' elaboration based on GSMA (2020^[37]), *GSMAintelligence*, <https://data.gsmaintelligence.com>.

Box 1.2. Egyptian firms' investments in Industry 4.0 could be higher

A GIZ and MTI survey carried out by PwC showed that Egyptian firms invested an average of 3% of their revenue in digital operations during the previous two years (Figure 1.14). Chemical firms invested the highest percentage (4.9%), while food and ICT firms lagged behind (1.6% and 1.7%, respectively). Large firms invested a lower share of their revenues (1.4%) compared to medium-size (4.5%) and small firms (4.9%), which may reflect the difference in size of base revenues, as in absolute terms, large firms invest the highest sums. Firms also reported that they anticipate similar levels of investments over the next five years (3%). By contrast, in a similar survey conducted in 2016 at the global level, companies surveyed anticipated investments of an average of 5% of their revenues.

Figure 1.14. Companies' investments in digital operations in Industry 4.0

Investments as a percentage of revenues over the past two years, and anticipated investments as a percentage of revenues over the next five years, by industry and company size



Source: GIZ/MTI (2021^[38]), *Empowering Egypt's Industry: Assessing Egypt's Readiness to Implement Industry 4.0*. The study included a quantitative survey of 49 small, medium-sized and large companies in four manufacturing sectors: chemicals, engineering, food and ICT.

Scaling-up productive investments and innovation is needed to unlock opportunities for all

Egypt has major untapped innovation potential. To unlock this potential, it needs to mobilise investment and generate adequate incentives – in addition to modernising industrial equipment and improving physical and digital infrastructure.

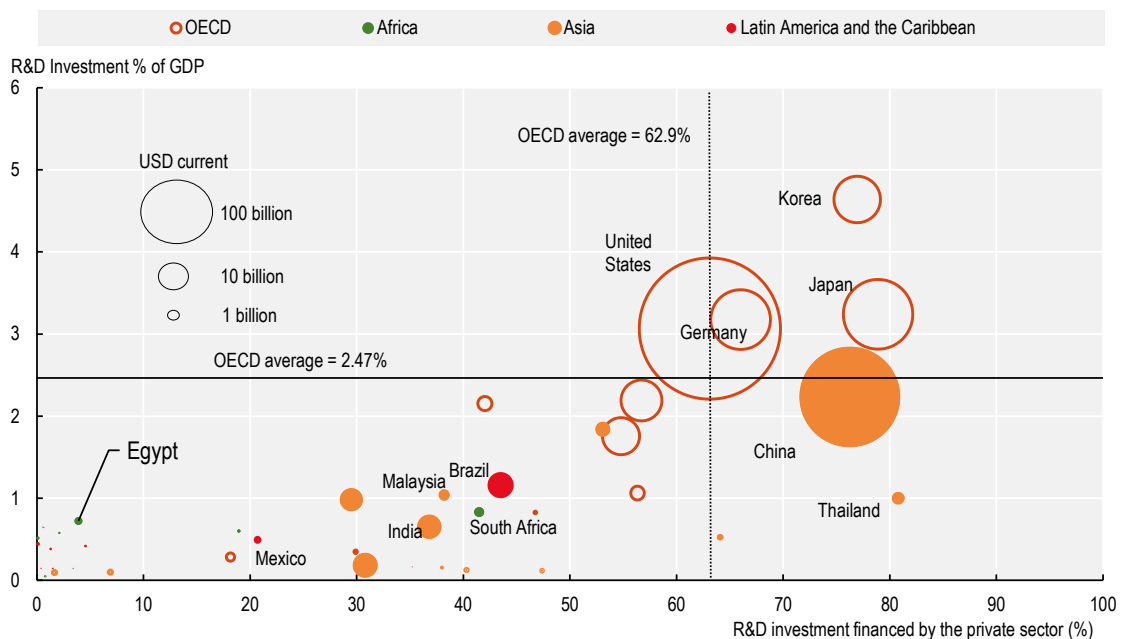
While research and development (R&D) is only one of several indicators of innovative effort, at an aggregate level (and considering the composition of the Egyptian economy), it is an appropriate indicator to assess Egypt's comparative performance. In 2014, Egypt's constitution introduced an R&D investment target of 1% of GDP. The country now invests around 0.7% of GDP in R&D, up from 0.6% in 2014, when the target was set. The current R&D intensity (R&D to GDP ratio) of Egypt is similar to Morocco (0.71%), higher than Tunisia (0.59%), lower than South Africa (0.82%), and three times less than the OECD average (2.37%) (Figure 1.15). In absolute terms, investments stood at USD 1.8 billion in 2018 (approximately

EGP 32.1 billion), a sum that is higher than Morocco (USD 0.7 billion), but small compared to emerging economies, such as Brazil (USD 22.7 billion) and Thailand (USD 3.3 billion).

