



Jordan's Recent Economic Performance: Implications for Future Growth, Investment, Refugee Policy and Refugees



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1. Introduction

The past six years have been transformative for the Hashemite Kingdom of Jordan. As a result of the civil war in Syria, the country has absorbed more than 660,000 Syrian refugees according to the United Nations Refugee Agency; while the official census, which was conducted in December 2015, estimates the number of Syrians present in the country much higher, totalling 1.265 million, or approximately 13 per cent of the country's total population.¹ In February 2016, the landmark Jordan Compact was signed between Jordan and a range of donor countries and international organisations. The agreement — one of the first of its kind — took a new and innovative approach to humanitarian response, bringing a diverse set of actors into a multiyear agreement aimed at providing tangible economic outcomes for both Syrian refugees and the Jordanian host community.

This series of pivotal events must be understood against two, largely unrelated, narratives that are at the core of the country's modern economic history. The first is Jordan's longstanding goal of positioning itself as a high-value added, knowledge-based economy within the West Asia - North Africa region. The second is the apparent divergence between investment and employment growth that has been recently noted in five industrial sectors, according to Jordan Chamber of Industry data. The positioning of the two narratives vis-à-vis the Syrian refugee crisis presents a new set of questions for Jordan, as well as the international financial institutions whose job it is to advise Jordan on its medium-to-long term economic growth strategy. This report provides a first step towards untangling these questions and sets an agenda for additional research that we hope will inform the future designation of priority sectors and investments.

¹ Ghazal, Mohammad; 'Population stands at around 9.5 million, including 2.5 million guests,' *The Jordan Times* (Amman), 30 January 2016.

2. The Jordan Compact and Employment Creation: Towards a New Paradigm

As at June 2017, a total of 660,785 Syrian refugees had registered with UNHCR. Of this number, a total of 518,454 live in urban areas, outside of established camps. In April 2016, the Government of Jordan embarked on a programme to create opportunities for, and grant formal working rights, in specific occupations to registered Syrian refugees in exchange for increased access to European export markets. Since that time, Jordan's Ministry of Labour has granted 50,909 work permits to Syrian refugees across the agriculture, construction, manufacturing, wholesale and retail trade, food and beverage and other sectors.

Jordan's commitment to create opportunities in the formal employment sector for Syrian refugees was, at least in part, a response to calls to reconceptualise the refugee crisis as an opportunity to develop a high value-added manufacturing sector.² In December 2015, Jordan's Minister of Planning and International Cooperation Imad Fakhoury stressed the need for a "holistic approach...that gets [Jordan] out of this crisis to reach a win-win situation that would help the Kingdom economically, create job opportunities and, at the same time, alleviate the refugee burden on the international community."³ The West Asia – North Africa (WANA) Institute made a significant contribution to the discussion, publishing a white paper for the Ministry of Planning and International Cooperation on the Jordanian host state economy and conducting a viability assessment on Syrian refugee labour integration in Jordan in April 2016. In the year following Jordan's landmark decision to grant worker rights to Syrian refugees, the Ministry of Labour has taken specific steps to encourage employment in the manufacturing as well as other sectors.

Following Jordan's adoption of the refugee economic inclusion policy, international organisations and NGOs have begun to develop programmes addressing the issue of work and livelihoods opportunities for Syrian refugees. Many entities working in this space have undertaken an approach similar to what the British Department for International Development (DFID) refers to as the 'Sustainable Livelihood Framework.' According to DFID's definition, "A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base."⁴

As originally conceived by DFID, livelihoods approaches to job creation place people, rather than resources, at the centre of the framework and seek to convert the strengths of those people into livelihood outcomes. Livelihoods approaches focus on activities that can be harnessed in order for an individual to earn an income for his or her household. Positive livelihood outcomes often include improved food security and more sustainable use of natural resources. Examples of

² 'Providing 200,000 Work Opportunities for Syrian Refugees in Jordan: A Viability Assessment.'

³ Ketam Malkawi, 'Integration of Syrian refugees in workforce hinges on new investments,' *The Jordan Times* (Amman) 21 December 2015.

⁴ DFID's Sustainable Livelihood Approach and Its Framework.

livelihoods approaches at work in Jordan include Jordan Lens' training of local community members to serve as adventure guides for the Jordan Trail; improvement of the quality and productivity of olive production in target governorates, and supporting a cluster of community-owned and managed enterprises that serve the tourism sector. The International Rescue Committee has highlighted the case of a female Syrian refugee-turned-business owner who was able to develop a successful beekeeping and honey business thanks to the IRC's training and small-business grant programme. A range of other NGOs have developed livelihoods programmes around home-based businesses, enabling an individual or group of individuals, often female, to produce marketable goods out of the home.

Livelihoods approaches tend to favour micro- and small enterprises and are more oriented towards enhancing existing assets by strengthening horizontal and vertical linkages than they are oriented towards creating new job opportunities. In doing this, they aim to maximise the asset base that is already present within a community while reducing the vulnerability of those individuals who extract their living from those assets. Livelihoods approaches tend to channel smaller amounts of donor financing into their target enterprises than would a larger-scale investment programme, while also seeking to integrate their target enterprise into the local business eco-system. This distinction is emphasised here because the kinds of larger-scale investment and job creation programmes that could be advocated for within the Jordan Compact framework represent a significant departure from the customary livelihoods approach.

Another common policy approach to job creation is the typical supply-side versus demand-side analysis framework. Within this context, the supply-side seeks to measure the total amount of goods and services that an economy is capable of producing. Related analysis may consider the set of sectors that have been selected as strategic and their ability to absorb a set of workers with the relevant skill sets. The demand-side is based on the Keynesian doctrine that consumers and their demand for goods and services is the fundamental driver of growth and job creation in an economy. Analysis along these lines focuses on job creation projections that are based on anticipated levels of consumption. In April 2016, the WANA Institute carried out a viability assessment on Syrian refugee labour integration in Jordan that employed this framework, with the supply-side assessment consisting of aligning Syrian refugee skillsets with open occupations in strategic sectors and the demand-side assessment consisting of matching open occupations with job creation forecasts produced by the Government of Jordan. Notably, the analysis conducted on the demand-side of this framework is based on the status quo investment scenario and does not assume an injection of capital to stimulate production or consumer demand.

A widely debated but less formulated approach to employment generation is what some economists call an investment-led approach. An investment-led approach to job creation stands in contrast to what economists label a 'consumption-led' approach and emphasises investment in long-term technology projects and other wealth generation initiatives. Such an approach has been scantily considered in the context of foreign assistance; it is more often utilised in high income economies where a large tax base or revenues from the commercialisation of natural resources generate capital for state-sponsored investment programmes. In this regard, former World Bank economist, Jeffrey Sachs, recently called for a shift to investment-led growth

positing that traditional stimulus packages are too oriented towards the short-term and do nothing for long-term growth.⁵

The changing humanitarian assistance architecture, as illustrated in the Jordan Compact, provides a unique opportunity to apply such an approach to a foreign assistance and refugee host state context. The thought leaders and implementers behind the Jordan Compact continually call for the reconceptualisation of the Syrian refugee crisis as a development opportunity by which Jordan can attract new investment whilst creating jobs for Jordanians and Syrian refugees. It is feasible that within the framework of the Jordan Compact, donor assistance could be packaged and channelled into a series of private sector investment funds designed to stimulate the productivity gains that would generate long-term employment growth. However, little exploratory work has been done with regard to the sub-sectorial investment needs of the private sector and the proper vehicle(s) that could deliver such investments.

This report provides a brief assessment of the recent investment trends and performance of various sub-sectors within Jordan's agricultural and industrial sectors, followed by an analysis of the implications these trends present for future growth, investment, refugees and refugee policy. We consider the growth trends of key sectors in the context of the Jordan Compact in order to highlight both the challenges and additional research necessary for private sector investment and employment creation within this new paradigm.

⁵ Sachs, Jeffrey, 'Why we need to shift to investment-led growth: Sachs,' <http://www.cnbc.com/2014/01/22/why-we-need-to-shift-to-investment-led-growth-sachs.html>

3. Jordan's Knowledge Economy Strategy

Jordan has long envisioned its future as a knowledge-based economy. Economic development strategies have continually stressed education and prioritised skills-based sectors such as healthcare, life sciences, renewable energy, and information communications technology (ICT). Jordan's long-established pharmaceutical sector dates back the 1960s and enjoys certain competitive advantages over its counterparts in the region.⁶ Its positioning as a medical tourism destination is well-known; the World Bank ranked it the top medical tourism destination in the region with revenues from this sector exceeding 1 billion US dollars in 2007.⁷

There is extensive literature on the relationship between productivity gains and employment generation. A January 2013 report by the IFC highlights the trade-off between job and value-added creation. According to this study, macroeconomic case studies from both Jordan and Ghana have found that for every million US dollars of investment, sectors such as agribusiness and trade generate high numbers of low-value added jobs, while other sectors that generate less overall employment create jobs in which there is higher value-added per worker.⁸ This trade-off poses a challenge to policy makers and donors whose task it is to channel investment towards the knowledge economy while simultaneously prioritising job creation in the short-term.

However, in the medium-to-long term, there are exceptions. When investment leads to a productivity gain, and that productivity gain brings about a drop in the cost of production, the target firm can then produce more goods for a more competitive price. Such a gain generates employment when there is sufficient demand for the given product — either domestically or externally — leading the company to hire additional workers to meet that demand.⁹

The IFC discusses four types of job creation: direct jobs, indirect jobs, induced jobs, and second-order growth effect jobs. Direct jobs manifest in the company that has experienced the productivity gain; indirect jobs occur among the company's suppliers and distributors, and induced jobs occur as a result of increased spending by direct and indirect employees of the company that has benefitted from the productivity gain.¹⁰ Jordan stands to gain from investments that facilitate productivity gains, as increased productivity, under adequate market conditions, has the potential to create a range of direct, indirect and induced jobs.

However, the focus on skills-based, high value-added sectors comes with certain limitations. Since the inception of the Syrian refugee crisis in 2012, Jordan has absorbed more than 290,000 working-age individuals, many of whom lack the skills necessary to compete in a knowledge-based economy. This influx of relatively unskilled labour comes on top of a population growth

⁶ Pharmaceutical Sector,' Amwal Invest, August 2010, <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/43/smid/420/ArticleCategory/207/Pharmaceutical-Sector-in-Jordan>

⁷ Medical Tourism Index, <https://www.medicaltourismindex.com/destination/jordan/>

⁸ IFC Jobs Study: Assessing Private Sector Contributions to Job Creation and Poverty Reduction, January 2013, <http://documents.worldbank.org/curated/en/157191468326714061/IFC-jobs-study-assessing-private-sector-contributions-to-job-creation-and-poverty-reduction>

⁹ Ibid

¹⁰ Ibid.

rate that creates 60,000 new labour market entrants each year.¹¹ As a result, high value-added sectors that require more skilled labour than unskilled labour may not solve Jordan's unemployment problem in the short-term.

Some analysts view the Jordan Compact as a potential framework for additional private sector investment. The partnership structure between donors and host governments and mutual commitment to a common set of goals certainly provides a promising platform for new investment flows. However, the prospect of increased attention to the private sector presents the dilemma of whether objectives should be short- or long-term and whether such investment should target the creation of high-skilled or low-skilled employment.

¹¹ International Labour Organisation, and Ministry of Planning. "Jordan Decent Work Country Programme 2012-2015." Inform Jordan. March 2012. <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/38/Jordan-Decent-Work-Country-Programme-2012-2015>.

