International Labour Organization

Growth, Macroeconomic Policies and Employment:

The impact of macroeconomic and trade policies on employment generation in Jordan

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Table of contents

List of figures

List of tables

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The ILO Partnership with the RDPP II in Jordan aims to support the Government of Jordan (GoJ) and national constituents in responding to the youth employment challenge and supporting dialogue around policies and strategies for improving the livelihoods of young Syrians and Jordanians through evidence-based research and analysis.

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Executive summary

Between 1998 and 2008, Jordan experienced a period of high economic growth, of around 7 to 8 per cent annually. While the country made significant gains across several human development indicators, including health, education and poverty reduction, unemployment rates remained high, particularly among women and youth.

The high-growth period ended when the global financial crisis hit in 2009 and 2010 and was further impacted by the Arab uprisings and the Syrian war in 2011. Regional instability in the aftermath of the so-called Arab Spring, and the influx of Syrian refugees, severely impacted the Jordanian economy, hindering the recovery from the global financial crisis. Real gross domestic product (GDP) growth dropped from 8 per cent in 2007 to 2 per cent in 2010, and low growth persisted throughout the period 2010–2019. A modest economic recovery in 2018 and 2019 was short-lived because of the COVID-19 pandemic in 2020.

In the 1990s, Jordan crafted a proactive policy package that featured trade liberalization, macroeconomic stabilization and the privatization of state-owned enterprises, and the country adopted an export-led growth model of industrialization. In the aftermath of the global financial crisis and the Arab uprisings, however, macroeconomic policies became mostly reactionary. Repeated shocks and regional instability threw the Jordanian economy off its high-growth track, prompting a containment response to the negative impacts on key macroeconomic variables, such as inflation, exchange rates, the depletion of foreign reserves, a high debt-to-GDP ratio and a growing fiscal deficit. These macroeconomic policies had little effect on the high unemployment rates, particularly among women and youth, which continued to rise. Economic growth proved to be highly susceptible to external shocks. For Jordan, the structure of the economy and the composition of growth are inherently vulnerable because of the high reliance on foreign direct investment (FDI), foreign aid, workers' remittances and imported fossil fuels, as well as a high concentration in terms of export markets.

Unemployment among youth (ages 15–24 years) remains quite high, particularly for women. The trend indicates an initial decline in the unemployment rate at the beginning of the high-growth period (1998–2008), compared with 1995 levels. However, by 2009, youth unemployment returned to levels closer to those in the 1990s. Trends also confirm that the female unemployment rate is persistently higher than the male rate, suggesting low elasticity of employment with respect to growth. Youth unemployment rates stabilized, albeit around elevated levels, during the period 2011–2014 and rose during the period 2015–2019. In 2021 youth unemployment rates were 54 per cent and 37 per cent, up from 49 per cent and 34 per cent in 2019, for females and males, respectively. For male youth, these levels are significantly higher than the lowest level recorded over the period 1998–2021 (22 per cent in 2008). Meanwhile, female youth experienced an upward trend from the 2003 level of 40 per cent. These alarming trends persist despite the Government's efforts to reduce youth unemployment through job-creation programmes and the promotion of small and medium-sized enterprises (SMEs) and entrepreneurship, and financial support such as microfinance.

In terms of the labour market, workers of intermediate-level skills comprise the largest share of employment, whereas university graduates, as well as young men and women with basic education, face high levels of unemployment. Jordanian youth tend to prefer public-sector jobs because they offer better work conditions and the perception of job security. This explains the high share of youth employed by the public sector.

The decline in exports of manufactured goods, particularly from labour-intensive industries that were impacted by COVID-19, is expected to negatively impact employment levels. However, this is not necessarily conclusive in the case of Jordan, since the manufacturing sector employed a large number of migrant workers and did not constitute a large share of total employment for Jordanian nationals, particularly firms in the Qualified Industrial Zones (QIZs) and Simplified Economic Zones (SEZs). However, indirect impacts and multiplier effects may have contributed to a decline in overall employment levels. It is important to note that the performance of the

Jordanian export sector had deteriorated even before the pandemic, as the country's comparative advantage had narrowed.

Econometric analysis using a vector autoregressive (VAR) model shows that money supply (M2) positively affects GDP and negatively affects unemployment in the short run. However, the monetary policy of the Central Bank of Jordan (CBJ) seems to be ineffective in stabilizing the inflation rate. This can be attributed to the fact that inflation in Jordan tends to be cost-push, rather than demand-pull, driven mostly by international oil prices and the supplies of natural gas and fuels from neighbouring countries (e.g., Egypt and Iraq). In line with the country's overall macroeconomic policies, monetary policies are overly focused on managing and stabilizing key monetary variables. However, during the period 2011–2022, the CBJ launched several programmes and initiatives aimed at enhancing financial inclusion, promoting entrepreneurship and supporting private-sector growth, particularly in vital sectors, with a view to boosting employment generation. Additionally, the CBJ tried to shield these programmes from the frequent changes in interest rates and other monetary policy tools. Nonetheless, the impact of these programmes on youth unemployment remains modest. Indeed, there is a need to thoroughly evaluate these programmes and assess their overall impact to identify where improvements are required and where there is potential to scale them up.

The results of our econometric analysis, using a generalized autoregressive conditional heteroscedasticity (GARCH) model, show that credit to the private sector and inflows from workers' remittances were among the most important determinants of growth in Jordan over the period 2004–2021. Workers' remittances are, expectedly, a stabilizing factor since they sustain household consumption, which plays a leading role in sustaining effective demand within the local economy during economic crises. The results also indicate a strong positive correlation between growth vulnerability and government debt. This means that economic growth is more vulnerable when levels of government debt are high. This can be explained by the role that foreign borrowing plays in replenishing foreign reserves and sustaining essential imports, combined with the role that domestic borrowing plays in financing the fiscal deficit and, thus, sustaining public expenditure. Moreover, the decline in economic growth in the period 2009–2011 was correlated with a higher rate of nonperforming loans, implying vulnerabilities in the financial sector, which can trickle down to private investment, employment and consumption.

The analysis also shows that increases in domestic tax revenue increases GDP and reduces unemployment in the short run. However, the effect is negative on GDP in the long run. The results also show the weak impact of current fiscal policies on unemployment levels, particularly in the medium term and long run. Stimulating economic growth and employment generation through fiscal policy may not be a viable option because of the need to maintain strict fiscal discipline to tackle increasing fiscal deficits and the debt-to-GDP ratio. Therefore, there is a need to restructure fiscal policies and devise selective fiscal stimulus packages to target employment generation with little or no impact on the fiscal balance.

Scenario-based projections, using a vector-error cointegration model (VECM), indicate an increase of 1.1 per cent in GDP growth rate in an optimistic scenario in 2022, and 0.6 per cent in 2024 (around 3.2 and 3 per cent, respectively). In a pessimistic scenario, the growth rate in 2024 will average around 1.5 per cent. This effect is magnified by the increase in government debt, which renders the economy more vulnerable. Despite the significant decline in unemployment in the optimistic scenario, pushing unemployment below the two-digit level will require more than the kinds of fiscal reforms that lead to significant improvements in macroeconomic variables. Meanwhile, the response of GDP growth to monetary policy shows that only changes in money supply (M2) can have an impact on growth. An expansionary monetary policy scenario will have a limited negative impact on the inflation rate. However, the positive effects of expansionary monetary policy on growth and, consequently employment, outweighs the negative impact on inflation.

While free trade and cooperation agreements have typically played a central role in establishing

an export-led growth model in Jordan, these limit policy space since key trade and investment policies and some fiscal and policy tools (e.g., taxes and tariffs on imports and subsidies for exporting industries) are anchored in those agreements. Additionally, Jordan has neither fully nor wisely used the grace and transitional periods embedded in these FTAs to protect and boost infant industries to maturity levels, as shown by the performance of exporting industries during the period 2009–2019, compared with the period 1998–2008.

While the export-led growth model adopted in Jordan in the late 1990s was the main driver of growth during the high-growth period 1998–2009, the model had limited success in terms of generating employment and lacked sustainability. While the first stage of industrialization through export-oriented manufacturing, capitalizing on FTAs, was relatively successful, the next stage was not. Hence, the Jordanian export-growth model remained trapped in its initial phase and was eventually depressed. External shocks accelerated the inevitable outcomes that were mainly due to design flaws.