Egypt's private sector is not investing in innovation on a par with their peers from other emerging economies. Firms account for only 3.9% of total R&D (amounting to approximately EGP 25 billion) – a limited share when compared to other economies in Africa, such as Morocco (29.9%), Tunisia (18.9%) and South Africa (41.5%) and far below emerging economies in Asia, such as Malaysia (38.2%) and Viet Nam (80.8%), and the OECD, where the average private sector contribution to overall R&D investment is 62.9% (Figure 1.15). In Egypt the R&D intensity of firms (i.e. total R&D expenditure over gross value added) was 0.3% in 2017, compared to 4.7% on average for the OECD [authors' elaboration on OECD (2020^[39]) and CAPMAS (2018^[36])]. Recent initiatives by Egypt to increase innovation in the private sector, including fostering start-ups, are reviewed in Chapter 2 of this report.

Figure 1.15. Egypt invests little in R&D

R&D as a share of GDP (%), share of R&D investments financed by the private sector (%), and total R&D investments (USD current), selected countries and OECD average, 2019 or latest year available



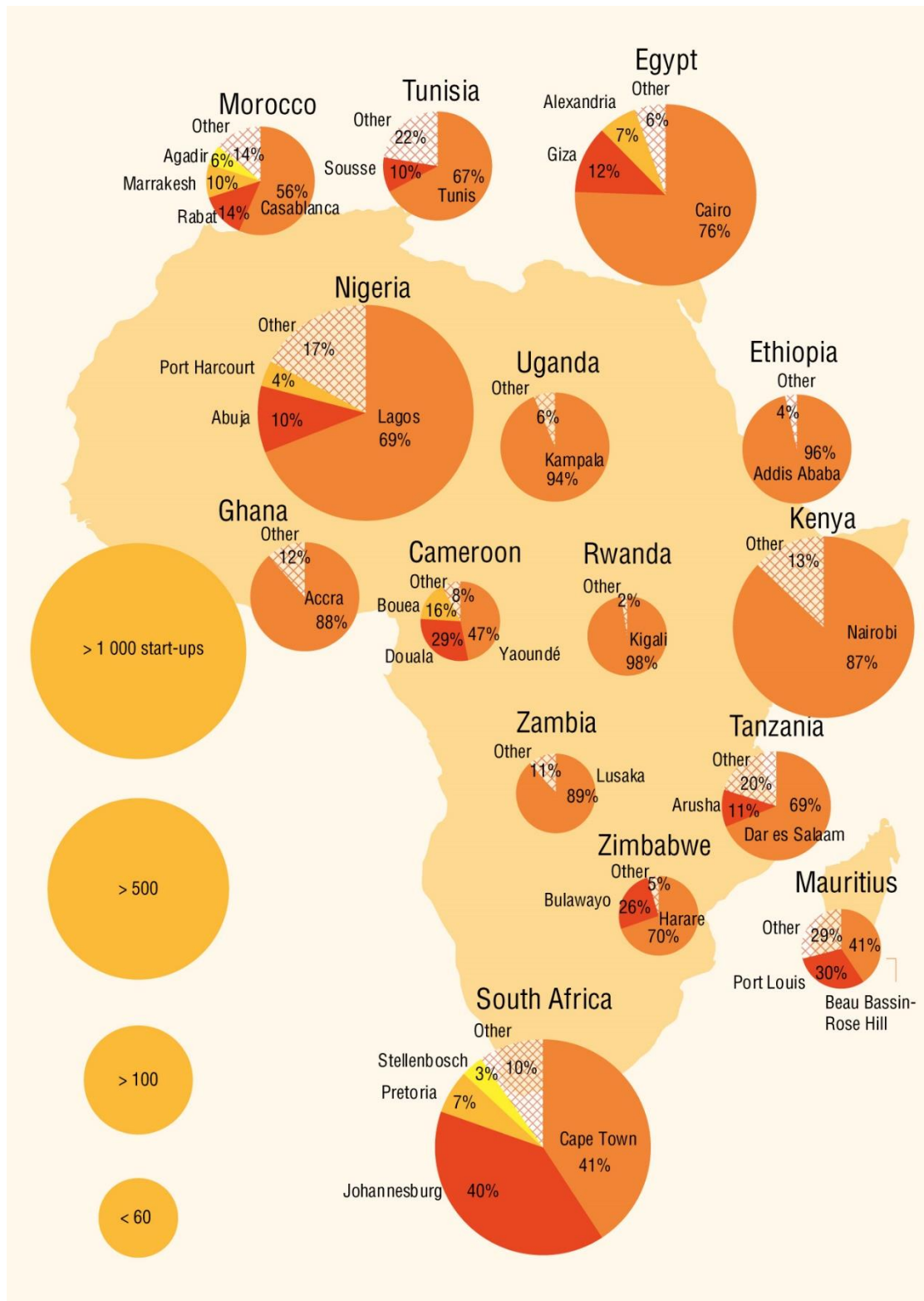
Note: R&D: Research and development.