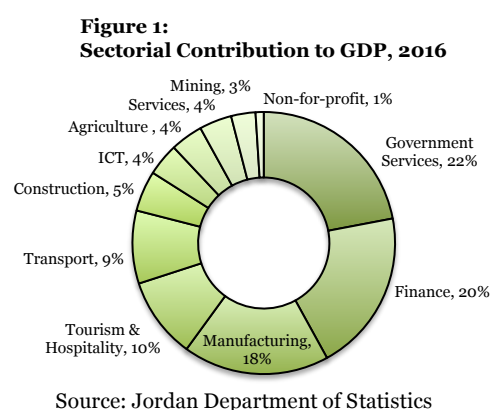
4. Jordan's Economic Structure, Growth and External Trade Trends

4.1 Economic Structure

Jordan's economy has undergone significant reforms over the past three decades, beginning with the liberalisation and reform agenda undertaken by His Majesty King Hussein. These reforms focused primarily on diversification and stimulation of higher value-added economic activity. During the first decade of the 2000's, His Majesty King Abdullah implemented another set of reforms that expanded foreign trade and privatised state-owned enterprises. This agenda brought increased foreign investment and contributed to an average GDP growth rate of 8 per cent between 2004 and 2008.¹²

In the years following these reforms, a range of policy initiatives and visions have sought to bring investment and drive the growth of high value-added sectors. 'Jordan 2025', a ten-year blueprint for economic and social development launched in May 2015, emphasises foreign trade with regional partners and focuses on 'priority clusters' such as construction and engineering, transport and logistics, tourism and events, healthcare, life sciences, digital and business services, educational services, and financial services.¹³ The 'Jordan Economic Growth Plan 2018-2022', developed by the Economic Policy Council and implemented alongside the IMF Extended Fund Facility Program, underscores the policy interventions necessary in the infrastructure and economics sectors to sustain a 5 per cent growth rate over the next four years. Those sectors include hospitality and tourism, agriculture, manufacturing, electricity and water, transport, ICT, and construction.

In the midst of these strategies, Jordan remains a service-based economy with trade and services accounting for approximately 66 per cent of GDP in 2016, followed by industry at 29.6 per cent, and agriculture at 4.2 per cent. According to Department of Statistics data, manufacturing accounted for just 18 per cent of GDP in 2016, while construction accounted for just 5 per cent, agriculture 4 per cent, and mining 3 per cent (see Figure 1).¹⁴



¹² 'CIA World Fact Book,' last modified May 30, 2017, <https://www.cia.gov/library/publications/the-world-factbook/geos/jo.html>

¹³ 'Jordan 2025: A National Vision & Strategy,' <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/247/Jordan-2025>

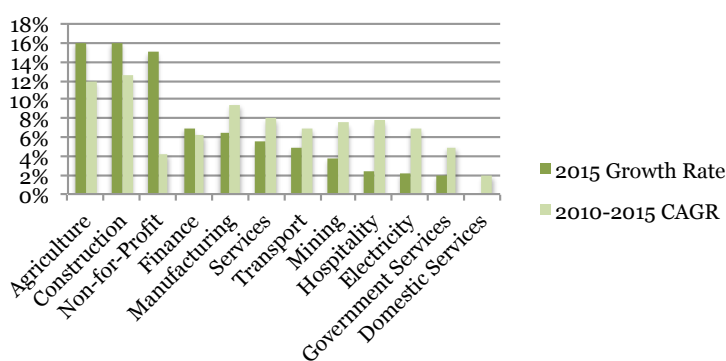
¹⁴ 'Jordan Economic Growth Plan: 2018-2022,' The Economic Policy Council, <https://rhc.jo/sites/default/files/JEPGReportEn.pdf>

Of these sectors, agriculture, construction, and the non-for-profit sectors underwent the highest growth rates in 2015, at approximately 16, 16 and 15 per cent respectively; while manufacturing grew at a moderate rate of 6.5 per cent and hospitality grew at a paltry rate of 2.5 per cent (see Figure 2). Manufacturing, services, transport, mining, hospitality, electricity, government services, and domestic services all experienced a significant slowdown compared to their 2010-2015 compound annual growth rates.¹⁵ The deterioration in these numbers reflects Jordan's slowing GDP growth rate over the same period, which is due to the on-going instability in the region.

Consistent with the critique that Jordan's economy is disproportionately service-based, is the longstanding concern that Jordan is constrained by a bloated public sector. Department of Statistics data corroborate this assertion, citing government services (26 per cent) as the largest employer of Jordanians, followed by trade (15 per cent), and education (12 per cent).¹⁶

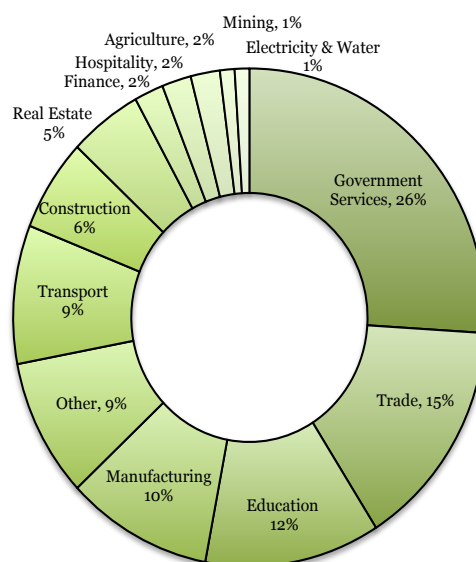
These figures, when viewed in comparison to sectorial contribution to GDP, point to certain peculiarities and trade-offs that underpin Jordan's labour market and long-term economic strategy. As noted previously, government services account for a greater proportion of Jordanian employment than it does GDP. Conversely, finance, manufacturing, and tourism all account for a much larger share of GDP than they do Jordanian employment. In the case of the finance sector, this may reflect the fact that while less capital-intensive than certain industrial sub-sectors, productivity gains — particularly investments in automation and technology — have reduced that sector's average contribution to employment. In the case of the manufacturing sector, the indication is a trend towards greater capital intensity across the principal industrial sub-sectors in Jordan. Or, it may evidence the underlying tendency to employ non-Jordanians.¹⁷ Similarly, the

Figure 2
Growth Rates by Sector



Source: Jordan Department of Statistics

Figure 3:
Jordanian Employment by Economic Activity, 2016



Source: Jordan Department of Statistics

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ According to the website, the 'Business of Fashion,' in 2015, 75 per cent of textile and garment workers in Jordan originated from Bangladesh, India, Sri Lanka, Myanmar, and Madagascar.

tourism and hospitality sector demonstrates a sizeable difference in contribution to employment and contribution to GDP. This may also reflect that sector's inclination towards non-Jordanian employment.

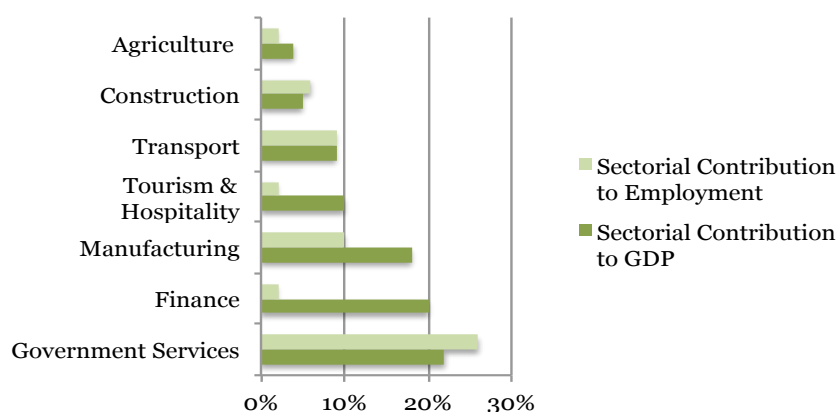
Alongside these trends in employment and GDP, Jordan's unemployment rate has steadily risen since the middle of 2015, reaching 18.2 per cent in the first quarter of 2017 (13.9 per cent for men and 33 per cent for women), the highest rate since the series began in 2005. Many attribute this to the influx of Syrian refugees as well as the deterioration in Jordan's external trade position due to the overall political situation

in the region. In addition, Jordan's growing unemployment numbers are partly attributable to changes in the way the figure is calculated: in early 2017 Jordan adopted the OECD method for calculating unemployment which includes migrant workers and excludes unpaid domestic workers. This new, more rigorous, methodology explains a piece of Jordan's historically high unemployment figure.

4.2 External Trade

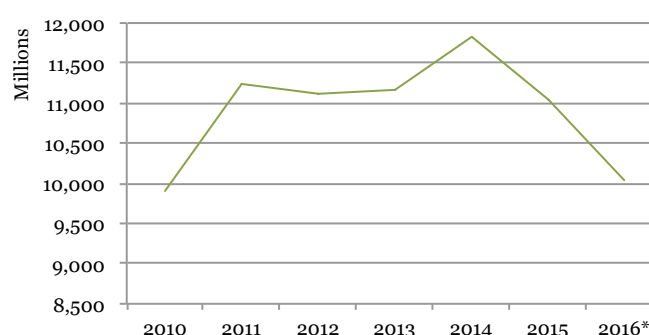
Analysts continue to underscore the WANA region's ill-fated political context and its negative impact on Jordan's external trade capacity. Indeed, Jordan's economy is better integrated within the regional market than many of its neighbours. As highlighted in the World Bank's Ease of Doing Business Report, Jordan has established an edge in time and cost to market with neighbouring Syria and Iraq, outranking its counterparts by a large margin.¹⁸ These achievements, while promising for the long-term, further highlight the claim that the on-going conflicts in Syria and Iraq have

Figure 4
Ratio, Contribution to GDP: Contribution to Employment, Selected Sectors



Source: Jordan Department of Statistics

Figure 5
Jordan Exports 2010-2016, Millions JD



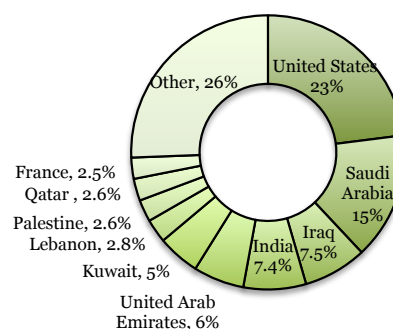
Source: World Bank
*CIA World Fact Book Estimate

¹⁸ 'Jordan 2025: A National Vision & Strategy,' <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/247/Jordan-2025>

constrained the growth of Jordan's export figures. In 2016, exports fell 9 per cent on 2015 to their lowest level since 2010. Declining trade with Iraq and Syria due to conflict and border closures was a key factor behind this drop.

Jordan exports a variety of industrial and agricultural products to a wide range of countries. According to the UN COMTRADE database on international trade, in 2016 Jordan's largest trading partners included the United States, Saudi Arabia, Iraq, India, the United Arab Emirates, Kuwait, Lebanon, Palestine, Qatar and France (see Figure 6). As noted previously, prior to the escalation of violence and resultant border closures Jordan enjoyed a fruitful trade relationship with both Iraq and Syria. In 2013, Iraq accounted for 18 per cent for Jordan's total exports. In 2016, the total value of Iraq-bound products had decreased by more than 50 per cent (see Figure 7). Similarly, in 2011, Jordan's exports to Syria constituted 4 per cent of total exports, falling to a value equivalent to just 1 per cent of total exports in 2016.