Policy recommendations

Building on the analysis presented in this report, a set of policy recommendations are proposed as follows:

(1) **develop a national employment strategy** for Jordan to act as an umbrella for all employment-related policies and programmes, and ensure effective monitoring and evaluation of policies and programmes;

(2) **restructure foreign debt and rethink fiscal policies** in a way that better targets employment generation with no or little impact on the fiscal balance;

(3) **ease contractionary monetary policy** and consider channelling credit towards promising sectors with high potential for decent job creation, including for the youth;

(4) **realize the potential of the manufacturing sector** as the main engine for growth and employment generation. This would require tackling its main flaws, including through:

(a) enhancing renewable energy sources and reducing reliance on fossil fuels;

(b) directing FDIs to ventures in the manufacturing sector that offer high-value- added forward and backward linkages, and developing policies targeting investments coupled with technology transfers and industrial expertise;

(c) devising an industrial policy and incentive structure to direct foreign investments to employment-generating projects in the manufacturing sector;

(d) localizing segments of supply chains and creating incentives for firms to reduce reliance on imported inputs;

(e) promoting innovations and investments in research and development (R&D) to capitalize on the young and educated Jordanian labour force, and incentivizing manufacturing firms to team up with research institutes in Jordan and overseas to boost innovation and technology transfers.

List of Abbreviations

ASEZA	Aqaba Special Economic Zone Authority
BDC	Business Development Centre
CBJ	Central Bank of Jordan
CPI	consumer price index
DOS	Department of Statistics, Jordan
EFTA	European Free Trade Agreement
FDI	foreign direct investment
FTA	free trade agreement
GAFTA	Great Arab Free Trade Agreement
GDP	gross domestic product
GNI	gross national income
JIB	Jordan Investment Board
MFI	microfinance institutions
NEET	not in education, employment or training
QIZs	Qualified Industrial Zones
QRCE	Queen Rania Center for Entrepreneurship
SEZs	Simplified Economic Zones
VAR	vector autoregressive model
VECM	vector-error cointegration model
WTO	World Trade Organization
YEA	Young Entrepreneurs Association

1. Introduction and overview

During the 1980s, Jordan entered a period of economic downturn triggered by the decline in aid and remittances because of the end of the oil boom. In the spring of 1989, as the economic crisis reached its height, Jordan was unable to repay its debt service obligations and turned to the International Monetary Fund for debt rescheduling. As elsewhere, the involvement of the Fund and the World Bank in Jordan's economic policymaking led to the adoption of an economic reform programme. The usual package of economic and institutional measures was suggested by the two financial institutions, comprising a phase of macroeconomic stabilization followed by a programme of structural adjustments. Success of the programme proved limited.

Between 1998 and 2008, Jordan experienced high economic growth of around 7 to 8 per cent annually. The real estate market boom following the Iraqi war in 2003 had a particularly positive impact on GDP during the period 2004–2007. However, the high-growth period came to an end as a result of the global financial crisis in 2009 and 2010. This crisis was followed by the Arab uprisings and the Syrian war in 2011, which brought instability to the region. The so-called Arab Spring and the influx of Syrian refugees made a serious impact on the Jordanian economy, hindering recovery from the global financial crisis.[1] Real GDP growth dropped from 8 per cent in 2007 to 2 per cent in 2010, with low growth persisting throughout the period 2010–2019. Modest economic recovery in 2018 and 2019 was short-lived because of the COVID-19 pandemic in 2020.

The period of high growth was made possible by an export-led open economy, whereby Jordan capitalized on bilateral and multilateral FTAs, establishing economic zones centred around export-oriented manufacturing and home-grown economic reforms. However, the current account maintained a persistent deficit, in spite of FDI inflows, mostly from Gulf countries. Over the same period, Jordan made significant gains on several human development indicators, including health, education and poverty reduction. Yet, unemployment remained high, particularly among women and youth.[2] The repetitive external shocks from 2009 to 2020 exposed economic vulnerability and structural weaknesses and hampered the key sources of foreign currency, such as exports, tourism, FDI, workers' remittances, foreign aid and other geopolitical rents. Negative economic growth of -1.6 per cent was recorded in 2020 for the first time in three decades, largely as a result of the COVID-19 pandemic. A slow, yet steady, recovery starting in 2021 resulted in economic growth of 2.2 per cent, similar to average pre-pandemic levels.

1.1. Research objective and methodology

Building on a secondary analysis of national policies and available data and statistics, this report aims to assess the extent to which fiscal, investment and trade policies have helped or hindered decent and productive job creation in Jordan.

We analysed growth, employment, macroeconomic policy, balance of payments and sectoral trends for the period 1998–2021. This is particularly key for a better understanding of the evolution of key economic sectors and the context in which different sectoral, trade and macroeconomic policies were crafted, as well as their impacts, including on the labour market, over time. Econometric analysis of the degree and determinants of economic resilience and vulnerability was also conducted, capturing the impact of external shocks over a 20-year period. Unfortunately, employment data disaggregated by services and manufacturing subsector were not available for the entire time series, which prevented a more thorough analysis of the performance of these subsectors and their capacity to generate employment. Further, the study builds on the econometric analysis to assess the impact of macroeconomic, trade and investment policies on growth and the labour market.

[1] Hausmann, Ricardo., et al., "Jordan: The Elements of a Growth Strategy", CID Faculty Working Paper No. 346, 2019.
[2] UNDP, "Millennium Development Goals Report", Jordan, 2004.

Three econometric models were used in this report, namely a vector-error cointegration model (VECM), a generalized autoregressive conditional heteroscedasticity (GARCH) model and a vector autoregressive (VAR) model.

A VECM is an error correction model, and was used to analyse, as well as project the impact of, fiscal, trade and investment policies (related to the balance of payments) and allows for capturing short- and long-term effects, accounting for variable cointegration by treating all variables as endogenous by the Johansen test. To analyse the volatility of economic growth, the GARCH model was used, given its suitability for addressing variance error that follows from serial autocorrelation. For analysing and projecting the impacts of monetary policies, a VAR model, which is normally used for analysing the transmission mechanisms in monetary policy, was used in view of the absence of any evidence of cointegration among variables.

Further to the historical trends and the econometric analyses, interviews were conducted with key representatives of the Government, workers and employers to gather further insights and validate the methodology, results and recommendations.

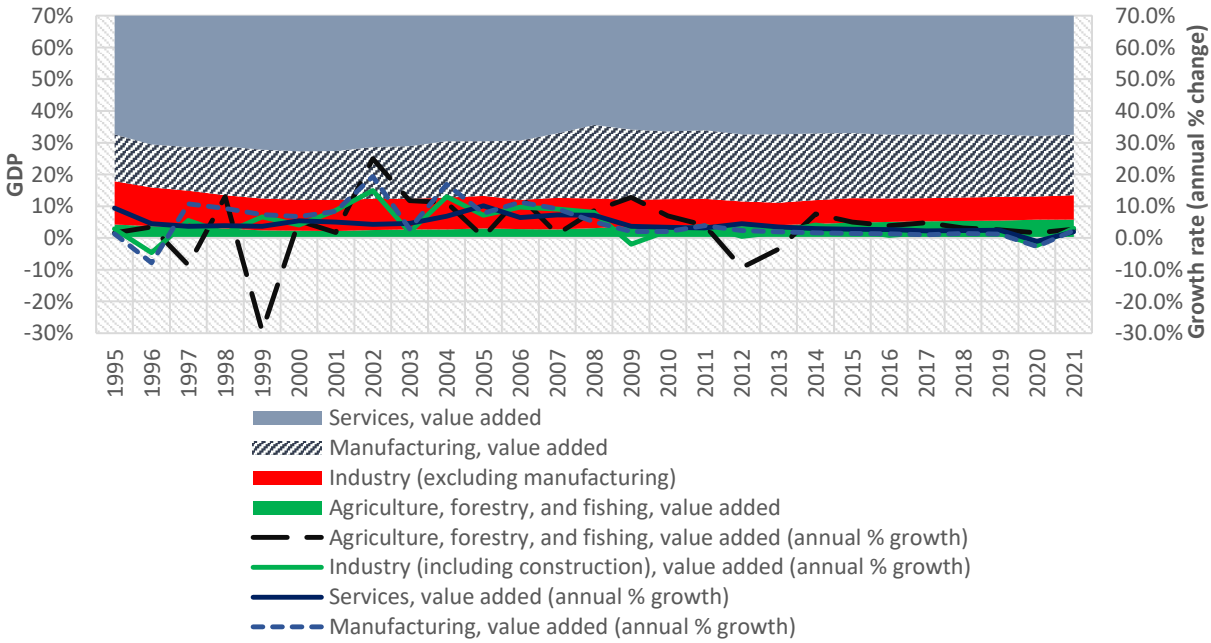
2. Economic growth analysis

2.1. Economic structure and growth decomposition

2.1.1. Economic structure

The Jordanian economy has gone through structural changes, starting in the late 1990s and through the first decade of the millennium. Trends show compelling evidence that industrialization was led by the manufacturing sector. The share of industry (including manufacturing) grew from 22 per cent, in 1998, to 30 per cent of GDP in 2008. Unlike typical industrialization experiences in other countries, the share of the agriculture sector remained constant at around 3 per cent of GDP throughout the same period. This is due to the historically small size and modest contribution of the agriculture sector in the Jordanian economy. However, the rise in share of industry in GDP came at the expense of the services sector; its share declined from 62 per cent to 59 per cent of GDP by 2008. Productivity (value added per worker) in the industrial sector grew in real terms – from US$18,060 in 1995 to around $21,786 in 2008, according to ILOSTAT. More importantly, the share of the manufacturing sector grew from 12 per cent to 21 per cent of GDP during the same period.