Source: Authors' elaboration based on (OECD, 2021^[40]), "Main Science and Technology Indicators", *OECD Science, Technology and R&D Statistics (database)*, <https://doi.org/10.1787/data-00182-en>; and UNESCO (2021^[41]), *Institute for Statistics Database*, <http://data.uis.unesco.org>.

Digitalisation has fostered the creation of innovative businesses in Egypt. Although Africa remains a small global player by global standards, start-ups are gaining ground on the continent. The annual venture capital (VC) investments on the continent increased from approximately USD 54 million in 2010 to over USD 862 million in 2019, an increase of about 16 times within ten years, and about 1.3% of global total increase over the same period². Now Africa accounts for 2% of global start-ups, about half the level of Latin America and the Caribbean. Egypt is one of Africa's largest start-up hubs. The country accounts for 14% of the continent's start-ups, following Nigeria (25%) and South Africa (20.5%) (Figure 1.16).

Figure 1.16. Egypt is one of Africa's largest start-up hubs

Top 15 countries in Africa by number of start-ups, 2020

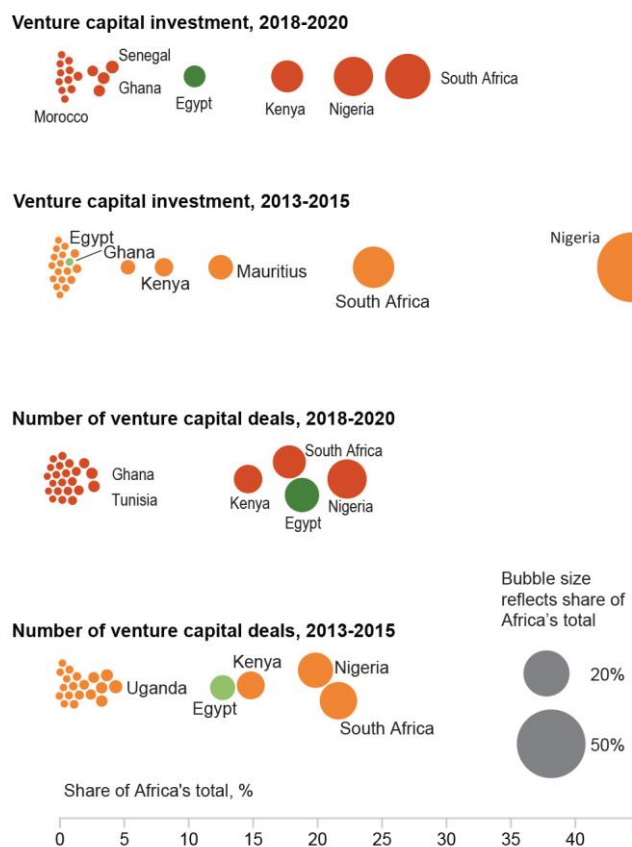


Note: Active start-ups that were founded during 2011-20.

Source: Authors' elaboration based on Crunchbase (2021^[42]), Database, <https://www.crunchbase.com>.