Figure 6
Jordan Exports by Country, 2016



Source: Trading Economics

Despite the losses that the conflict in Syria and Iraq have brought to Jordan's external trade position, it is worth noting that there have been significant gains in certain product categories and among certain key partners. Textile¹⁹ exports, 88 per cent of which are bound for the US market, have increased by 87 per cent in US dollar values since 2009. Pharmaceutical products, whose primary destination markets include Saudi Arabia (24 per cent), Algeria (14 per cent), and Iraq (12 per cent), have expanded by approximately 38 per cent in US dollar terms in the same time period. Jordan's US-bound exports increased by nearly 350 per cent between 2009 and 2016, while Saudi Arabia-bound exports increased 54 per cent. These gains are noteworthy and demonstrate growing competitiveness within certain industries. The relationship between the competitiveness of these sectors and the potential for job creation will be explored in more detail in the following section of this report.²⁰

Figure 7
Exports to Iraq' Share of Total Exports



Source: Trading Economics

¹⁹ The United Nations COMTRADE database on international trade specifies four categories of textiles. The category referred to here is articles of apparel, knit or crocheted.

²⁰ The International Rescue Committee's February 2017 report 'In Search of Work: Creating Jobs for Syrian Refugees: A Case Study on the Jordan Compact,' argues that the Jordan Compact places too much emphasis on trade liberalisation as a driver for employment creation. According to their research—which was supported by a team of McKinsey & Company

4.3 Sub-Sector Trends

4.3.1 Agriculture

The agriculture sector is of modest importance in Jordan, accounting for approximately four per cent of GDP and two per cent of employment of Jordanians in 2015, according to Department of Statistics data. The two sub-sectors considered in this report are fruit and vegetable production and livestock production, both of which have suffered in recent years as a result of the deteriorating trade situation with Iraq. Destination markets for Jordan's fruit and vegetable exports are primarily regional and have traditionally included Iraq, the GCC countries, Lebanon, Syria, and Oman. It is therefore not surprising that both of these categories have experienced major downturns as a result of the on-going conflicts in Syria and Iraq: between 2014 and 2016 vegetable exports declined by approximately 33 per cent. Similarly, livestock exports experienced significant growth between 2008 and 2012, followed by steep declines from 2012 onward.

However, certain indicators suggest that both the fruit and vegetable and livestock sectors have the potential to make greater contributions to both GDP and employment. Between 2000 and 2010, fruit and vegetable production grew at a rate of 2 per cent, while certain items such as peaches and dates experienced growth rates as high as 11 and 19 per cent respectively. Exports in this category grew by more than 400 per cent during the same period. By 2010, 38 per cent of vegetables produced in Jordan were exported.

Within the livestock category, poultry production experienced significant advances after Jordan became a member of the WTO in 2000 and established a number of high technology farms. Chicken meat production has been on an upward trend since 2003, with notable growth between 2009 and 2010.²¹ Milk production also grew considerably between 2000 and 2008 and is expected to see further expansion on the back of continued population growth.²²

4.3.2 Industry

Jordan's industrial sector is strategic to the country's long-term development vision. Industry represents a relatively large share of total employment, but this share does appear to be shrinking over time: in 2014, industry accounted for 18.5 per cent of total employment in Jordan, down from 18.7 per cent in 2012, according to the database Statista. Industry value-added as a share of GDP seems to have gained slightly since 2004, despite some relative decline since 2008. Key industrial sectors include textiles and garments, chemical and cosmetics, medical and therapeutic; engineering, electrical and IT; plastic and rubber, paper and packaging, and wood and furniture.

Of these sectors, chemicals and cosmetics, pharmaceuticals, and textiles and garments are the largest, accounting for 11, 10, and 5.44 of value-added, respectively, according to Department of Statistics 2013 figures. Engineering, electrical and IT; plastic and rubber, paper and packaging,

consultants' analysis of Department of Statistic data—there is little evidence that trade liberalisation policies lead to job creation on a large scale.

²¹ 'Jordan: Water along the food chain,' FAO, <http://www.fao.org/3/a-i4608e.pdf>

²² Livestock Research for Rural Development, <http://www.lrrd.org/>

and wood and furniture are smaller, accounting for approximately 4.23, 2.52, 2.37, and 1.85 per cent of a value-added, respectively, according to Department of Statistics 2013 figures.

In terms of trade, chemicals and cosmetics and textiles and garments account for 32.1 and 18.6 per cent of domestic exports, respectively, according to Jordan Strategy Forum 2014 figures. The pharmaceuticals sector is also a major contributor to outbound trade, accounting for 9.6 per cent of total exports in 2016, according to the United Nations COMTRADE database. Engineering, electrical and IT; plastic and rubber, paper and packaging, and wood and furniture each contributed less than 5 per cent of domestic exports in 2014.

According to Jordan Chamber of Industry figures, in recent years several industrial sectors, including the chemical and cosmetics, the medical and therapeutic; the engineering, electrical and IT; the plastic and rubber, and the paper and packaging industries have all demonstrated increases in investment combined with decreases in employment. Both the textile and the wood and furniture sectors experienced decreases in investment and employment. No industrial sector assessed in this report has experienced an increase in employment.

Exports have also witnessed significant declines in recent years, in part as a result of slowing trade with Iraq. Fertilisers, inorganic chemicals, electrical and electronic equipment, machinery products, plastics, rubbers, paper and paperboard, and wood product exports all have dropped against previous levels. Only the textile and garment and pharmaceutical sectors have registered increased growth in exports.

5. Implications for Jordan's Future Growth & Development

The prevalence of waning industrial employment amidst increases in overall investment raises questions about the links between investment and job creation. Moreover, the influx of lower-skilled Syrian refugees and the consequent need for the large-scale creation of lower value-added jobs in the short-to-medium term has disrupted some of the assumptions that underpin Jordan's knowledge-based economic strategy. Should Jordan shift its focus to lower value-added sectors in order to employ larger numbers of people in the short-to-medium term? Such a move would be precipitant and most likely not produce the desired result. Nonetheless, the changing policy environment should alert stakeholders to the question of how the trade-off between employment and value-added might be considered in the Jordanian context.

5.1 Agriculture

As of May 2017, approximately 16,037 Syrian refugees had gained formal working rights for employment in agriculture. The agriculture sector currently employs a small proportion of Jordanians and does not stand out as a strong contributor to value-added. However, the sector's 2015 growth rate outranked its performance during the previous five-year period. Efforts to foment greater integration of technology in this sector could capitalise on this upward trend, as mechanisation would increase production while creating jobs for highly skilled workers and potentially sustaining jobs for less highly skilled workers.

A stronger focus on technology investments as well as marketing capacity may set the stage for the modernisation of Jordan's agriculture sector while simultaneously increasing value-added and creation of indirect jobs. Sector leaders have noted that the industry is undergoing a landmark digital transformation. Between 2015 and 2020, 27 per cent of the jobs created in the technology-intensive agriculture sector in the United States will be concentrated amongst science, technology, engineering and mathematics disciplines.²³ While Jordan's agriculture sector is significantly less technology-based than the US example, the potential for highly skilled worker job creation of this sector — under the appropriate conditions — should not be overlooked.

Analysts have noted that in contrast to European Union countries, WANA countries do not have rigorous quality and packaging requirements for fruit and vegetable products. Although GCC countries may be adopting higher standards that could further disrupt Jordan's agriculture trade flows. Investment combined with capacity building efforts to improve technology, standards and packaging processes could help to stabilise Jordan's hold on its traditional agriculture exports partners while opening the possibility of access to more sophisticated markets as well as boost contributions to employment and GDP.

²³ Daniels, Jeff, 'Agriculture Job growth to boom over next five years,' CNBC, <http://www.cnn.com/2015/05/20/agriculture-fertile-ground-for-job-seekers.html>

5.2 Industry

As previously noted, no industrial sector discussed in this report has registered an increase in employment while five of the seven sectors explored registered decreasing employment alongside increasing investment. The fact that these trends have occurred in parallel is counterintuitive and may be explained by slumping confidence levels resulting from the adverse political conditions in the WANA region. Nonetheless, the situation does not bode well for future industrial employment creation.

However, if economic policy-makers are to chart the course for inclusive, jobs-based growth, they must develop a more detailed understanding of the factors at work in this scenario. Are investments facilitating the purchase of equipment that makes workers redundant? Are firms scaling back on hiring as result of poor market and external trade conditions, despite the fact that they have adequate resources to hire new workers? Do firms lack access to the pool of talent that is necessary to take advantage of their investment dollars? In order to boost industrial employment and align the supply of industrial workers with new opportunities, should policy-makers be focused on creating low or high-skilled jobs? If donors, policy makers, and business leaders are to channel investments effectively, they must unravel the answers to these questions.

Ultimately, the industrial sector's success as a driver of growth will depend on its ability to produce, market and sell goods that are of a desirable quality. Sales growth results from product competitiveness and domestic demand. Demand and consumer confidence will be a challenge in the current political context as will the market for exports amongst traditional trading partners. Department of Statistics figures indicate that the industrial sector's growth rate has slowed relative to previous periods. If the sector is to overcome this trend and achieve growth in the current environment, it will have to either access new markets or produce goods for which demand is steady despite the adverse market conditions. Greater access to capital may make this possible, but as recent trends have suggested increased investment does not necessarily create greater work opportunities. Analysts and policy-makers may therefore have to identify other means of facilitating industrial job creation.

6. Implications for Investors

Additional research is needed to understand the impact that investment growth has had and could have on agricultural and industrial output. Inevitably, the growth and employment generated by each additional investment dollar depends on a handful of characteristics that are unique to the relevant sub-sector, firm and new activity supported by the investment. Investors seek to support projects that promise the maximum financial return. However, it is important to note that in certain cases, investors consider non-financial factors such as the potential social and environmental impact of their venture.

The fact that increased rates of investment in Jordan's industrial sector have coincided with decreasing levels of employment should not, in and of itself, deter investors. Investments that yield high returns by facilitating increased mechanisation and reductions in labour costs often have no trouble attracting investors. However, the fact that several industrial sub-sectors have reported increased levels of registered capital alongside a slowing industrial growth rate could discourage investors. In addition, the current political context's dampening effect on domestic demand and export markets will also hinder investors' interest in WANA region for the near term.

If Jordan is to capitalise on the Jordan Compact as means of boosting its private sector, it must highlight the importance of factors beyond financial returns. This is not to say that investments in Jordan's agricultural and industrial sectors bring disproportionate risks. Rather the potential social impact of supporting Syrian refugee livelihoods, the continued development of the knowledge economy in the region, and enhanced environmental sustainability (especially within the agriculture sector), combined with the potential financial return of investments in target sectors should merit investor attention. In order to make the case for this, policy-makers and private sector leaders must present a clear, evidence-based storyline that explains the relationship between investment, job creation, and growth as well as the trade-off between value-added and employment.

7. Implications for Refugee Policy & Refugees

Refugee policy-makers are charged with the responsibility of ensuring that individuals displaced by conflict, natural disaster, and persecution enjoy an adequate level of protection within the region and country where they seek refuge. In recent years, the right to sustainable livelihoods has become a key tenet of refugee protection conventions, as demonstrated by the UN Refugee Agency and other actors' successful lobbying for partial labour integration rights of Syrian refugees in Jordan.

The challenges facing Jordan's economy and its ability to create employment and absorb unskilled labour, pose a threat to the host government's ability to deliver on its pledge to create 200,000 jobs. As of June 2017, Jordan's Ministry of Labour has granted more than 50,000 work permits to Syrian refugees working across agriculture, construction, manufacturing, wholesale and retail trade, and food and beverage sectors. Many of these jobs referenced here mean jobs formalised rather than jobs newly created. Nonetheless, the slowing rate of economic growth, the deteriorating external trade position, and the decreasing levels of industrial employment described earlier in this report suggest that Jordan's continued ability to create jobs *en masse* may be tenuous at best.