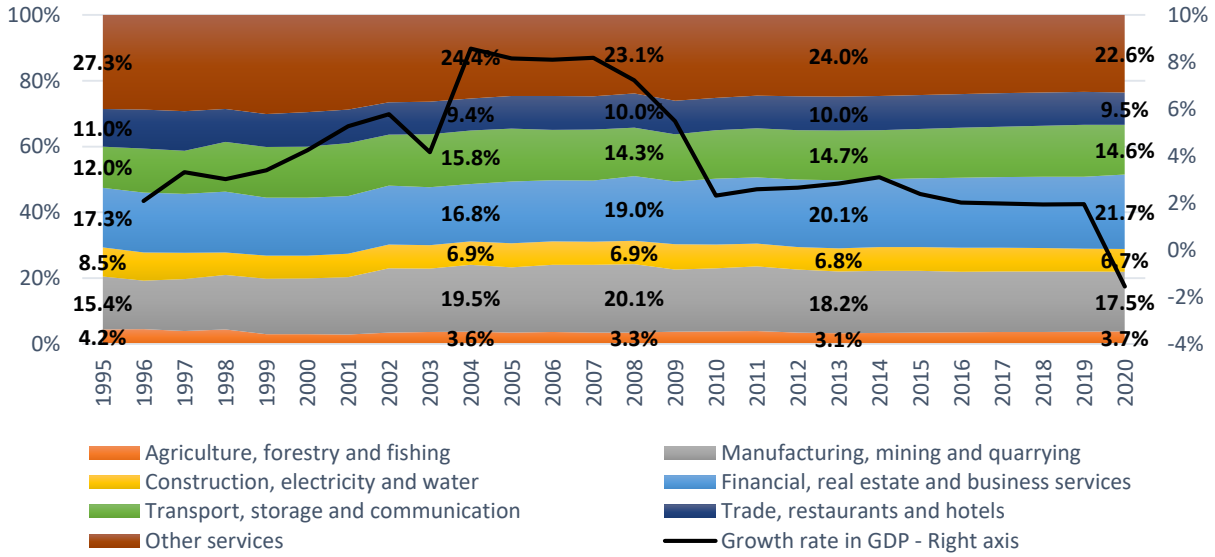
Figure 2.1. Sectoral indicators (value added as percentage of GDP and growth rate) by year



Source: World Development Indicators, World Bank.

During the period 1995–1999, manufacturing comprised only half of the industrial sector, while construction, extractive industries, electricity, and natural gas constituted the other half. By 2008, manufacturing comprised 71 per cent of the industrial sector. The growth of the manufacturing sector was the principal component of the export-led growth model, capitalizing on free trade and economic cooperation agreements and WTO membership. The model included trade liberalization and significant policy and legislative changes to attract FDIs. Disaggregating the services sector shows a significant contribution to growth of real estate, as well as financial and business services, during the high-growth period (figure 2.2).

Figure 2.2. Sectoral distribution of real GDP (left axis) and annual growth rate (right axis)



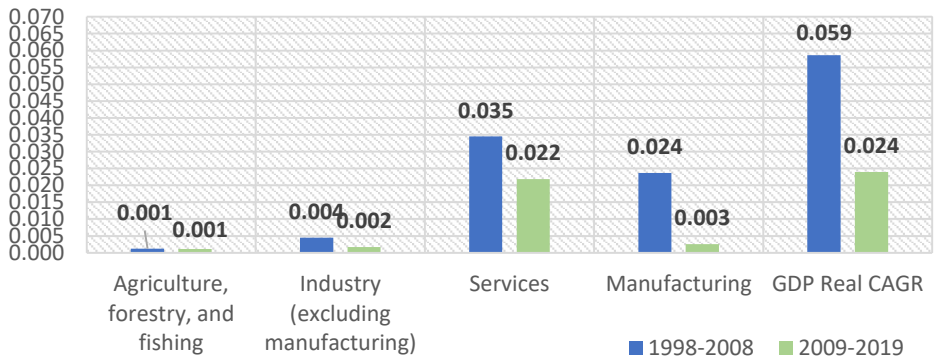
Source: CBJ statistical database.

Industry's share of total employment grew from 21 per cent, in 1995, to nearly 27 per cent of total employment in 2008, while the share of agricultural and services sectors of total employment declined over the same period. It is important to note, however, that the increase in the share of the manufacturing sector in total employment was less than expected. Moreover, the manufacturing sector employed a substantial number of foreign workers. Hence its contribution to employment generation for Jordanians, particularly youth, was modest at best.

Structural changes were prematurely accelerated between 2009 and 2019, as indicated by the rapid transformation to services. The industrialization process seemed to slow down as the share of manufacturing, in terms of both GDP and employment, declined, while the share of services increased steadily. By 2019, manufacturing accounted for only 17 per cent of GDP, while the share of services grew to 61 per cent of GDP. The manufacturing sector should have been allowed more time to mature, move up the value chain, integrate deeper into global supply chains, and build a technological base and industrial expertise. This could have been achieved through effective and well-crafted industrial policies.

2.1.2. Sources and drivers of growth

Figure 2.3. Sectoral contributions to economic growth by time period



Note: Contribution to growth is calculated as the compound average annual growth (using constant 2015 US dollars) of sectoral value added multiplied by sectoral weights based on their share in the change in GDP.

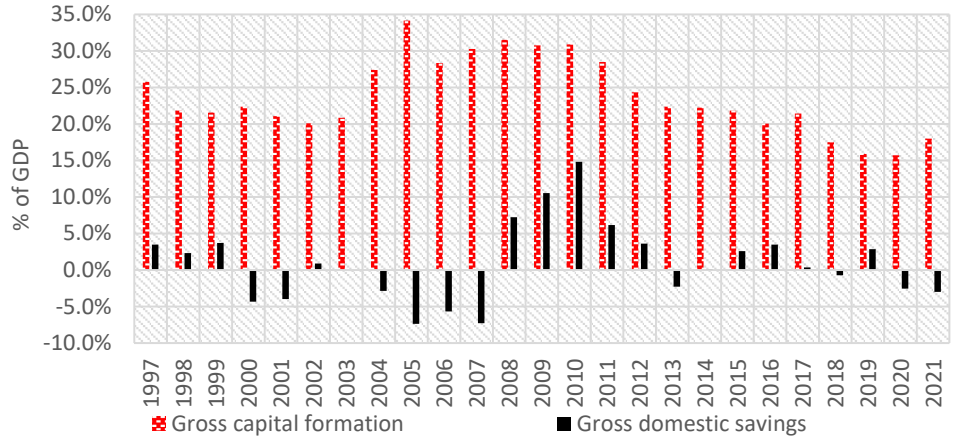
Source: Author calculations based on the World Development Indicators database, World Bank.

Figure 2.3 shows that during the period 1998–2008, economic growth was driven by services and manufacturing; their contributions to GDP compound annual growth rate (CAGR) were 0.035 and 0.024, comprising 59 per cent 40 per cent of GDP CAGR, in real terms, respectively. The contribution of the services sector was led by real estate and business services (see figure 2.2) as a result of the real estate boom after the Iraq war (2003). In comparison, the contributions of the industry (excluding manufacturing) and agriculture sectors were trivial. As economic growth slowed during the period 2009–2019, the contribution of the manufacturing sector shrank to only 0.003, accounting for only 11 per cent of compound average annual growth rate. Meanwhile, the contribution of the services sector declined to 0.022, accounting for 91 per cent of compound average annual growth rate from 2009–2019. There is no notable change in the low contributions of the industrial (excluding manufacturing) and agricultural sectors in 2009–2019, compared with 1998–2008.

This is a clear demonstration of economic transformation from a manufacturing-based to services-based economy. It is important to note, nonetheless, that the services sector, historically, has played a significant role in the Jordanian economy. Unlike many developing countries around the world, Jordan was never an agricultural economy because of water constraints and a lack of flat and fertile arable land. Further, unlike the Gulf countries and Iraq, Jordan is relatively poor in terms of natural resources.