Egypt's role in the growing start-up scene in Africa has been increasing. Venture capital in Egypt grew from around 1% of Africa's total VC investments in 2013-15 to 10.5% in 2018-20 (Figure 1.17). The country also had the second highest number of VC deals taking place in Africa during 2018-20.³ The start-up that has attracted the largest amount of funding in Egypt so far is Swvl, an application that allows customers to book fixed rate rides on buses and vans. A growing number of investors, incubators and accelerators are contributing to the start-up scene's growing dynamism (Startup Guide, 2019^[43]). Some of the most active investors include local firms such as Flat6labs, the AUC venture lab – the first university-based incubator in Egypt – and Innoventures. Foreign VCs are also active, such as 500 Startups. International financial institutions also play a role. For example, EBRD has partnered with EU and Falak, EFG-EV Fintech, and Misr El Kheir's GESR incubator to back early-stage start-ups through its Star Venture Programme (Daily News Egypt, 2018^[44]). Government agencies, such as the Micro, Small and Medium Enterprise Development Agency (MSMEDA) and the Information Technology Development Agency (ITIDA) have also been fostering the development of the local start-up ecosystem with dedicated financing, services and infrastructure programmes (see Chapter 2).

Figure 1.17. The start-up ecosystem is developing in Egypt



Note: Countries in Africa with at least ten start-ups and one venture capital deal during 2018-20.

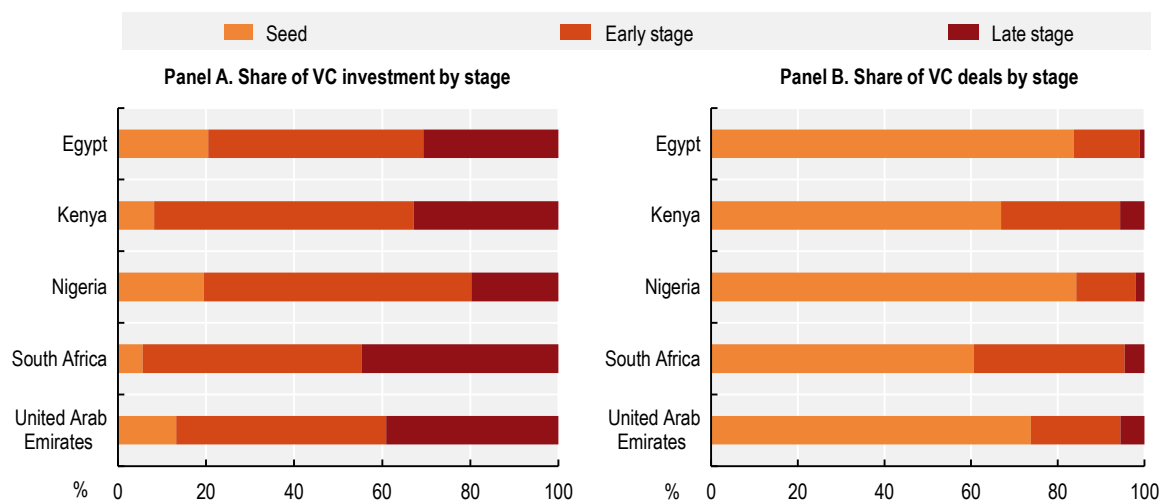
Source: Authors' elaboration based on Crunchbase (2021^[42]), Database, <https://www.crunchbase.com/>.

In Egypt, almost 83% of VC deals concern seed projects, a level similar to that of Nigeria but higher than other African start-up hubs (Figure 1.18). Approximately 15.2% of deals concern early-stage, and around 1% late-stage financing, similar to Nigeria. By contrast, in South Africa, Kenya and the United Arab Emirates, early-stage financing deals accounted for 20-35% of the total, and late-stage financing for 5-6%.

On the one hand, this indicates that Egyptian start-ups have access to the necessary capital to get their projects off the ground. On the other hand, it could also indicate that Egyptian start-ups are encountering barriers to accessing scale-up capital. In a recent survey of 200 start-ups in Egypt, 22% emphasised that access to capital is one of their key challenges (Zaki and Zeini, 2019^[45]).