The Jordan Compact has been praised as an innovative framework by which the host government and the donor community participate in a mutually beneficial partnership that drives economic growth while ensuring refugee protection. The prospect of increased private sector investment has served as a key incentive in this arrangement since the agreement was developed in early 2016. If investment proves to be an ineffective tool for growth and employment creation in the current context and no additional job creation tool is identified, the recent emphasis on labour integration within Refugee Policy communities may be undercut. Are refugee host-communities inherently low-growth environments? The protracted conflict that leads to forced migration is certainly not a positive contributor to the conditions necessary for market expansion and enhanced prosperity.

A December 2016 McKinsey Global Institute report on global migration found that low- and medium-skilled migrants make a disproportionate contribution to global GDP when they move to higher-productivity settings.²⁴ This claim, combined with Jordan's case of falling employment levels alongside rising investment, certainly constitutes an argument for expanding refugee resettlement programmes and lessening the burden on struggling host state economies. However, drawing this conclusion short of further research efforts that assess the nature and impact of recent investment in Jordan's industrial sector would be premature.

Jordan's commitment to create 200,000 jobs for Syrian refugees was based on the assumptions that the economy would continue to create jobs and that investment could be leveraged to drive further growth. If these assumptions prove to be unsubstantiated and traditional investment tools become ineffective in facilitating growth, the labour market over the long term may fail to

²⁴ Woetzel, Jonathan, et. al; 'People on the Move: Global Migration's Impact and Opportunity,' McKinsey Global Institute, December 2016, <http://www.mckinsey.com/global-themes/employment-and-growth/people-on-the-move>

provide Syrian refugees with adequate options for sustainable livelihoods. Ultimately, the refugees stand to lose the most from such a scenario. However, the harm resulting from such a scenario would be felt by the Jordanian host-community and refugee policy-makers as well. All of this should serve as a reminder that the stakes of a successful labour integration programme are high for all parties.

8. Recommendations for Further Research

A key premise behind this assessment is the need to reconcile investment in capital-intensive industries that are central to the development of the knowledge economy with the need for job creation in the short-to-medium term. In order to advocate for increased private sector investment within the framework of the Jordan Compact, academics, NGOs and private sector thought leaders need data — both qualitative and quantitative — that calibrates the trade-off between job creation and value-added. This assessment has provided an overview of the growth trends, investment and employment levels, and external trade potential of two sub-sectors within agriculture and seven sub-sectors within industry. More research is needed to gain a deeper understanding of how investments in these sub-sectors would be directed, what levels of employment should be created, the skillsets that would be needed to drive increased performance, and the additional steps necessary to ensure that investment leads to employment growth. We highlight three areas that will serve as the basis for future research.

8.1 Quantify the Relationship between Investment and Employment Creation at the Sub-Sectorial Level

All sectors and all firms are different in the way they absorb investment. In some sectors one million US dollars of investment will lead to the creation of 20,000 jobs; in other sectors the same investment would lead to the creation of far fewer jobs. Market access and market conditions play an important role here.

A number of industrial sub-sectors assessed in this paper have registered an increase in investment combined with a decrease in employment. Going forward, it will be essential to gain a better understanding of what drives this relationship on a sub-sectorial basis. Are investments in mechanisation making workers redundant? Are firms scaling back on hiring because of slumping confidence levels due to the current political context? Are firms refraining from hiring new workers even if they have the resources to do so? Do firms lack access to the pool of talent they need to take advantage of their investment dollars? All of these questions need to be explored in a systematic way in order to gain a better understanding of how private sector investment dollars should be targeted.

8.2 Map Skill Levels on a Sub-Sectorial Basis

A comprehensive assessment of the breakdown in skillsets necessary to achieve full capacity has been conducted for the wood and furniture sector. Such analysis has not been carried out for the agriculture sector or the remaining six industrial sectors discussed in this paper. Under the right market conditions, increased investment in agriculture and industry will inevitably lead to job creation. However, the extent to which companies will need skilled or less-skilled workers will vary based on the technology used in the production line, the complexity of the product mix, and the nature of firm's operative model. Mapping this breakdown of skill levels on a sub-sectorial basis would serve to illustrate how investment could improve Jordan's employment rate in the short-to-medium term.

8.3 Employ a Market Systems Approach

Agriculture and industrial sectors do not operate in a vacuum. Providing the investment that allows these sectors to improve their product line and operational capacity can drive growth. However, a firm's ability to grow will in part be determined by domestic and external market conditions. The point that a given sector occupies in the value chain, be it upstream or downstream, must be weighed in line with other factors. Where there are adequate market conditions, an investment in an upstream sector has the potential to drive growth in a related downstream sector. Likewise, an investment in a thriving downstream sector can create a market for a related upstream sector. These linkages must be considered.

8.4 Future Projects

In line with these recommendations, the WANA Institute intends to explore the many questions around sub-sector level investment, job creation and other market and industry trends that have arisen in this assessment. Beginning in August 2017, we will conduct a series of follow-up interviews with agricultural and industrial sector market representatives. These conversations may be followed by additional discussions with market leaders across agricultural and industrial sectors. This research will be qualitative in nature, although discussions will have a quantitative component as private sector thought leaders will inevitably have a view of sector level growth rates and investment-to-job-creation ratios.

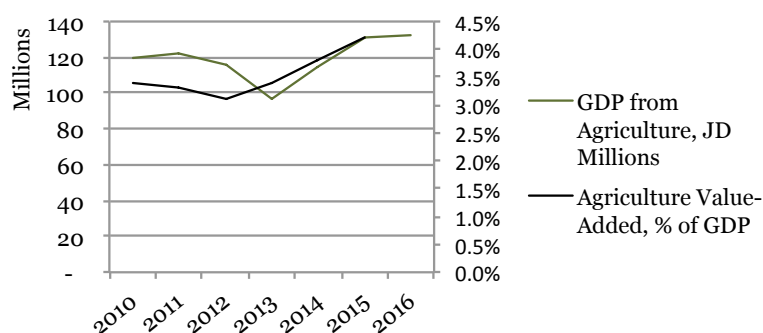
9. Annex

Sub-Sectorial Analysis

Agriculture

In the period between 2010 and 2016 agriculture value-added as a share of GDP varied between 3.4 and 4.2 per cent, experiencing a small downturn between 2011 and 2012 and then recovering between 2013 and 2015 (see Figure 8). Despite the sector's declining importance, it continues to provide critical sustenance and employment to Jordan's poorest citizens.²⁵ This is in line with the global trend: according to the ILO, agriculture (combined with forestry, hunting and fishing) constitutes approximately 29.6 per cent of global employment, but has and will continue to account for a declining share of jobs.²⁶

Figure 8
Jordan GDP from Agriculture vs. Agriculture Value Added as Share of GDP, 2010-2016

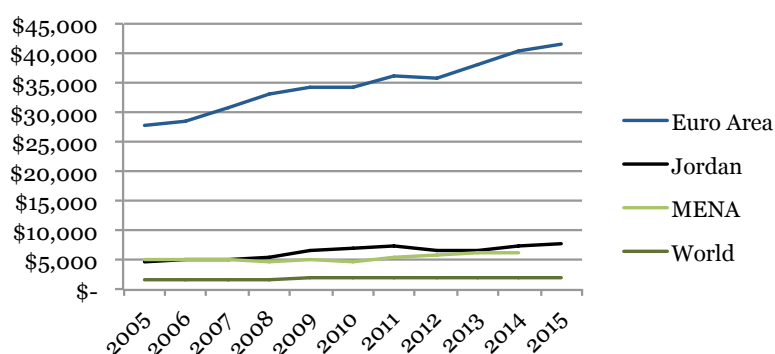


Source: The World Bank/ Trading Economics

The agriculture sector in Jordan is defined by small land holdings, inadequate economies of scale, insufficient irrigation systems, and limited investment in technology and marketing. While a number of medium and large Jordanian companies provide inputs, the farming segment of Jordan's agriculture supply chain is highly fragmented: more than 99 per cent of farms can be classified as small, operating on 3 hectares of land or less.

Moreover, rain-fed, as opposed to irrigated, agriculture accounts for 87 per cent of farming activities.²⁷ Nonetheless, the typical Jordanian agricultural worker has achieved a level of productivity that is above the world average and superior to

Figure 9
Agriculture Value-Added per Worker, Constant 2010 US Dollars



Source: The World Bank

²⁵ 'Pre-Identification Mission: Support to Agriculture Development in Jordan,' Europe Aid, <http://inform.gov.jo/en-us/By-Dte/Report-Details/ArticleId/63/smid/420/ArticleCategory/216/Assessment-of-the-Agricultural-Sector-in-Jordan>

²⁶ 'Which Sector Will Create the Most Jobs,' International Labour Organization, http://www.ilo.org/global/about-the-ilo/multimedia/maps-and-charts/WCMS_337082/lang-en/index.htm

²⁷ Jordan Investment Commission, <https://jic.gov.jo/portal/Service/GetServiceCatalogPartial?ServiceCatalogName=JordanInvestmentCommission&ServiceCategoryName=Livestock>

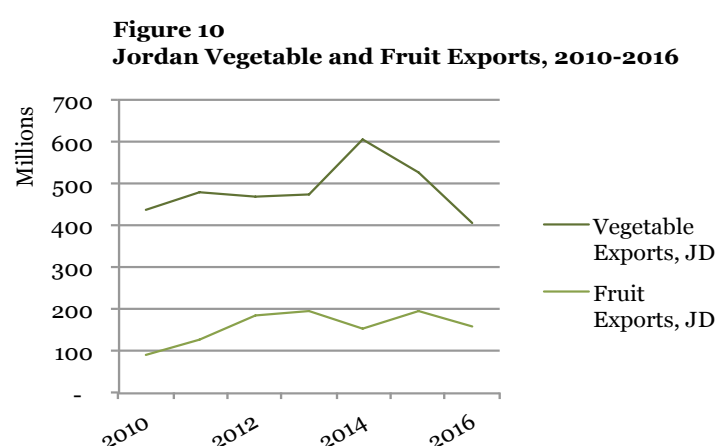
that of many of his or her counterparts in WANA countries (see Figure 9). In addition, there are some isolated cases of innovation, including firms invested in greenhouse production as well as reports of capital-intensive irrigated farms in the Jordan Valley and Southern Ghors that produce fruits and vegetables for both the domestic and export markets.

The lack of fresh water resources presents a constant barrier to growth for the agriculture sector in Jordan. Agriculture detractors assert that the sector, according to 2009 figures, utilises a disproportionate 62 per cent of national water resources, while only contributing 3.5 per cent to GDP and accounting for 2.7 per cent of national employment. In the same year, the industrial sector utilised just 4 per cent of national water resources while contributing 29.9 per cent of GDP and 20 per cent of employment. Many analysts maintain that this claim is exaggerated, however, its persistence underscores the scale of the problem that water scarcity presents.²⁸ Nonetheless, the fact that the sector accounted for more than 10 per cent of Jordan's exports in 2016, in spite of these limitations and slowing trade with Iraq — a major importer of Jordan's vegetable produce — is testimony to its growth potential, under the right conditions.

Fruit & Vegetable Production

As noted in Section 2, the fruit and vegetable sub-sector has suffered as a result of deteriorating trade with Iraq (see Figure 10). However, between 2000 and 2010, a number of product categories experienced high growth rates (see Table 1).

Table 1: Vegetable Growth Rates²⁹	
Product	2000-2010 Production Growth Rate
Tomatoes	7%
Cucumbers	3%
Potatoes	5%
Watermelon	13%
Eggplants	10%
Squash	3%
Cauliflower	7%
Lettuce	13%
Sweet Peppers	10%
Jew's Mallow	4%
Sweet Melon	-1%
Total Vegetable	7%



Source: Trading Economics

²⁸ 'Pre-Identification Mission: Support to Agriculture Development in Jordan,' Europe Aid, <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/63/smid/420/ArticleCategory/216/Assessment-of-the-Agricultural-Sector-in-Jordan>

²⁹ Ibid.