Another major challenge that faced the export-oriented industrialization model in Jordan was the extremely low level of domestic savings. The country relied overly on FDIs, which increased vulnerability and shaped the structure of the manufacturing sector, and the economy as a whole, based on the investment choices made by foreign investors. This is not unusual in newly industrialized countries as FDIs can bridge this finance gap during the initial stages of growth and industrialization until real income grows and, consequently, domestic savings increase, as well as the capacity and effectiveness of the financial sector to channel domestic savings into productive investments. However, this requires carefully crafted policies to direct FDIs into the employment-generating manufacturing industries with backward and forward linkages, rather than services, real estate and non-tradables, which are typically characterized by lower risks and, sometimes, higher profitability. There is no evidence of such policies in Jordan. Moreover, over the last two decades, domestic savings did not grow enough to supplement, let alone substitute, foreign investments.

Figure 2.4. Gross capital formation and domestic savings by year

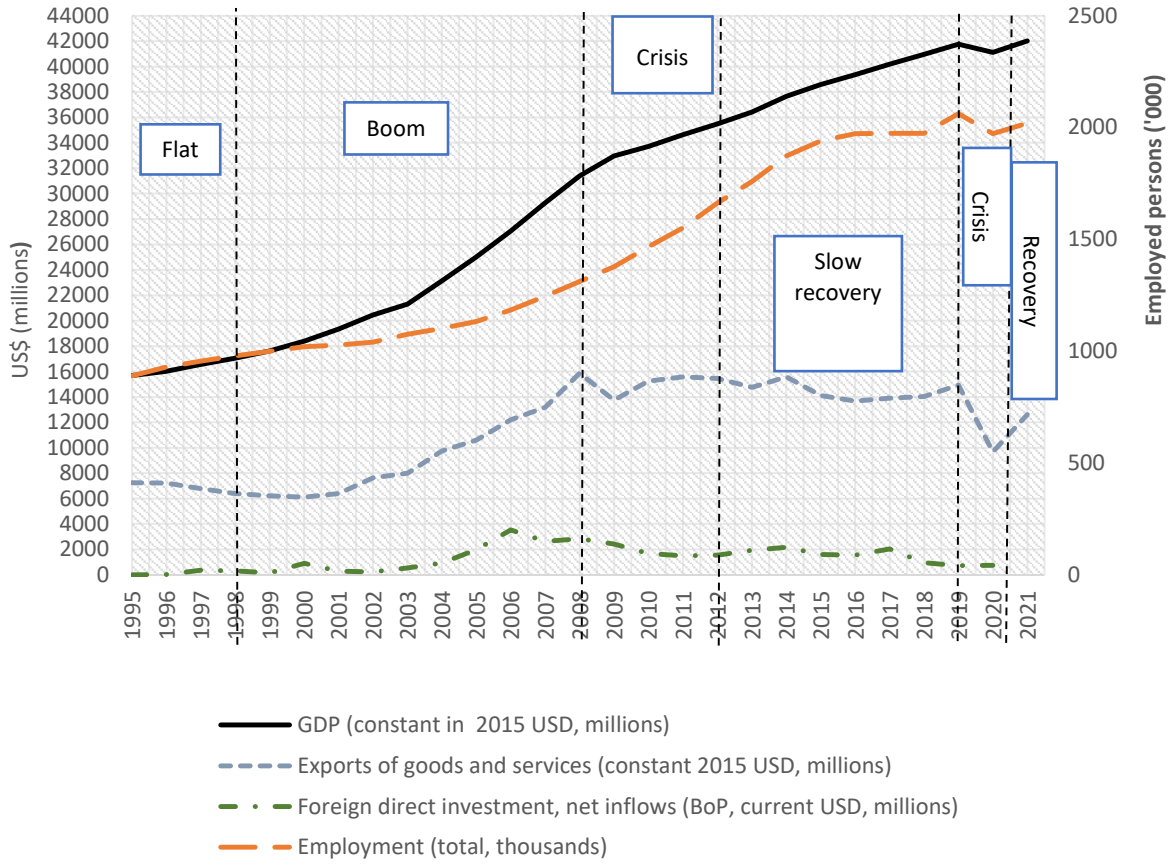


Source: World Development Indicators, World Bank.

2.2. Growth vulnerability and resilience analysis

Jordan is not an oil-producing country. Nonetheless, akin to all oil- and non-oil-producing Arab counties, its economy is tied to international oil prices through the public and private expenditure of oil-producing Arab countries, which translate into imports, employment opportunities for migrant workers, and inflows of remittances, investments, loans and assistance. During the period 1995–2021, the Jordanian economy went through various phases, most of which were triggered by external shocks. The severity of the impacts of these shocks reflects the vulnerability of the Jordanian economy, which depends on a set of economic variables that determine economic growth, including public and private expenditures, tax revenues, government debt, workers' remittances and credit to private sector. The boom period was still plagued by a persistently high balance of trade deficit, only partially financed by loans and remittances, Meanwhile, the current account deficit was financed by the influx of FDIs. Figure 2.5 shows the response of key economic indicators to external shocks during the period 1995–2021.

Figure 2.5. Selected economic indicators by year

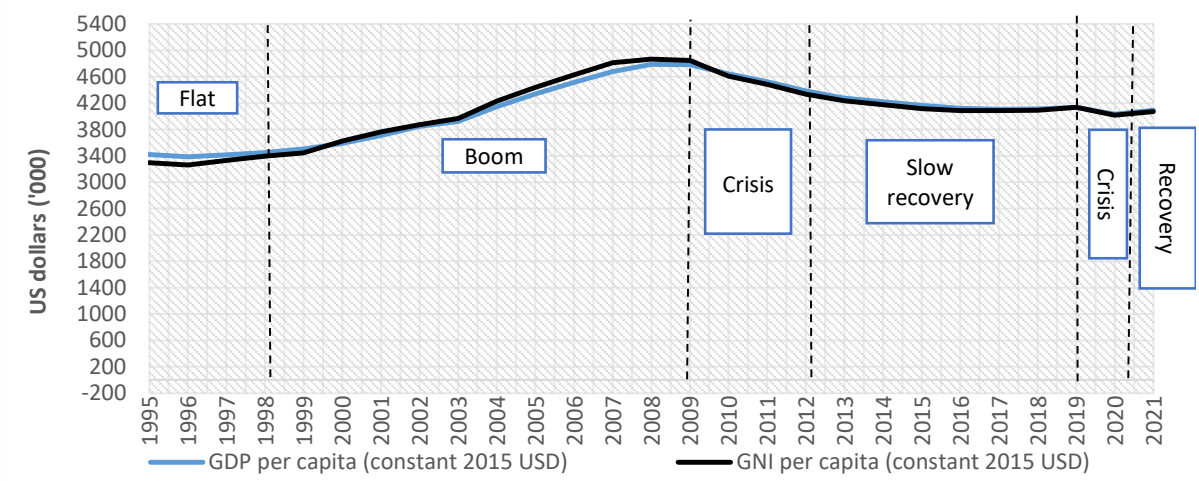


Source: World Development Indicators, World Bank and ILOSTAT.

Per capita GDP and gross national income (GNI) grew from US$3,449 and $3,396 in 1998 to $4,787 and $3,864 in 2008, respectively. The boom period ended abruptly with the 2008 global financial crisis and the Arab uprisings that followed shortly. Oil supplied from Iraq on concessional terms ended in 2004, and Egyptian natural gas supplies were frequently disrupted in 2011 and 2012, forcing Jordan to import expensive fuels at a time of soaring prices, increasing pressure on the

balance of payments and fiscal accounts.[3] Additionally, the rapid increase in population, mostly driven by the large influx of refugees from neighbouring countries, mostly Syria, resulted in a steady decline in per capita GDP and GNI (figure 2.6). The period 2012–2019 endured a slow and erratic recovery, during which government policies were mostly reactionary as the country grappled with a large number of refugees and the effects of regional instability, which increased risks and deterred FDI. In 2020, the COVID-19 pandemic led to sharp declines on all economic indicators. The Government responded with a package of economic policies and relief programmes, and signs of a slow recovery were noticeable in 2021.

Figure 2.6. GDP and GNI per capita by year



Source: World Development Indicators, World Bank.

To better assess economic resilience and vulnerability, an econometric analysis was conducted focusing on (a) the determinants of economic growth, including variables which increase exposure to external risks; and (b) vulnerability persistence. To analyse both components of risk, a GARCH model was used, as shown in Table 2.1.