Start-ups in Egypt specialise in applications (12.9% of national total), followed by e-commerce (12.5%), and information technology (8%) [authors' elaboration using (Crunchbase, 2021^[42])]. This pattern is similar to that of other countries in Africa, such as South Africa, where start-ups are attempting to leverage their large national populations to launch e-commerce, transport and e-payment applications. Other, more advanced start-up hubs, however, are tapping into the AI and digital technology potential of start-ups. For example, in Silicon Valley, most start-ups concentrate in AI (13%), apps (9%), and data and analytics (6%).

Figure 1.18. Egypt's VC investment flow into seed and early-stage financing, 2018-20

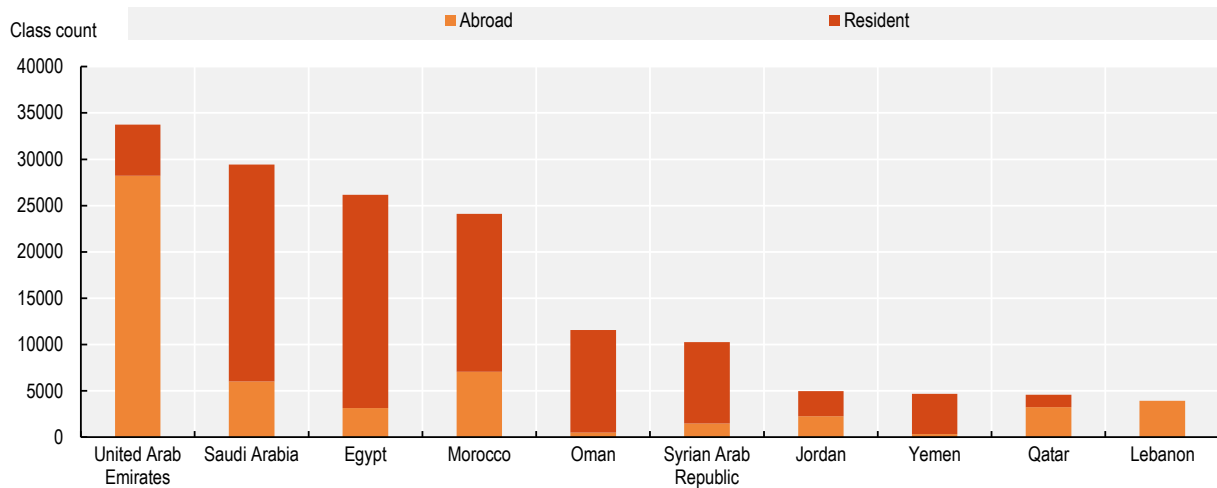


Source: Authors' elaboration based on Crunchbase (2021^[42]), Database, <https://www.crunchbase.com>.

Egypt's capacity to generate value through innovation and intangibles could be higher. Trademarks, for example, are a way to capture value from marketing new innovations by enabling consumers to identify products with a specific brand. With 26 157 trademark class count applications (equivalent count), Egypt was the third-highest applicant in the MENA region and the second-highest in Africa in 2019 (Figure 1.19). The top category for trademarks was agricultural products, similar to all other MENA countries, while it had the highest number of trademark applications for transportation and logistics, and household equipment, in the region. Nevertheless, when compared to emerging countries, it seems that Egypt has room to grow. The class count applications stood at 32 809 in Malaysia and at 84 547 in Viet Nam during the same year. Additionally, most of these applications were filed by residents in Egypt, with only a small fraction filed abroad – indicating that for Egyptian business the international market is still a low priority. For example, while Egypt has the second-most applicants in Africa for trademarks via the Madrid system (30 registrations in 2019), these were a third of those of the top applicant, Morocco (100). Fostering industrial design could also help Egyptian producers to differentiate themselves from competitors and signal quality. Egypt, with 1 750 applications (design counts), ranks 5th in terms of industrial design applicants in Africa, with about 40% the level applied for by Morocco, the continent's top applicant [authors' elaboration based on (WIPO, 2021^[46])].

Figure 1.19. Egypt is the third-ranked trademark applicant in MENA, 2019

Class count in total trademark applications, by applicant's origin (equivalent count), 2019



Note: The class count enables a harmonised comparison between filing offices as different offices have different rules on whether a filing in more than one class is possible.

Source: Authors' elaboration on WIPO (2021^[46]), *WIPO IP Statistics Data Center*, <https://www3.wipo.int/ipstats/lpsStatsResultvalue>.