Key Upstream and Downstream Linkages

The fruit and vegetable sub-sector is characterised by important backward and forward linkages. At the backward, or upstream end, there is seed production. Agriculture industry reports point out that only 1 to 10 per cent of sector seed inputs are met by domestic production. The remaining 90 to 99 per cent of seeds are imported. Lack of adequate laboratories for testing and certification explain this reliance on imported products.

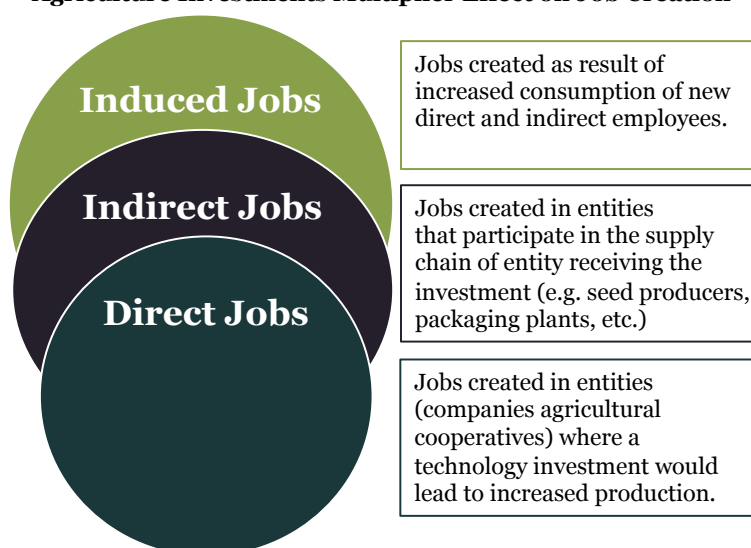
On the forward, or downstream end there are a number of activities: including, product cooling, product grading, packaging, marketing and transport. Various government and donor-led needs assessments and growth strategies have noted the limitations that these activities present for the production and export capacity of Jordan's agriculture sector.

Sub-Sector Job Creation Potential

The degree to which Jordan's agriculture sector is human resources intensive as opposed to capital-intensive has not been fully quantified. As a good deal of fruit and vegetable production has been noted to take place on small-scale holdings where there is limited mechanisation. Department of Statistics data suggests that agriculture accounted for four per cent of Jordanian employment in 2015.

If this trend continued, the agriculture sector at large most likely employed approximately 80,000 individuals in 2016. While reports have cited some cases of capital-intensive mechanisation and irrigation systems, the bulk of individuals employed in agriculture in Jordan are small-scale farmers who contribute little to value-added, at least in comparison to workers in advanced agriculture industries (see Figure 9). Highly trained, managers and technicians make up a very small portion of the sub-sector work force.

Figure 11
Agriculture Investments Multiplier Effect on Job Creation



Sub-Sector Market Trends

1. Organic produce
2. Re-branding of less-than-perfect produce for a reduced price
3. Growing global demand for food resulting from population growth
4. Increased demand for fruits and vegetables on the back of healthy eating initiatives

Sub-Sector Investment Needs

Table 2: Sub-Sector Investment Needs				
Investment		Increase Production	Better Manage Inputs & Natural Resources	Enhance Downstream Operations
1	Irrigation technology	☑	☑	
2	Mechanisation equipment	☑		
3	Alternative energy technologies		☑	
4	Hydroponic systems			
5	Digital technologies to track and relate inputs and outputs	☑	☑	
6	Greenhouse technologies	☑		
7	Drought resistant seed production	☑		
8	Refrigeration/ cooling systems for storage			☑

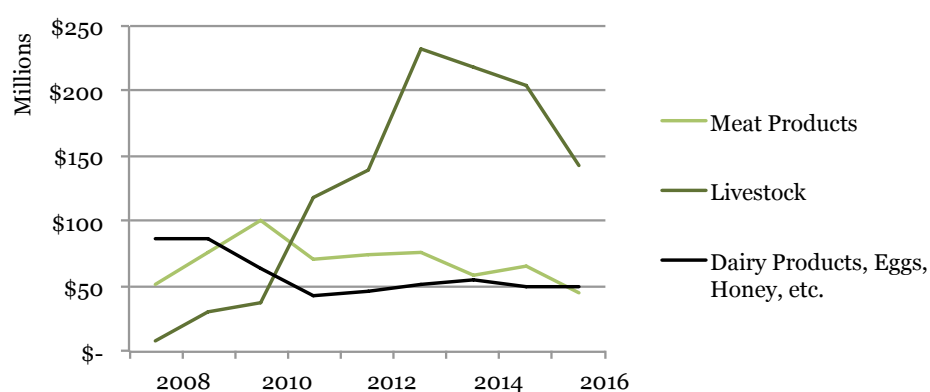
Livestock Production

The livestock sub-sector in Jordan, which consists primarily of poultry followed by dairy cattle production, contributes approximately 60 per cent of overall agricultural output and provides a major source of income to 250,000 people.³⁰ Government data suggests that the poultry meat and egg categories are productive enough to meet domestic consumption needs, while the cattle segment provides for approximately 30 per cent of beef consumption needs and 53 per cent of milk and dairy product consumption needs. Major barriers to growth in the sub-sector include limited feed and water resources, over-grazing, deterioration of rangeland and a decline in the quality of the necessary veterinary services.³¹

Despite the challenges, the sub-sector has in recent decades demonstrated notable gains in a range of product categories, including poultry and dairy products. All of this growth was reflected in Jordan's export performance (see Figure 12), which demonstrated steady increases across all categories up until 2009

(and livestock up until 2013), followed by declines resulting from slowing trade with Iraq.

Figure 12
Livestock Sector Exports, 2008-2016



Source: Trading Economics

³⁰ Livestock Research Directorate, Government of Jordan, <http://www.ncare.gov.jo/body.aspx?id=139>

³¹ Ibid.

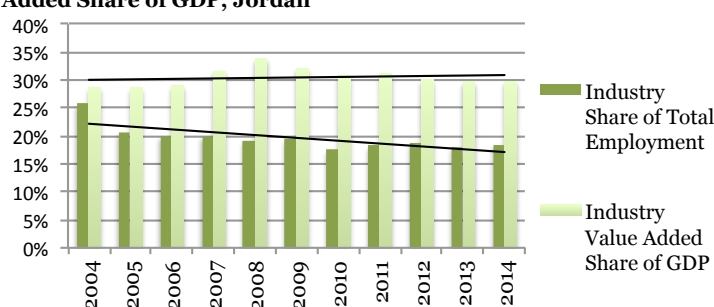
The gains that this sub-sector has experienced in recent decades serve to highlight its potential for further expansion. An example of this, is Jordan's successful bid to host the first regional livestock market that was awarded at the 33rd session of the Regional Conference for the Near East earlier this year. The market, which will be based in Maan, will provide livestock to the GCC, Iraq, Syria, Lebanon, Palestine, Egypt and Turkey. The project is supported with JD 16-20 million in foreign investment and is expected to create up to 1,000 jobs over the next few years. Parallel investments in fodder cultivation, treated natural fertilisers, breeding and re-export facilities, slaughterhouses, and meat preparation factories are also in the pipeline.³²

Industry/Manufacturing

The industrial sector is one of the six key sectors emphasised by the Jordan Investment Commission. According to the International Labour Organization (ILO), the manufacturing sector accounts for 11.6 per cent of global employment with only 0.13 per cent employment growth expected between 2014 and 2019.³³ In Jordan, industry

represents a relatively large share of total employment, but this share does appear to be shrinking over time: in 2014, industry accounted for 18.5 per cent of total employment in Jordan, down from 18.7 per cent in 2012, according to the database Statista. Industry value added as a share of GDP seems to have gained slightly since 2004, despite some relative decline since 2008. Thus, in terms of GDP the relative importance of industry appears steady, while the sector may be slightly losing ground in terms of its contribution to employment. However, industry's share of total employment in Jordan still outperforms industry's share of total global employment by a wide margin.

Figure 13
Industry Share of Total Employment vs. Industry Value Added Share of GDP, Jordan

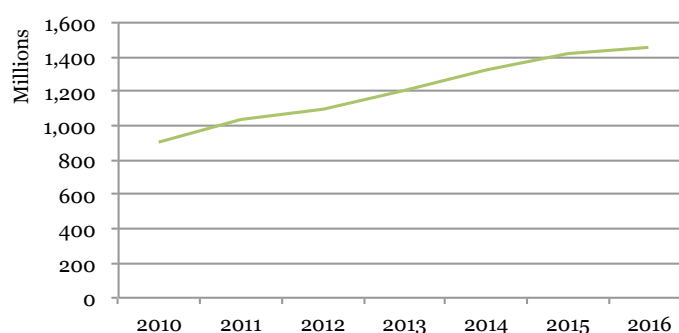


Source: Statista

Textile & Garments

The textile sub-sector in Jordan is an integral part of Jordan's industrial base, accounting for 18.64 per cent of domestic exports in 2014,³⁴ and 5.44 per cent of value-added in 2013 (see Table 4). According to official data, between 2010 and 2016 exports

Figure 14
Jordan Textile Exports (USD) 2010-2016



Source: Trading Economics

³² Namrouqa, Hana; 'Maan-based regional livestock market to start exporting in 2017', *The Jordan Times*, October 10, 2016, <http://www.jordantimes.com/news/local/maan-based-regional-livestock-market-start-exporting-2017%E2%80%99>

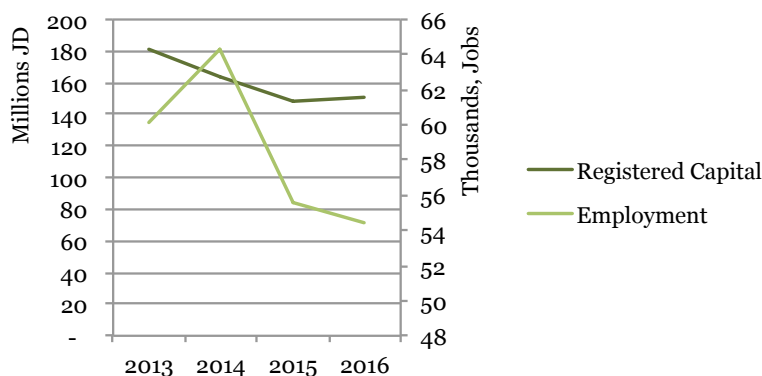
³³ ILO World Employment and Social Outlook, http://www.ilo.org/global/research/global-reports/weso/2017/WCMS_541211/lang--en/index.htm

³⁴ 'Jordan's Product Space,' Jordan Strategy Forum

in this sector increased by approximately 60 per cent (see Figure 14). Between 2013 and 2015, the sector registered a decrease in registered capital combined with a decrease in employment (see Figure 15). During the same period, the sub-sector experienced an increase in the number of firms.

According to the website the Business of Fashion, the textile sector in Jordan, with a total of 55,000 garment workers, accounts for as much as 95 per cent of the industrial workforce. However, as many as 75 per cent of these workers are non-Jordanian. The firm Classic Fashion, a market leader in the sub-sector, admits that of its 15,000 employees, only 2,000 are Jordanian.

Figure 15
Jordan Textile Sector: Selected Indicators, 2013-2016



Source: Jordan Chamber of Industry

The bulk of exports produced in this sector — approximately 90 per cent — are exported to the United States under the US-Jordan Free Trade Agreement. This agreement has allowed Jordan to gain a foothold as an intermediary point between East and South Asia where textile raw materials are produced and the final point of sale in the United States: through Jordan's Aqaba Port global companies can ship products to distribution centres faster and less expensively than shipping from Southeast Asia.³⁵

Other export partners include Canada, the Netherlands, and Israel who collectively accounted for 7.1 per cent of exports of apparel knitted or crocheted in 2016. The fact that European export markets, who have received a great deal of media attention as a potential trade partner under the relaxed rules of origin framework, account for such a small portion of Jordan's textile exports suggests that there is sufficient room for growth in this category.