Table 2.1. GARCH model estimates of the dependent variable (first difference in log GDP)

Variable	Coefficient	Std. Error	Z-statistic	Probability
D (LOG (GDP (-1)))	-0.388669	0.069574	-5.586377	0.0000
D (LOG (GDP (-2)))	-0.379928	0.064448	-5.895150	0.0000
D (LOG (GDP (-3)))	-0.330528	0.068464	-4.827784	0.0000
D (LOG (GDP (-4)))	0.534833	0.081825	6.536337	0.0000
Difference log of domestic tax revenue (-1)	-0.001504	0.015959	-0.094270	0.9249
Difference log of domestic tax revenue (-2)	-0.002987	0.018216	-0.163996	0.8697
Difference log of domestic tax revenue (-3)	0.019440	0.016139	1.204507	0.2284
Difference log of domestic tax revenue (-4)	0.029381	0.013307	2.207887	0.0273
Difference log of FDI (-1)	-0.003352	0.003490	-0.960471	0.3368
Difference log of private credit (-1)	0.258943	0.091245	2.837898	0.0045
Difference log of workers' remittances inflow	0.068044	0.033309	2.042833	0.0411
Difference log of workers' remittances inflow (-1)	0.114467	0.031927	3.585237	0.0003
Difference log of workers' remittances inflow (-2)	0.046210	0.031009	1.490210	0.1362
C	0.000675	0.024083	0.028049	0.9776

[3] Hausman et al., "Jordan: The Elements of Growth Strategy", 2019.

Variance equation				
C	1.03E-05	1.21E-05	0.849733	0.3955
RESID (-1) ^2	0.033516	0.102088	0.328302	0.7427
GARCH (-1)	0.570731	0.286975	1.988783	0.0467
Difference log of central government debt	0.000779	0.000358	2.172371	0.0298
R-squared	0.964971	Mean dependent variable		0.009903
Adjusted *R*-squared	0.955541	S.D. dependent variable		0.060075
S.E. of regression	0.012667	Akaike info criterion		-5.978409
Sum squared residuals	0.008344	Schwarz criterion		-5.353198
Log likelihood	219.2767	Hannan-Quinn criterion		-5.731012
Durbin-Watson stat	2.107180			

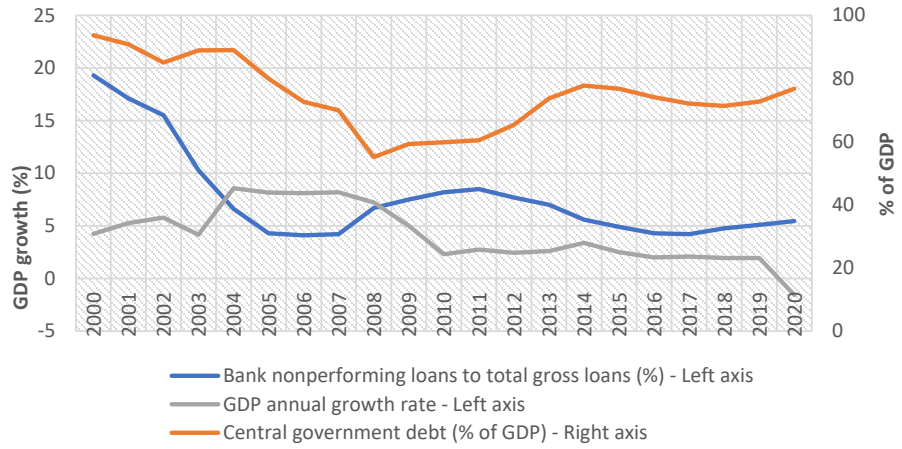
Source: Authors' calculations based on data from the CBJ.

Using quarterly data, the results of the GARCH model show that domestic tax revenues at the fourth lag, private-sector credit, and inflows from workers' remittances were among the most significant determinants of growth in Jordan over the period 2004–2021. Workers' remittances from abroad are considered to provide economic resilience and are a stabilizing variable in small developing economies, since they sustain household consumption, supporting effective demand within the local economy, especially during economic crises.

The analysis confirms that changes in inflows from workers' remittances have a substantial impact on the local economy in Jordan, with a strong effect on economic growth. The variance of the residuals of the growth equation is significantly dependent on central government debt. These results indicate a strong positive correlation between growth vulnerability and government debt. This means that economic growth is more vulnerable when levels of government debt are high. Hence, rising government debt following 2008 led to an inability of the Jordanian economy to recover quickly. The value 0.57 of the GARCH coefficient in table 2.1 means that GDP volatility following a shock persisted for two quarters. This can be explained by the role that foreign borrowing plays in replenishing foreign reserves and sustaining essential imports, combined with the role that domestic borrowing plays in financing the fiscal deficit and, thus, sustaining public expenditure.

Figure 2.7 shows that economic growth was more vulnerable to shocks during the high-growth period 2000–2006, when public debt was high, compared with the period from 2011 to 2019. Moreover, the decline in economic growth from 2009 to 2011 was correlated with a higher rate of nonperforming loans, implying vulnerabilities in the financial sector, which can affect private investment, employment, and consumption. In other words, while fragility in the financial sector and high public debt were tolerable during periods of normal conditions and high growth, they could not be sustained in the face of external shocks (i.e., the global financial crisis and the Arab uprisings).

Figure 2.7. Growth, public debt and nonperforming loans by year

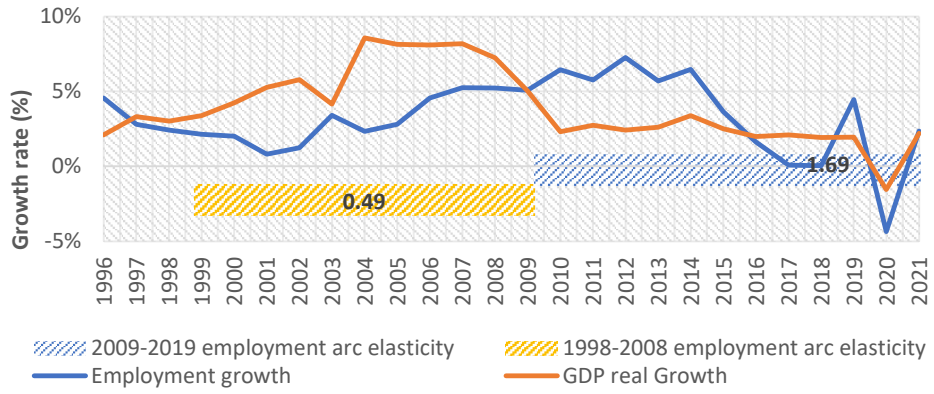


2.3. Growth and employment generation

A World Bank study showed that most growth in Jordan during the 1990s and early 2000s was primarily due to an expansion of both capital and labour, an inflow of migrant workers and high levels of foreign assistance and investment, rather than higher levels of productivity. This explains the limited progress in Jordan's economic competitiveness, and that unemployment and poverty remain major socio-economic problems.[4]

From 1998 to 2008, around 332,788 new jobs were created as a result of economic reforms and trade, investment, industrial policies, and the establishment of the QIZs. Employment grew by a CAGR of around 3 per cent. Thanks to large capital investments, the growth in employment was outpaced by the growth of GDP, with a compound annual rate of around 6.3 per cent. This was led by strong performance in the manufacturing and the services sectors, which grew at a compound annual rate of around 9.4 per cent and 6.1 per cent in real terms, respectively, during the same period. However, a sizeable proportion of the value added by manufacturing was generated by capital-intensive industries. Most jobs created in the manufacturing sector required low- to intermediate-level skills and paid low wages with substandard working conditions. Consequently, the manufacturing sector, particularly in QIZs, employed a large number of low-skilled migrant workers. This was confirmed by a study by the Arab Center for Strategic Studies, which identified the impact of the large influx of foreign investment associated with the creation of the qualified zones, raising the price elasticity for Jordanian workers and, thus, holding Jordanian wages down and contributing to deteriorating work conditions.[5] This contributed to the low arc elasticity of employment with respect to output (GDP), which stood at around 0.49 during the period 1998–2008 (Figure 2.8).

Figure 2.8. Growth rates of employment and real GDP, and employment arc elasticity, by year



Source: Author calculations based on data from ILOSTAT.

During the period 2009–2019, the trends were nearly reversed. The contribution of the labour-intensive services sector to growth and employment generation increased. Employment grew at a compound annual rate of around 4.1 per cent, outpacing the growth of GDP, which stood at a CAGR of around 2.4 per cent, resulting in a high arc elasticity of employment with respect to output of around 1.69. During the low-growth period 2009–2019, a high employment elasticity resulted in the creation of 684,566 jobs, mostly in the low-productivity services and non-tradable sectors. Manufacturing of value-added goods grew in real terms at a CAGR of only 1.8 per cent. Some mega projects, such as the redevelopment of the Aqaba Port and SEZ, helped boost employment during this period. Yet, unemployment remained persistently high, particularly among youth and women.