Bringing firms into the formal sector will also be important for Egypt's integration into global markets and raising investments in innovation and quality. While most informal firms concentrate in services (particularly trade), about 53.7% of manufacturing firms are also informal, with the highest shares found among furniture makers (65.4%) and apparel (64.6%) and wood manufacturers (60.1%). Informal firms face obstacles in accessing financing, business support services and funds, and have fewer incentives to invest in modernising technologies (El-Fattah, 2012^[47]). They also rarely invest in R&D, accounting for 0.1% of the total in the economy, and make up only 1.8% of all investments in fixed capital formation [authors' elaborations using data from (CAPMAS, 2018^[36])]. The new Micro, Small and Medium Enterprise (MSME) Law No. 152/2020 takes a step in increasing the formalisation of firms, particularly MSMEs, by offering incentives to firms to do so (see Chapter 2).

Unleashing Egypt's innovation potential will be key to opening up opportunities across all the country. So far, economic concentration has remained excessively high. The Greater Cairo region, which includes the neighbouring governorates of Cairo, Giza and Qalyubia, accounts for about one-fourth of Egypt's population of approximately 100 million people, and nearly half of the country's GDP (48.7% in fiscal year 2015-16), followed by Greater Alexandria (Alexandria, Beheira and Matrouh) (14%) (Table 1.1). The economic concentration around Cairo is also reflected in the distribution of start-ups within Egypt: the Cairo greater metropolitan area accounts for 90% of all the country's start-ups. Better connecting start-ups to local production ecosystems (such as ports, oil or agro-food hubs) would help boost the country's innovative potential.

Table 1.1. Greater Cairo accounts for 49% of Egypt's GDP, 2018

Governorates	Share of GDP*	Share of population	No. of businesses	Businesses per 100 people
Greater Cairo				
Cairo	37%	10%	483 610	4.9
Giza	8%	9%	347 984	3.9
Qalyubia	3%	6%	237 566	4.1
Greater Alexandria				
Alexandria	8%	5%	287 480	5.4
Beheira	3%	7%	214 412	3.3
Matrouh	3%	1%	18 876	4.0
Delta				
Dakahliya	4%	7%	320 197	4.8
Gharbia	3%	5%	215 371	4.2
Kafir El Shiekh	2%	4%	117 373	3.3
Menoufia	2%	5%	152 005	3.4
Damietta	2%	2%	130 744	8.4
Suez Canal				
Sharqia	4%	8%	284 664	3.8
Port-Said	1%	1%	34 172	4.5
South Sinai	1%	0.1%	6 545	6.1
Suez	1%	1%	32 037	4.2
Ismailia	1%	1%	55 754	4.1
North Sinai	1%	1%	6 627	1.4
North Upper Egypt				
Minya	2%	6%	146 714	2.5
Fayoum	2%	4%	156 192	4.1
Beni Suef	1%	3%	88 829	2.7
Central Upper Egypt				
Asyut	2%	5%	95 837	2.1
New Valley	0.1%	0.3%	8 945	3.6
South Upper Egypt				
Red Sea	2%	0.4%	18 058	4.8
Sohag	2%	5%	115 958	2.2
Qena	1%	3%	81 295	2.4
Aswan	1%	2%	44 035	2.8
Luxor	0.3%	1%	41 282	3.2
Total	100%	100%	3 742 562	100%

Note: *Data for fiscal year 2015/16. Values in current USD million.