In its 'Jordan Product Space' report, the Jordan Strategy Forum (JSF) argues that the textile sector drags down the on the overall economic complexity of Jordan's export basket and should not be the focus of future development strategies as growth in this sector would make only small contributions to increased wealth and prosperity.³⁶ This argument is consistent with the United Nations Industrial Development Agency's classification of the textile industry as a low-technology industry. This report notes that between 1963 and 2010, the largest contribution to output growth in the textile and textile products and leather and footwear sectors came from energy as opposed to capital and labour investments, while productivity growth drove output growth only in the textile and textile products sub-sector.³⁷ Given the fact that Jordan's textile

³⁵ Sarah Elizabeth Williams, "Made in Jordan: Inside the Unexpected Powerhouse of Garment Manufacturing," *BQF Global Currents*, September 2015.

³⁶ 'Jordan's Product Space,' Jordan Strategy Forum

³⁷ 'Industrial Development Report 2016,' United Nations Industrial Development Organization

sector has seen rising exports in the context of declining investments, this trend might be applicable to the Jordanian case.

According to the JSF database, Jordan does manufacture higher value-added textile products, but in much smaller quantities than those products characterised as of low-to-medium sophistication. The products include linoleum floor coverings; impregnated, coated, and covered textile fabrics; painted canvas, rubberized textile fabrics, and metallised yarn. Export markets for these products consist primarily of Saudi Arabia, and Iraq. The top importing countries for these products generally include China, Germany and the United States. Jordan's textile products that are considered less sophisticated include bed, table, toilet, and kitchen linen; men's and boy's shirts; track suits, ski suits; and t-shirts, singlets, and other vests.

Key Upstream and Downstream Linkages

The textile sector's highly fragmented value chain consists of the weaving factory, the distribution centre and the retailer or the final point of sale. Input materials, which consist of thread and yarn, tend to be imported from Asia. According to the London School of Economics' International Growth Centre, the textile sector is undergoing transformative structural change as newly industrialised countries such as China and Mauritius increasingly compete with Pakistan, Bangladesh, and Sri Lanka who have long dominated the lower end of the value chain. This increased competition will make skills, technological capabilities and investment in modern facilities and infrastructure vital.³⁸

Sub-Sector Job Creation Potential

Given the estimate that as many as 75 per cent of the textile and garment sub-sector's 55,000 employees are non-Jordanian, long-term employment growth in this sector would more likely result from replacement than actual jobs growth. Facilitating such a change, would require a significant change to the firms' income models, as factory managers stress that their firms' profits are only profitable when their employees work longer than the typical Jordanian work day.

Sub-Sector Market Trends & Investment Needs

As previously mentioned, the London School of Economics International Growth Centre has noted that the global textiles industry is in the throes of transformation due to increased competition from Asia. Additional interviews with local industry leaders are needed to gain a better understanding of the global market trends and how they are relevant to the textile sector in Jordan. Could capital investments aimed at improving production methods and processes help Jordan to shift towards the production of higher value-added textile products? If Jordan were to gain a competitive advantage in the production of these products, would a more skilled workforce be required? These questions need to be explored in more detail in order to present actionable recommendations for channelling the investments that would foment employment

³⁸ Shahid Yusuf, "Garment Suppliers Beware: The Global Garments Value Chain is Changing," International Growth Centre, accessed May 2017. doi S-37044-PAK-1.

growth within the textile and garment sector. Potential areas of investment may include new machines as well as process innovation.

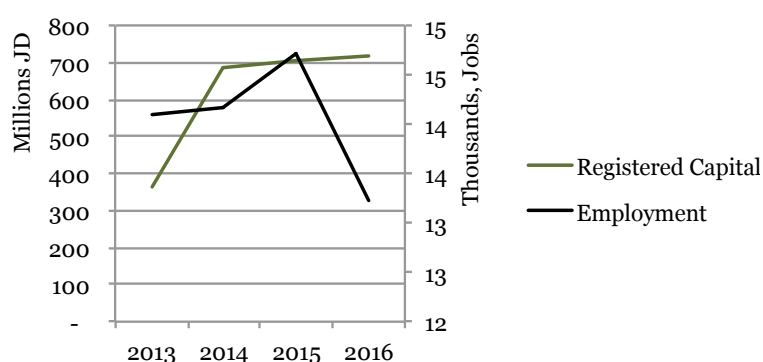
Chemicals & Cosmetics

The chemical and cosmetics sector in Jordan is an essential part of the country's industrial base, accounting for 32.1 per cent of domestic exports in 2014³⁹ and nearly 11 per cent of value-added in 2013, according to Department of Statistics figures (Table 4). The sector consists of both state-owned and privately owned companies and accounted for 9 per cent of non-mining industrial employment in 2015 according to Jordan Chamber of Industry figures. There are a total of eight chemical companies listed on the Amman Stock Exchange. They include the Industrial, Commercial, and Agricultural; Premier Business and Projects Company; Jordan Chemical Industries, National Chlorine Industries, Jordan Industrial Resources, Comprehensive Multiple Project Company, the Arab Pesticides and Veterinary Drugs MFG, and Intermediate Petrochemicals Industries. Companies producing potash and phosphate are some of Jordan's most longstanding. Arab Potash, which extracts minerals from the Dead Sea for the production of potash, a salt-based fertiliser input, was founded in 1956, and is the eight largest producer of potash in the world. Jordan Phosphate Mines Company was founded in 1953 and is a major producer of phosphates, which are also an important input of fertiliser.

Other key products include petro-chemicals, consumer products, and raw and processed materials for other industrial sub-sectors. According to the Jordan Strategy Forum's January 2017 Product Space study, products produced in Jordan's chemical sector are more sophisticated⁴⁰ in comparison to products produced in other key industrial sectors such as the textile sector but less sophisticated than products produced in the transport equipment sector, the instruments sector and the wood and wood articles sector.⁴¹

As previously noted, in recent years, the industry has experienced an increase in overall investment combined with a significant drop in employment (see Figure 16). The number of registered firms increased from 597 to 641 between 2013 and 2016. Chemical sector exports in general have declined since 2014. This has in large part, been driven by a drop in fertiliser exports (see Figure 17). However, inorganic chemical exports, whose major recipients include Saudi Arabia, Turkey, and India, also experienced significant declines.

Figure 16
Jordan Chemical and Cosmetics Sector, Selected Indicators 2013-2016



Source: Jordan Chamber of Industry

³⁹ Jordan's Product Space,' the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

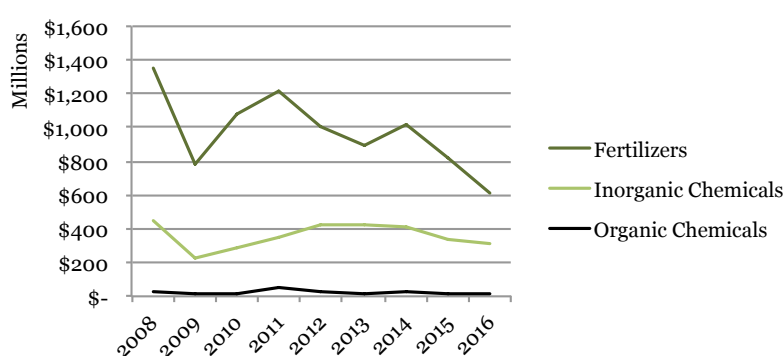
⁴⁰ The sophistication metric cited in the Jordan Strategy Forum's Product Space paper is based on the degree to which a given product is typically exported by rich or poor countries. Products exported by rich countries as opposed to poor countries exhibit higher values on the sophistication scale.

⁴¹ 'Jordan's Product Space,' the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

In 2016, India accounted for 23 per cent of fertiliser exports, followed by China (16 per cent), Ethiopia (8.8 per cent), and Turkey (8.7 per cent). Whether or not the large decline in the export of this product is the result of lack of access to overland trade routes in the wake of the border closings with Iraq and Syria, needs to be studied further. The cost and limited availability of energy inputs may also be another factor limiting production.

In general, the chemical industry produces high value-added products and is deeply integrated in global value chains. Products in their early stages are closely linked to commodities markets.⁴² Growth in this industry is inextricably linked to overall industrial production. In recent years, the chemical industry has seen weak global growth on the back of slowing economic growth and falling oil prices.⁴³

Figure 17
Jordan Chemical Exports, 2008-2016



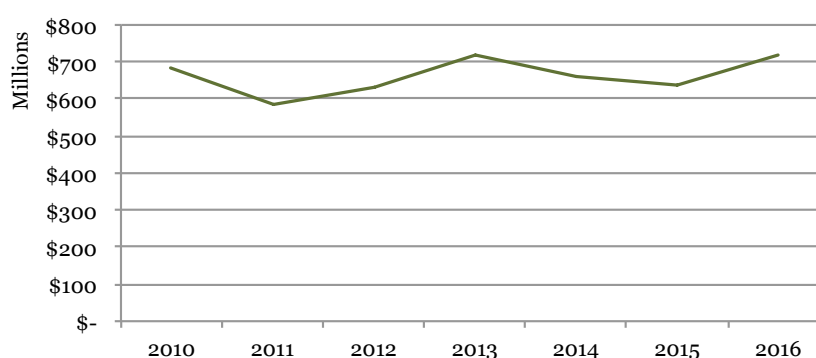
Source: Trading Economics

Further research needs to be conducted in order to gain a better understanding of what kinds of strategies would drive job creation in the chemical and cosmetics sector. Expanding and entrenching access to existing export markets clearly represents one approach. Industry research has also highlighted the growing relevance of digitisation, machine learning, and artificial intelligence in this sector. Firms will increasingly invest in these technologies to integrate manufacturing systems and reduce labour and operating costs.⁴⁴ This suggests that technology investments while lowering prices and increasing competitiveness, might well decrease overall employment in the sector in the short term.

Medical & Therapeutic

The medical and therapeutic sector is a broad category that includes pharmaceutical production as well as the production of certain medical devices and supplies. Jordan's pharmaceutical industry, which dates back to the 1960s, was estimated at 900 million US dollars in total revenues in 2015

Figure 18
Jordan Pharmaceutical Exports, 2010-2016



Source: Trading Economics

⁴² 'Mapping Global Value Chains,' OECD, December 2012, https://www.oecd.org/dac/aft/MappingGlobalValueChains_web_usb.pdf

⁴³ '2017 Chemical Trends,' Price Waterhouse Coopers, <https://www.strategyand.pwc.com/trend/2017-chemicals-industry-trends>

⁴⁴ Ibid.

and is Jordan's second largest export category after knitted or crocheted textile products. In 2013, it accounted for approximately 10 per cent of value-added (Table 4). Approximately four fifths of production is for exports, with 90 per cent of foreign sales occurring in Arab countries.⁴⁵ The remaining ten per cent of production serves the domestic market and is an important factor in Jordan's medical tourism industry. According to the Oxford Business Group, the industry employs approximately 5,000 people and creates an additional 3,000 indirect jobs in packaging, shipping, and marketing.⁴⁶

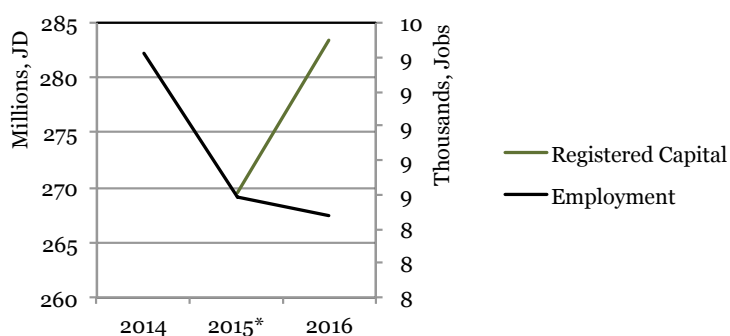
Jordan's basket of export products is diverse and includes a wide range of medicines and dosage forms. Historically, pharmaceutical production has been focused on branded generic drugs.⁴⁷ Growing competition from lower cost producers in other markets therefore represents a threat to future market share. Jordan's pharmaceutical sector is highly fragmented with no one company controlling more than 10 per cent of the market. Hikma Pharmaceuticals is the largest company and employs more than 5,000 people across the WANA region.⁴⁸ The majority of companies source their raw materials from Asian suppliers, primarily China and India.