[4] World Bank, "Resolving Jordan's Labour Market Paradox of Concurrent Economic Growth and High Unemployment", Report No. 39201-JO, 23 December 2008.
[5] Arab Center for Strategic Studies, "The Employment effect of Trade and Investment Policies in Jordan", 2008, https://jcss.org/2592/the-employment-effect-of-trade-and-investment-policies-in-jordan/.

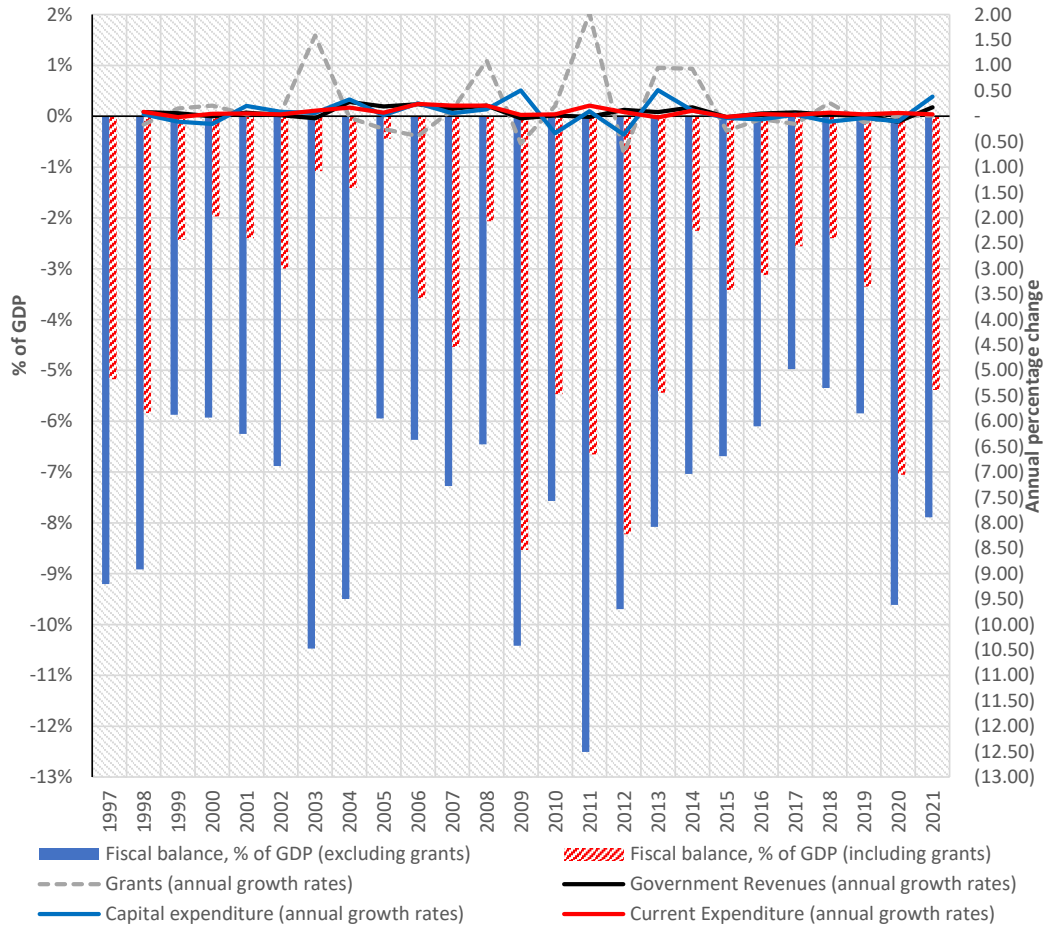
▶ 3. Macroeconomic analysis

3.1. Fiscal stance and policies

In the early 2000s, fiscal reforms in Jordan focused on increasing domestic tax revenues and reducing dependence on foreign aid. Higher taxation, associated with trade liberalization and government expenditure reforms, increased the ratio of tax revenue to GDP during the period 2003–2005, but this ratio decreased when GDP increased further following the reforms. Government expenditure, as a share of GDP, decreased after 2003 and then stagnated at that level. The decline in government spending, as a share of GDP, combined with higher tax revenues resulted in a decline in the Jordanian Government's debt relative to GDP from 89 per cent in 2003 to 55 per cent in 2008.

During the period 2008–2011, in response to the decline in tax revenues, the Government cut expenditures largely through cutting capital expenditure. Government current expenditure was also reduced, but less so than capital expenditure. The fiscal deficit (as a share of GDP) grew by around 4.8 per cent between 2008 and 2011. However, debt continued to grow following the global financial crisis. Note that, since 2000, public debt has moved from external to domestic debt, with the share of foreign denominated debt falling from over 80 per cent of total debt in 2001 to below 50 per cent in 2008.[6] It is also important to note that most government borrowing is allocated to finance current expenditure, rather than capital expenditure.

Figure 3.1. Key fiscal indicators by year (% GDP)



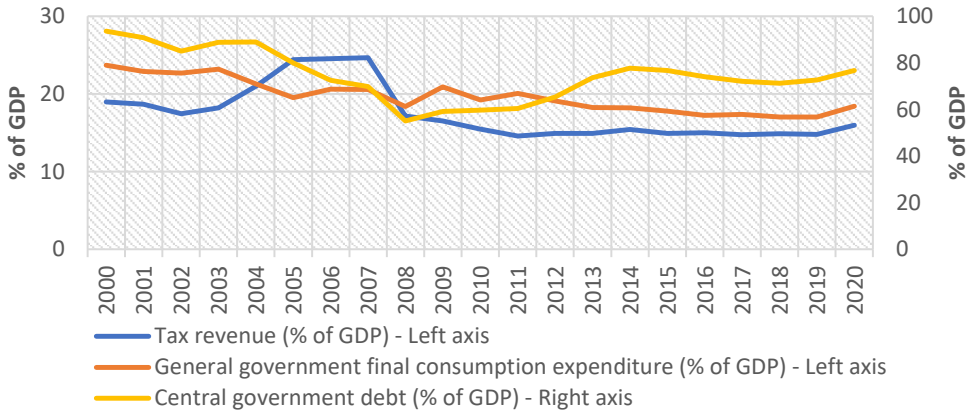
Source: CBJ statistical database and Department of Statistics (DOS).

[6] Maziad, S., "Monetary Policy and the Central Bank in Jordan" (International Monetary Fund, 2009).

In response to the rising debt-to-GDP ratio, the Government reduced its fiscal impulse [7] (domestic spending net of domestic revenue) by around 8.1 per cent between 2011 and 2017, bringing the annual deficit down to 5.1 per cent of GDP by the end of 2017 (2.6 per cent of GDP including grants). Fiscal adjustments included higher indirect taxes (2.9 per cent of GDP), decreased subsidies on goods (3.5 per cent of GDP), and reduced capital expenditures (1.4 per cent of GDP). [8] The fiscal deficit rose slowly to reach 6 per cent of GDP in 2019 (3 per cent including grants) and jumped to 10 per cent of GDP (7 per cent including grants) in 2020 as a result of the COVID-19 pandemic. To control the fiscal deficit between 2015 and 2019, the Government reduced capital expenditure and boosted revenues, while current expenditure, which comprises mostly wages and salaries, continued rising (Figure 3.1).

The increase in the fiscal deficit during the pandemic was due to a 10 per cent decline in government revenues, flat growth in grants and a 6 per cent increase in current expenditure, offset by a 10 per cent decline in capital expenditure. In 2021, the increase in grants and government revenues brought the deficit down to 8 per cent of GDP (5 per cent including grants) as shown in figure 3.1. General government final consumption, as a percentage of GDP, declined from 23 per cent of GDP in 2009 to 17 per cent of GDP in 2019, but then rose slightly to 18 per cent of GDP in 2020 because of COVID-19 spending. This, however, did not reduce public debt, which rose from 65.5 per cent in 2012 to 72.7 per cent in 2019, and 76.8 per cent of GDP in 2020 (figure 3.2).