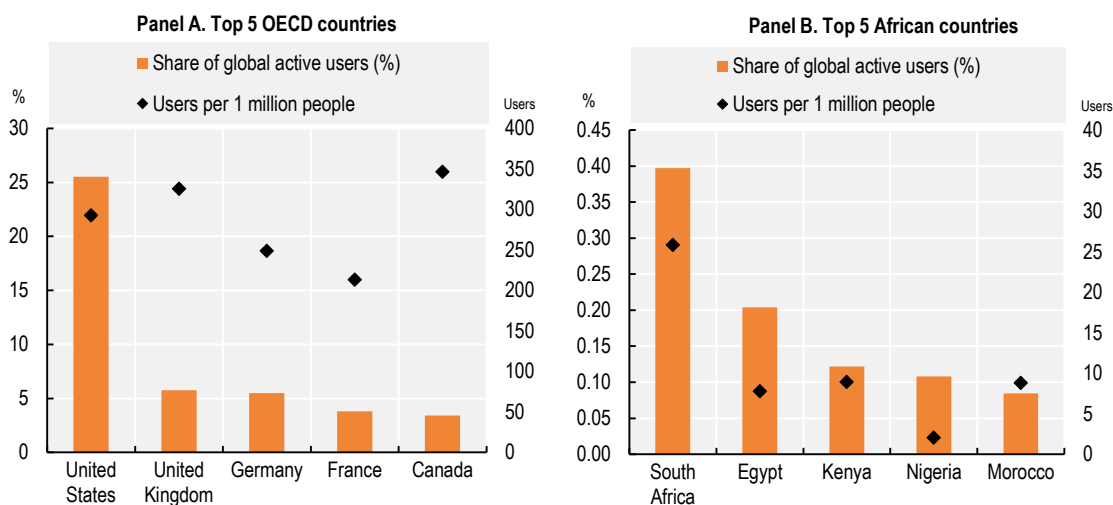
Source: Authors' elaboration based on CAPMAS (2018^[36]), *The results of the fifth economic census 2017/2018*, https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=7195&Year=22986 and Ministry of Planning and Economic Development (2021^[48]), *National accounts data*, <https://mped.gov.eg/Analytics?id=61&lang=en>.

Egypt faces the pressing challenge of making its growth path a job-rich one – especially for youth and women, who continue to represent a large share of Egypt's untapped talent. The labour participation rate among women in Egypt is 18.4%, the second-lowest rate in Africa, just above Nigeria (15.1%) and below Morocco (24.7%). In addition, the unemployment rate for women (21.3%) is three times higher than for

men (6.8%), according to ILO data. Youth unemployment reached almost 25% in 2019, according to World Bank data, 2.5 times the average for all ages.

Innovation and diversification are key gateways to generating new, well-paid jobs. But to unlock these gateways, Egypt needs also to address a two-fold capabilities challenge: (a) offering high-quality training in advanced, technologically-related areas (such as AI, digital technologies and other areas increasingly demanded by global markets); and (b) at the same time ensuring employment opportunities for these skilled workers to limit “brain diaspora”. User statistics from Github, a widely-used website for open-source software development, offer an estimate of the talent pool in software engineering, one among the key skills for future competitiveness across all industries. Africa lags behind in this area, accounting only for 1.32% of global Github users, versus 37% for Europe and 23% for Asia (Figure 1.20). Egypt has the second-largest software talent pool on the continent, accounting for 0.2% of global talent and 15% of talent in Africa (following South Africa, which accounts respectively for 0.4% of global talent and 30% of African talent). However, Egypt’s talent pool is substantially below its potential, with 8 users per 1 million people, compared to 26 in South Africa. Developing and implementing an industrial and innovation strategy that generates jobs in high-skill professions is imperative. According to data gathered by LinkedIn in partnership with the World Bank, much of the talent that leaves Egypt is specialised in “disruptive” skills that are key for Industry 4.0, such as artificial intelligence, and other tech skills, such as mobile design and hardware engineering. The net loss is estimated at 221 people per 10 000 in disruptive tech skills during 2017-19, compared to 93 for Malaysia and a net gain of 296 people per 10 000 for Germany (Figure 1.21).

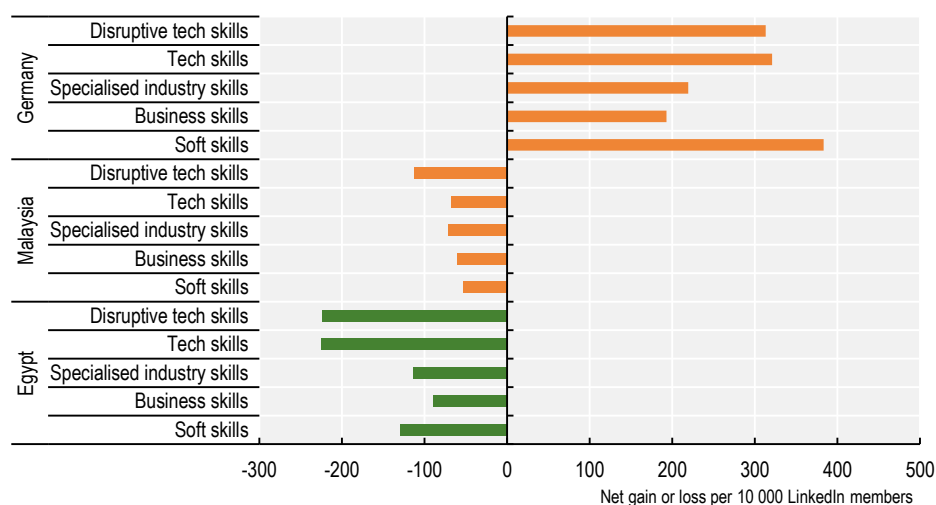
Figure 1.20. Github users in the OECD and Africa, by share of total, 2019