Pharmaceutical exports have experienced sporadic growth in recent years, declining in 2011 recovering in 2012 and 2013 and then declining again in 2014 and 2015. The overwhelming majority of exports go to WANA countries, where Saudi Arabia accounts for 24 per cent, Algeria 14, Iraq 12, the UAE 7.5, Sudan 7.1, and Lebanon 6.6. The United States accounts for an additional 5.7 per cent of Jordan's pharmaceutical exports. The Iraqi market has traditionally been an important trade partner for the Jordanian pharmaceuticals industry, however in 2016 there were no recorded Iraq-bound exports in this category.

Other important sub-sectors within the medical and therapeutic sector include natural medical cosmetics, veterinary therapeutic products, laboratory reagents, medical devices and supplies, and visual and audio-visual equipment.

As previously noted, between 2013 and 2016, the overall medical and therapeutic sector saw an increase in registered capital combined with a steady decrease in employment. This coincided with an increase in the number of registered firms: in 2014 there were 108 medical and therapeutic firms registered with the Jordan Chamber of Commerce; in 2016 this number grew to 114. According to the Jordan Investment Commission, 99 per cent of the workers in these factories are Jordanian.

Figure 19
Jordan Medical & Therapeutic Sector, Selected
Indicators, 2013-2016



Source: Jordan Chamber of Industry

⁴⁵ 'Pharmaceuticals propel Jordan's economic diversification,' The Jordan Times, September 27, 2014, <http://www.jordantimes.com/news/business/pharmaceuticals-propel-jordan%E2%80%99s-economic-diversification>

⁴⁶ Ibid.

⁴⁷ 'Jordan's Competitiveness Report 2007,' USAID, http://pdf.usaid.gov/pdf_docs/Pnadm945.pdf

⁴⁸ Ibid.

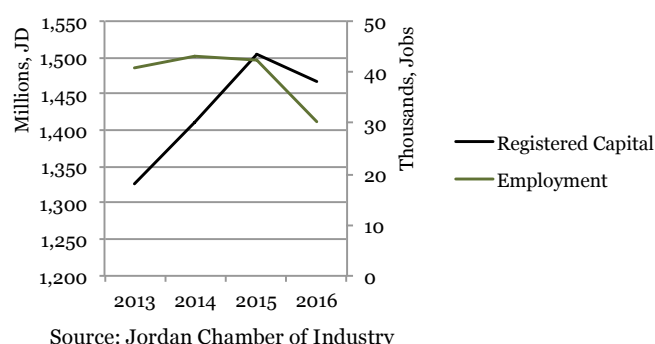
According to reports on the global pharmaceutical industry, the world market for medicines is on the rise as a result of economic growth in emerging markets, aging populations, and the growing prevalence of lifestyle related illnesses such as diabetes and heart disease. At the same time, tightening regulations in the United States and Europe shrinking government budgets in major WANA oil economies will limit growth potential.

Further research is necessary to gain a clearer understanding of the degree to which growth in Jordan's pharmaceutical sector would lead to job creation. As with other industrial sectors, the pharmaceutical sector is a high-value added sector that relies on a highly trained human capital base. Jordanian companies may increase sales by accessing new markets beyond the WANA region. However, it is possible that increased investment would lead to little job creation in the short-term.

Engineering, Electrical & IT

Jordan's engineering, electrical and IT sector consists of a range of sub-sectors including electrical home appliances, electronic devices, equipment for agricultural and industrial use, vehicles and transport equipment, and electronic hardware. There were a total of 6,281 firms operating in this sector in 2016, more than in any other industrial sector in Jordan. Jordan Chamber of Industry 2014 figures classify approximately 6 per cent of these entities as industrial and 94 per cent as craft facilities. As previously noted, between 2013 and 2016, it saw a slight increase in the number of registered firms combined with a simultaneous decrease in both investment and registered capital. Unlike in other industrial sectors, investment and employment trends appear to work in tandem: investment numbers saw a steep decline in 2016 while employment numbers began to drop off in 2015 and continued to decline into 2016.

Figure 20
Jordan Engineering, Electrical & IT Sector, Selected Indicators, 2013-2016



Overall, this sector accounts for a small proportion of Jordan's total value-added: in 2013, the computer, electronic and optical sector was equivalent to 0.84 per cent of value-added, while electrical equipment was equivalent to 2.5 per cent and machinery and equipment 0.89 per cent, according to Department of Statistics figures (Table 4). The Jordan Strategy Forum's ranking of product sophistication characterises machinery and mechanical appliances as moderately sophisticated and instruments sector products as highly sophisticated. Machinery and mechanical appliances accounted for 4.7 per cent of domestic exports while instruments sector products accounted for 0.01 per cent of domestic exports in 2014.⁴⁹

Exports in this sector go primarily to WANA countries and have experienced sporadic growth and decline since 2008 (see Figure 21). Jordan's primary trade partners for electrical and

⁴⁹ Jordan's Product Space, the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

electronic equipment exports include the United Arab Emirates (33 per cent), Iraq (20 per cent), Saudi Arabia (14 per cent), Palestine (14 per cent), and Kuwait (14 per cent).⁵⁰

For machinery, Jordan's primary trade partners for machinery exports include Saudi Arabia (19 per cent), the United Arab Emirates (11 per cent), Palestine (10 per cent), the United States (10 per cent), and Israel (9 per cent).

Further research is necessary to gain a clearer understanding of the degree to which increased investment in this sector would generate employment for Jordanian workers.

The overwhelming proportion of craft as

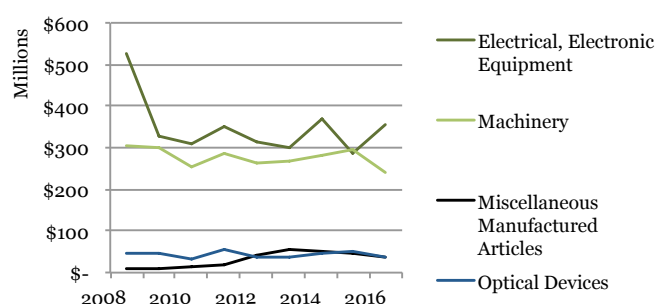
opposed to industrial facilities registered with the Jordan Chamber of Commerce in this sector suggests that a high number of industry players are SMEs rather than large industrial companies. This, combined with the fact that a large proportion of raw materials in this sector are imported, suggests that while the sector is highly fragmented the potential for indirect job creation amongst suppliers may be limited.

Plastic & Rubber

Jordan's plastic and rubber sector produces various products including plastic consumer products, plastic construction materials, plastic materials for industrial use, rubber tires, and rubber materials for industrial use. The sector plays an important role providing input materials for a range of other sectors. There were a total of 571 firms operating in this sector in 2016, according to Jordan Chamber of Industry figures. This represented an increase from the first semester of 2015, in which there were total of 513 firms in operation. Approximately 42 per cent of these firms are classified as industrial facilities; the remaining 58 per cent are classified as craft facilities. As previously noted, between 2015 and 2016, the sector saw an increase in registered capital combined with a decrease in employment (see Figure 22).

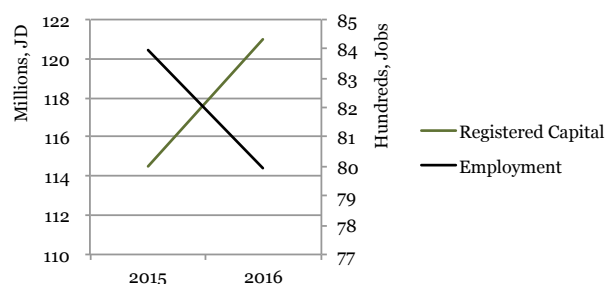
The plastic and rubber sector accounts for approximately 2.52 per cent of Jordan's value-added (Table 4), according to Department of Statistics 2013 figures. Domestic exports from this sector were equivalent to 3.96 per cent of domestic exports.⁵¹ The Jordan Strategy Forum characterises

Figure 21
Jordan Engineering, Electrical & IT Sector Exports, 2008-2016



Source: Trading Economics

Figure 22
Jordan Plastic & Rubber Sector, Selected Indicators, 2015-2016



Source: Jordan Chamber of Industry

⁵⁰ Trading Economics, <https://tradingeconomics.com/jordan/exports-by-category>

⁵¹ Jordan's Product Space, the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

products produced in this sector as moderately sophisticated, roughly equivalent to products produced in Jordan's chemical sector.

Between 2008 and 2016, plastic and rubber sector exports experienced irregular growth followed by steep decline in the case of plastic products and sporadic decline in the case of rubber products (see Figure 23). Jordan's plastics exports are primarily oriented towards WANA countries, with Iraq accounting for 27 per cent, Saudi Arabia 18 per cent, Israel 16 per cent, Kuwait 16 per cent, and Palestine 5 per cent. Rubber export destinations include Saudi Arabia (20 per cent), Malaysia (16 per cent), Italy (13 per cent), the United States (8.4 per cent), and Iraq (3 per cent).

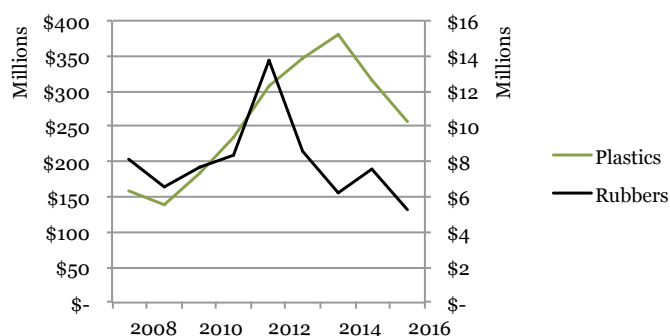
The plastic and rubber sector occupies an inherently upstream position within global value chains. Its growth potential depends upon its ability to link up with and feed downstream industrial and consumer good sectors. The global plastic packaging market is expected to grow in coming years as a result of increased demand arising from growing middle classes in emerging markets. Growth of the plastic and rubber sector in Jordan will likely depend on its ability to support consumer product and industrial sectors that service the WANA region. Further research is necessary to determine the degree to which investment in this sector would lead to job creation.

Paper & Packaging

Jordan's paper and packaging sector products include paper pulp, paper and cardboard, printing and publishing, and stationary and packaging products. There were a total of 938 firms operating in this sector in 2016 having increased from 852 in 2013. According to Jordan Chamber of Industry 2014 figures, approximately 21 per cent of these entities may be classified as industrial establishments, while the remaining 79 per cent are craft establishments. As previously noted, between 2013 and 2016, this sector saw a sharp increase in both investment and employment followed by a decrease in both areas.