Figure 3.2. Selected fiscal indicators by year

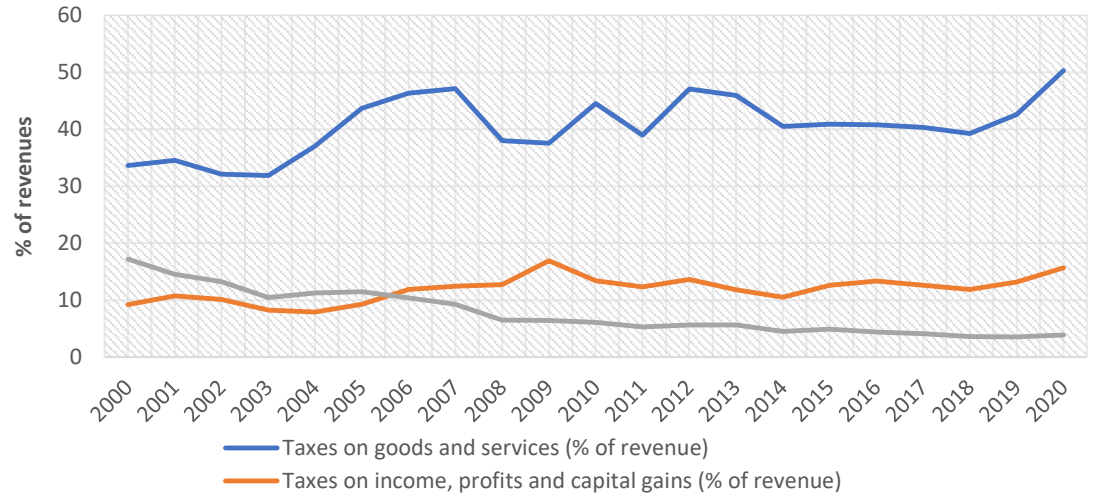


Source: World Development Indicators, World Bank

Figure 3.3 shows that the largest increase in tax revenues during the period 2003–2007 was in taxes on goods and services, mostly value-added tax (VAT). While VAT is widely regarded as a regressive and indiscriminate tax, with negative impacts on poverty and income distribution, it is easier and less costly to administer, compared with direct taxation, such as taxes on incomes, profits, and capital gains. These also increased after the income tax law was reformed in 2018, yet at a lower rate, because of progressive elements of the reforms. The revised law increased the number of income categories and changed the tax on profits, depending on the sector. Automation of government operations has eased the control of tax fraud in both income and sales taxes. However, because of trade liberalization policies and commitments under various free trade agreements and WTO membership, taxes on imports declined from 17 per cent in 2000 to 3.9 per cent of total fiscal revenue in 2020.

[7] Fiscal impulse is defined as expenditures minus external debt payments, minus domestic revenue.
[8] Hausman et al., 2019.

Figure 3.3. Tax receipts by type and year (% of total revenue)

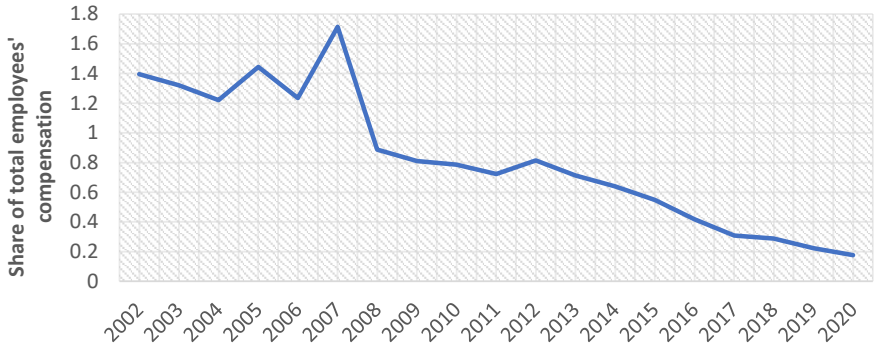


Source: World Development Indicators, World Bank

In 2019, projections through to 2025 showed that, assuming a real growth rate of around 4 per cent, the interest rate maintained at 6 per cent and a primary surplus close to the 2017 level, the debt-to-GDP ratio would only be reduced to about 77 per cent. Hence, reducing the debt-to-GDP ratio can be achieved if, and only if, current levels of primary surplus are maintained or improved, growth is accelerated beyond 2011–2019 levels, and financing is made available on softer terms. [9] As of the end of the first quarter of 2022, according to the CBJ, the debt-to-GDP ratio stood at a staggering 93 per cent, driven largely by volatility in foreign exchange rates in 2020–2021 and higher interest rates in 2021.

During the high-growth period (1998–2008), fiscal consolidation led to a reduction in public-sector employment, which the private sector failed to fully absorb, particularly since a considerable proportion of the private sector was comprised of privatized public firms rather than new investments (e.g. Jordanian cement and telecommunication companies). This contributed, among other factors, to persistently high unemployment during this period. The decline in growth rates, investment levels and rising public debt during the period 2011–2019 did not help to bring down unemployment, as neither the public nor private sectors were in a position to create enough new jobs, in addition to the influx of refugees. Given the persistently high debt-to-GDP ratios, fiscal deficits, current account deficits, and consequent need to maintain "fiscal discipline", strategies that are focused on growth acceleration and employment generation through the use of fiscal stimulus may not be viable.

Figure 3.4. Social security contributions as a share of total compensation of employees by year



Source: World Development Indicators, World Bank

[9] Hausman et al., 2019

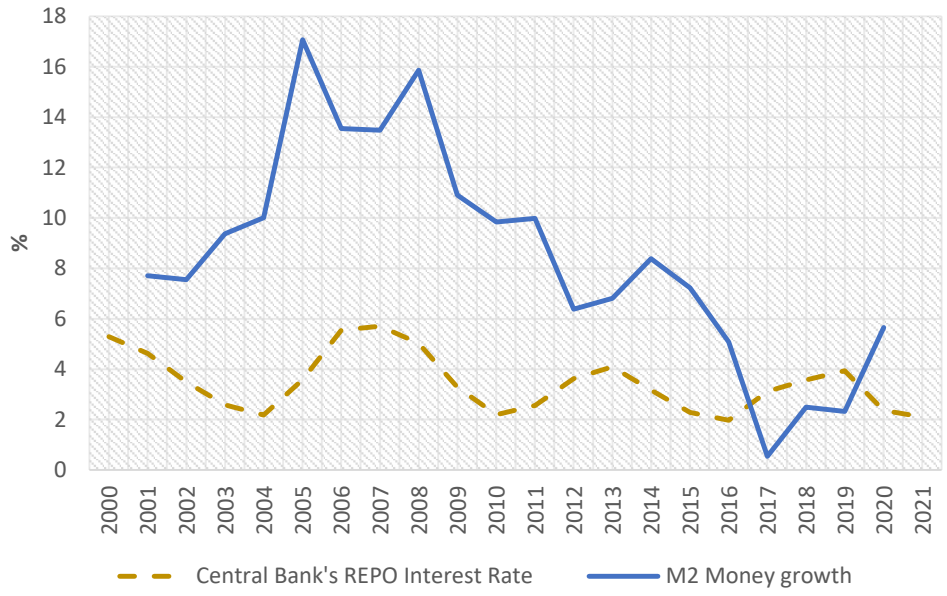
Social security reforms in 2001, which included public-sector employees, resulted in an increase in social security contributions to the social security fund. However, because of the early retirement of numerous public-sector employees, the social security fund experienced a deficit. Reforms to the social security law in 2009, 2010 and 2014 addressed these issues by including employees who benefit from a severance payment and increasing the contributions of employers and employees. As a result, the share of employees contributing to social security increased from 46.7 per cent in 2007 to 85 per cent in 2021. However, the share of employees' compensation in social security contributions has been decreasing since 2007. The decline in the share of social security out of employees' compensations indicates that employees and employers declare a lower wage deductible for social security than the actual wage. In 2021, 75.5 per cent of social security contributions were based on a monthly wage of less than 600 Jordanian dinars, which is close to the average monthly wage (534 dinars in 2020, a ccording to the DOS).

3.2. Monetary stance and policies

As with many developing countries, Jordan's monetary policy is constrained by a fixed exchange rate regime, wherein the dinar is pegged to the US dollar. Thus, changes in the central bank's interest rate is tied to the US Federal Reserve's (the Fed) rate. Reliance on volatile foreign aid and workers' remittances as the key sources of foreign income has always limited monetary policy options for Jordan. In response to the global financial crisis (2008–2010), the CBJ adopted an expansionary policy, easing credit and increasing liquidity through a lower policy rate and lower mandatory reserve requirement for banks, while expanding open market operations.

In contrast, during the period preceding the financial crisis, inflationary pressure drove the CBJ to practice conventional conservative monetary policy, despite the need to ease credit in order to supplement foreign investments and finance the export-led model.

Figure 3.5. Monetary indicators by year



Source: CBJ statistical database.