Note: Data were generated through a BigQuery based on code by Hoffa (2017^[49]), “The digital divide: Software developers in Africa through GitHub and Stack Overflow stats”, <https://medium.com/@hoffa/the-map-i-got-for-africa-8c8a958c686d>.

Source: Authors’ elaboration based on data from Github Archive and GHTorrent.

Figure 1.21. Net skills gains or losses for Egypt, Malaysia and Germany, by skills group, 2017-19



Note: Skills categories are based on LinkedIn-World Bank classifications. Data represent the net gain or loss of members from another country with a given skill divided by the number of LinkedIn members with that skill in the target (or selected) country, multiplied by 10 000.

Source: Authors' elaboration based on World Bank and LinkedIn (2020_[50]), *World Bank LinkedIn Digital Data for Development*, <https://linkedindata.worldbank.org/data>.

Box 1.3. Responding to the COVID-19 crisis is opening up opportunities for innovation

The unfolding of the COVID-19 pandemic has shown that although Egypt possesses some capabilities in innovation, these would need to be scaled up to diffuse benefits to the overall economy. For example, Egypt was among three countries in Africa that developed a diagnostic test for COVID-19 locally together with Nigeria and South Africa (OECD/ECA, 2020_[51]). The reaction to the crisis has also channelled new investments in medical devices and equipment, as well as new tele-health apps that can sustain healthcare systems during periods of lockdown and reduce the need for patient contact. In Africa, venture capital investments in healthcare and biotech more than quadrupled from USD 7.9 million to USD 36 million (Crunchbase). In Egypt, of ten start-ups that moved from seed to early-stage financing in 2020, two involved healthcare apps. These were Shezlong, an online mental health platform that connects patients to therapists via video visits; and Chefaa, a patient-facing medicine delivery platform.

Conclusions

Egypt is an important economic hub in Africa. Despite growing openness, Egypt's pattern of integration into global trade has remained largely unchanged since the 1990s. The progress made by Africa with the entry into force of AfCFTA is opening up new opportunities for Egypt to continue advancing on its march towards prosperity. Achieving job-rich growth and transforming its economy to be more innovative and to benefit more from advanced technologies – not only as an end-use market, but also as a knowledge and technology creator – are among Egypt's top strategic priorities for the future, and AfCFTA could help facilitate Egypt's efforts in this regard. The PTPR of Egypt, benefiting from peer review from Italy and Malaysia, identifies potential opportunities by analysing the current strategy for economic transformation (in Chapter 2 of this report), discussing opportunities in two specific industries (agro-food and electrical engineering and electronics, Chapter 3) and by examining the opportunities arising from AfCFTA (Chapter 4).

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Notes

¹ For the purposes of this chapter, the Middle East and North Africa include the following countries: Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestinian Authority, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates and Yemen.

² Measuring start-up development is not without difficulties. Despite increased interest in start-ups by policy makers, experts and the media, there is no single definition of what a start-up is. Official internationally comparable databases, notably the OECD SDBS database, exist for enterprise births and young enterprises (e.g. less than 2 years old), but not for start-ups. Investors’ platforms, such as Crunchbase and Angel Invest combine self-reporting with smart algorithms that collect public information from the web. These databases, even if coverage is not uniform across countries, provide realistic estimates of start-ups dynamics. This chapter uses data from Crunchbase, a commercial database on technology-related companies and financing that is widely used by investors, entrepreneurs and researchers.

³ Estimates highly depend on methodology used. Partech (2021_[52]), which uses a different methodology to this report, estimates that Egypt attracted the highest number of deals in 2020.



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