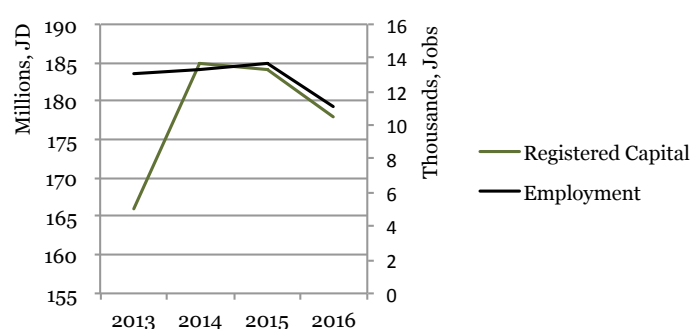
The paper and packaging sector accounts for approximately 2.37 per cent of value added, according to Department of Statistics 2013 figures and contributed 2.86 per cent of domestic

Figure 23
Jordan Plastic and Rubber Exports, 2008-2016



Source: Trading Economics

Figure 24
Jordan Paper & Packaging Sector, Selected Indicators, 2013-2016

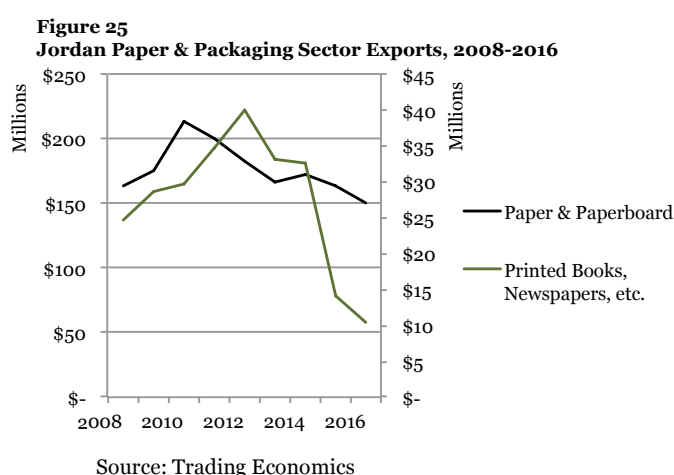


Source: Jordan Chamber of Industry

exports in 2014 (see Table 4).⁵² The Jordan Strategy Forum classified plastic and rubber sector products as moderately sophisticated, similar to chemical sector products.

Paper and packing exports experienced steady growth between 2008 and 2010 followed by sporadic decline between 2011 and 2016. Jordan's primary trading partners for paper and paperboard include Saudi Arabia, which accounted for 51 per cent in 2016; Iraq, which accounted for 23 per cent; and the United Arab Emirates, which accounted for 9.4 per cent. Decreased commerce with Iraq as a result of the on-going conflict there may explain this decline in paper and paperboard exports. Printed books and newspapers, a downstream paper sector product category also registered a steep decline in exports between 2013 and 2016.

Industry analysts predict that the paper and packaging industry will continue to grow at the global level. Middle classes in emerging markets will be a driving factor behind this trend. The sector is tightly linked with downstream consumer goods and food processing industries, who for ecological reasons, will increasingly rely on paper packaging.⁵³ Printing and paper converting technologies will become increasingly important, as brands demand more colourful packaging. By investing in new machines that increase efficiency and reduce waste, firms will have the opportunity to boost competitiveness and value-added.⁵⁴



Like other sectors discussed previously, the paper and packaging sector is an upstream sector whose growth potential is inextricably linked to the performance of downstream sectors such as food processing and other consumer product industries. Further research is necessary to determine the degree to which investment in this sector would lead to job creation.

Wood & Furniture

The wood and furniture sector in Jordan consists of wood panel, veneer, plywood, wooden building products; wooden carpentry for houses, buildings and apartments; decorative items, and furniture. Between 2013 and 2016, the number of firms operating in this sector grew from 2,845 to 2,873. According to the Jordan Chamber of Industry 2014 figures, approximately 3 per cent of entities may be classified as industrial establishments; the remaining 97 per cent are craft establishments, or workshops. Workshops tend to produce handmade and custom made furniture, while industrial facilities produce standard models using automated production techniques.⁵⁵ In recent years, the industry has experienced a decrease in investment followed by a

⁵² 'Jordan's Product Space,' the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

⁵³ 'Global Paper Packaging Material Market Set for Rapid Growth,' Zion Market Research, <https://www.zionmarketresearch.com/news/global-paper-packaging-material-market>

⁵⁴ 'Growing the future,' Pricewaterhouse Coopers, February 2011, <https://www.pwc.com/gx/en/forest-paper-packaging/publications/pdf/growing-future-new-version.pdf>

⁵⁵ 'Strategic Plan for Furniture Manufacture Sector in Jordan,' GOPA Worldwide Consultants, December 2013, <http://etvetreform.gov.jo/wp-content/uploads/2014/02/Furniture-Manufacture-Sector-plan-Jordan-2014.pdf>

recovery. During the same period employment numbers plateaued and then declined substantially between 2015 and 2016, according to Jordan Chamber of Industry figures (see Figure 26).

Wood and furniture products accounted for approximately 1.85 per cent of value-added in 2013 (see Table 4) and 0.14 per cent of domestic exports in 2014.⁵⁶ The Jordan Strategy Forum classifies wood sector products as highly sophisticated with a score well above the chemical sector but slightly below the instruments sector.

Wood product sector exports experienced steady growth between 2008 and 2012 followed by a sharp decline between 2013 and 2016. Jordan's primary trading partners in this sector include Saudi Arabia, which accounts for 37 per cent of exports; Syria, which accounts for 22 per cent; Qatar, which accounts for 14 per cent, and Iraq, which accounts for 3.9 per cent. The slowdown of commerce with Syria and Iraq resulting from the on-going conflicts in both countries may well explain the significant drop in wood product exports that began in 2013.

A European Union technical assistance assessment carried out in 2013 highlighted the skills disparity between workers employed in industrial facilities and workers employed in workshops. According to their findings, industrial facilities rely on automated machine-base processes that require little skill on the part of the worker but employ a much larger proportion of workers than craft facilities. Craft facilities employ a far fewer number of highly trained artisans. In interviews, industry stakeholders stressed the need for additional skilled workers in the sector.⁵⁷

According to industry reports, North America accounts for the largest market share of furniture products, followed by Europe and Asia Pacific. This represents an opportunity for Jordan's wood and furniture sector, if furniture manufacturers can develop strategies to capitalise on the US Jordan Free Trade Agreement. Industry analysts also note the growing importance of 'green furniture' production and increased competition from low cost producers in China and Vietnam.⁵⁸

Figure 26
Jordan Wood & Furniture Industry, Selected Indicators, 2013-2016

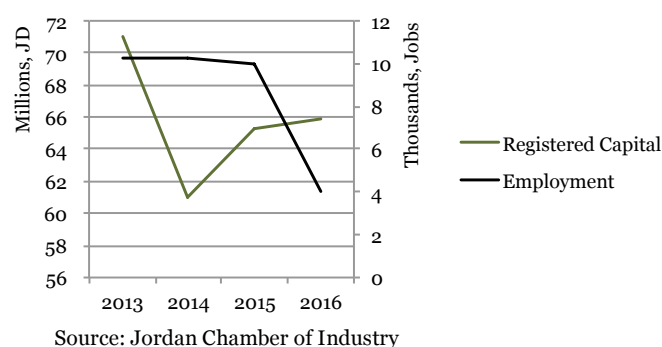
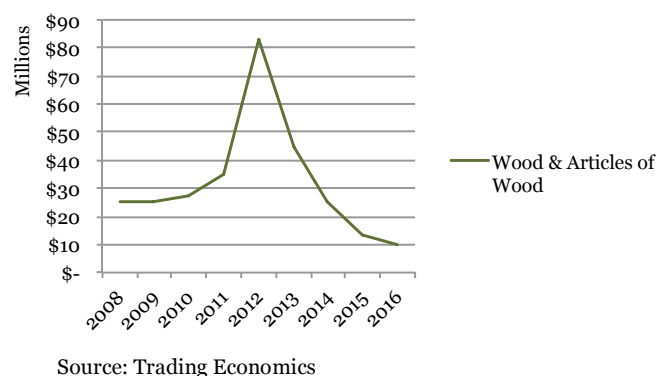


Figure 27
Wood Sector Exports, 2008-2016



⁵⁶ Jordan's Product Space, the Jordan Strategy Forum, January 2017, http://jsf.org/sites/default/files/P_S_1_E.pdf

⁵⁷ 'Strategic Plan for Furniture Manufacture Sector in Jordan,' GOPA Worldwide Consultants, December 2013, <http://etvetreform.gov.jo/wp-content/uploads/2014/02/Furniture-Manufacture-Sector-plan-Jordan-2014.pdf>

⁵⁸ Ibid.

Table 3: Gross Output by Sector, 2013*		
	Gross Output (JD Thousands)	Percent of Total Output
Extraction of Petroleum & Natural Gas	8,629	0.06%
Other Mining & Quarrying	949,891	6.23%
Refined Petroleum Products	4,203,824	27.57%
Food Products	2,097,105	13.75%
Beverages	512,134	3.36%
Tobacco	667,526	4.38%
Textile	63,189	0.41%
Wearing Apparel	396,276	2.60%
Leather & Related Products	36,623	0.24%
Pharmaceutical Industry	817,355	5.36%
Computer, Electronic, Optical	101,002	0.66%
Electrical Equipment	635,506	4.17%
Machinery & Equipment	114,075	0.75%
Non-Metallic Mineral Products	760,907	4.99%
Basic Metals	514,978	3.38%
Fabricated Metal Products (Except Machinery)	554,608	3.64%
Motor Vehicles, Trailers & Semi-Trailers	52,039	0.34%
Plastic & Rubber Industries	402,533	2.64%
Chemical & Cosmetic Industries	1,214,832	7.97%
Paper & Packaging	320,067	2.10%
Printing & Reproduction of Recorded Media	167,614	1.10%
Wood Products (Except Furniture)	45,465	0.30%
Furniture	173,660	1.14%
Other Manufacturing	119,380	0.78%
Electricity, Gas Steam and Air Conditioning Supply	317,103	2.08%
Water Collection, Treatment & Supply	549	0.00%
Waste Collection, Treatment and Disposal Activities	3,584	0.02%

*Source: Jordan Department of Statistics

Table 4: Value-Added by Sector, 2013*		
	Value Added (JD Thousands)	Percent of Total Value Added
Extraction of Petroleum & Natural Gas	7,859	0.18%
Other Mining & Quarrying	703,653	16.04%
Refined Petroleum Products	330,470	7.54%
Food Products	635,197	14.48%
Beverages	262,916	5.99%
Tobacco	471,777	10.76%
Textile	29,428	0.67%
Wearing Apparel	197,571	4.50%
Leather & Related Products	11,715	0.27%
Pharmaceutical Industry	439,093	10.01%
Computer, Electronic, Optical	36,723	0.84%
Electrical Equipment	109,582	2.50%
Machinery & Equipment	39,131	0.89%
Non-Metallic Mineral Products	367,082	8.37%
Basic Metals	191,531	4.37%
Fabricated Metal Products (Except Machinery)	199,919	4.56%
Motor Vehicles, Trailers & Semi-Trailers	20,581	0.47%
Plastic & Rubber Industries	110,557	2.52%
Chemical & Cosmetic Industries	467,314	10.66%
Paper & Packaging	103,877	2.37%
Printing & Reproduction of Recorded Media	88,923	2.03%
Wood Products (Except Furniture)	15,444	0.35%
Furniture	65,673	1.50%
Other Manufacturing	32,537	0.74%
Electricity, Gas Steam and Air Conditioning Supply	609,471	13.90%
Water Collection, Treatment & Supply	188	0.00%
Waste Collection, Treatment and Disposal Activities	1,420	0.03%

*Source: Jordan Department of Statistics



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