The CBJ's interest rate translates through to the larger economy through the cost of loans (i.e., capital). The interest rate at which banks lend is directly related to the CBJ's discount rate, and negatively correlated with the share of domestic private credit as a proportion of GDP. Conventionally, the CBJ exercises a countercyclical monetary policy, focusing on managing a set of key monetary variables. Table 3.1 summarizes key monetary policy actions from January 2018 to October 2022. It shows that the CBJ usually tries to anticipate changes in monetary variables at the national level that can be induced by external factors, particularly the Fed's target interest rate and oil prices (table 3.1). For instance, from January 2022 to the end of September 2022, in response to inflation and the raising of the Fed's rate, the CBJ raised interest rates on all monetary instruments five times, amounting to 275 basis points. In 2018, 2019 and 2022, the frequency of monetary policy actions was rather high, mostly focused on interest rate policy as the key monetary instrument. Notwithstanding the prioritization of key monetary variables, the CBJ also tried to shield programmes designed to support the private sector, particularly SMEs in vital sectors from frequent changes in interest rates, and promote entrepreneurship, which helps generate employment.

Table 3.1. Key monetary policy actions, 2018–2022

Year	Date	Key monetary policy	Motivation
2022	25 Sep	Raised interest rates by 75 basis points (bps) but kept the CBJ 1.3 billion dinar refinancing programme's interest rates unchanged (1.0%) for projects in Amman and (0.55%) in other governorates (10-year term); extended CBJ's programme to support SMEs, professionals, craft worker, and wholesale importers of basic commodities, and kept the interest rate at its current level of 2% (total 700 million dinars, 54-month term, including a grace period up to 12 months)	Rising external inflation; increase in the Fed rate; increase in interest rates in international financial markets; maintain attractiveness of the Jordanian dinar (JD); protect the peg to the US dollar
	31 July	Raised interest rates by 75 basis points; as above	As above
	19 June	Raised interest rates by 50 basis points on all monetary policy instruments, except the overnight deposit window rate (raised by 75 basis points); kept the JD1.3 billion dinar refinancing programme's interest rates unchanged (1.0 %) for projects in Amman and (0.55%) in other governorates (10-year term); kept the interest rate at its current level of 2% for CBJ's programme to support SMEs, professionals, craft workers and wholesale importers of basic commodities, (total JD700 million, 54-month term, including a grace period up to 12 months)	As above
	8 May	Raised interest rates by 50 basis points on all monetary policy instruments, except the overnight deposit window rate (raised by 75 basis points); as above	As above
	20 Mar	Raised interest rates by 25 basis points on all monetary policy instruments; extended the CBJ programme to refinance vital economic sectors (JD1.3 billion), covering ten sectors – industry, tourism, renewable energy, agriculture, information technology, engineering consultancy, health, transportation (transport companies), education (vocational and technical training) and the export sector; kept the JD1.3 billion refinancing programme's interest rates unchanged (1.0%) for projects in Amman and (0.55%) in other governorates (10-year term); kept the interest rate at its current level of 2% for CBJ programme to support SMEs, professionals, craft workers and wholesale importers of basic commodities (total JD700 million, 54-month term, including a grace period up to 12 months)	As above
2020	17 Mar	Cut interest rates on all monetary policy instruments by 100 basis points, and the interest rate on the CBJ's overnight deposit window by 75 basis points, plus the following: • the Rediscount rate was decreased by 100 basis points to 3.50 • overnight repurchase agreement (repo) facility decreased by 100 basis points to 3.25% • CBJ main rate cut by 100 basis points to 2.50% • interest rate on the overnight deposit window facility cut by 75 basis points to 2.00% • increased liquidity of banks by JD550 million (US$705 million) by reducing the compulsory reserve ratio on deposits from 7% to 5% of the monthly average of daily customer deposits	Economic slowdown due to COVID-19
	5 Mar	Cut interest rates on all monetary policy instruments by 50 basis points; maintained interest rates on CBJ's refinancing programme at 1.75% for projects located in Amman and 1.00% for projects located in other governorates	As above
2019	31 Oct	Cut interest rates on all monetary policy instruments by 25 basis points; as above	Economic slowdown due to a decline in oil prices; low inflation; low Fed rate; catalyse the growth of credit and promote domestic spending
	19 Sep	Cut the interest rates on all monetary policy instruments by 25 basis points; as above	As above
	4 Aug	Cut the interest rates on all monetary policy instruments by 25 basis points: as above	As above

2018	24 Dec	Raised interest rates on all monetary policy instruments by 25 basis points; maintained interest rates on CBJ's refinancing programme at 1.75% for projects in Amman and 1.00% for projects located in other governorates To protect borrowers, the CBJ had instructed banks on 27/8/2018 to extend the maximum term for new retail loans from 8 years to 10 years, allowing borrowers to extend terms of housing loans in line with their income	Inflationary pressure; developments of the interest rates in the regional and international markets; and to maintain competitiveness of financial instruments denominated in JD
	1 Oct	Raised interest rates on all monetary policy instruments by 25 basis points; maintained interest rates on CBJ's refinancing programme at 1.75% for projects located in Amman and 1.00% for projects located in other governorates; expanded coverage of the programme to target three more sectors – health, transportation (only transportation companies) and education (only vocational and practical training) – in addition to previously targeted sectors (tourism, agriculture, renewable energy, information technology and engineering consultancy)	As above
	19 June	Raised the interest rate on the overnight deposit window by a 25 basis points; maintained interest rates of the refinancing programme at 1.75% for projects in Amman and 1.00% for projects in other governorates; maintained main interest rates, discount rate and repo rates at previous levels	As above
	25 Mar	Raised interest rates on all monetary policy instruments by 25 basis points; maintained interest rates of the refinancing programme at 1.75% for projects in Amman and 1.00% for projects in other governorates; maintained interest rates on the refinancing programme targeting SMEs in industry, tourism, agriculture, renewable energy, engineering consultancies, and information technology	As above, refinancing programme unchanged to promote economic growth and create jobs, particularly for youth

Source: CBJ.

In the current global scenario of cost-push inflation, with potential for "stagflation", the use of conventional monetary policies is not straightforward because of the limited effects of monetary tools on rising production and shipping costs, and their contradictory effects on several monetary and economic variables, particularly growth and employment. The CBJ maintained its monetary policy stance to be broadly accommodative and support the nascent recovery amid high unemployment in 2021. While the policy rate was unchanged for most of 2021, after reducing it in March 2020 to safeguard the peg to US dollar, in 2022, in the face of soaring inflation the CBJ raised rates.[10] It is highly unlikely that higher rates will curb cost-push inflation, but they will almost certainly produce a recessionary effect.

In general, the tendency to focus on stabilizing monetary variables has often diverted attention away from socio-economic objectives, such as generating employment opportunities.[11] These objectives are especially pertinent during times of persistently high unemployment. However, from 2011 to 2021, the CBJ launched several programmes to support the private sector, including SMEs and entrepreneurs, through concessional and low-cost loans, microfinance, and loan guarantee schemes. These focus on selected vital sectors for employment generation and export promotion. Most of these key programmes have been extended, and include the following:[12]

- **The CBJ refinance programme (total 1.3 billion dinars)**. Launched in 2011, it offers low-interest loans to private-sector projects, including SMEs. Interest rates were set at 1.75 per cent for projects within Amman and 1 per cent for projects in other governorates. These rates were reduced in 2020 to 1.0 per cent for projects in Amman and 0.5 per cent in other governorates. The programme initially targeted six vital sectors: industry, tourism, agriculture, renewable energy, information technology and engineering consultancy. Coverage was subsequently expanded in 2018 to include health, transportation (transport companies), education (only vocational and technical training) and the export sector. According to the CBJ press release in May 2022, since its inception in 2011, the programme has financed 1,750 projects to a total of about 1,296 million dinars, helping to create about 14,292 new jobs. Additionally, the programme helped preserve about 51,000 jobs following the COVID-19 pandemic in 2020.

- **The Jordan Loan Guarantee Company.** This was established in April 2020 to guarantee loans to start-ups and SMEs with initial funds of 50 million dinars, later increased to 83 million dinars the same year. During the first 3 months after its establishment, the programme disbursed

[10] World Bank Economic Monitor, "Jordan Economic Monitor: Global Turbulence Dampens Recovery and Job Creation", Spring 2022.
[11] Taghdisi-rad, Sahar, "Macroeconomic Policies and Employment in Jordan: Tackling the Paradox of Job-Poor Growth", Working paper No. 18 (ILO, 2012).
[12] CBJ, "Financial Inclusion Report 2018–2020".

funds of 289 million dinars, with an average loan size of 100,000 dinars, around 36 per cent of which went to the wholesale and retail sector, 21 per cent to the manufacturing sector and 8 per cent to the education sector. A portion of the loans disbursed from this programme covered the salaries of around 64,000 workers to reduce the impact of the COVID-19 pandemic.

• **The CBJ SME support programme.** Some 700 million dinars were allocated to target professionals, craft workers and wholesale importers of basic commodities. It offers a fixed low-interest rate of 2 per cent on loans for terms of up to 54 months and a grace period of up to 12 months. The programme was set to end by June 2022 but was extended for an additional 3 months until the end of September 2022. According to the CBJ press release in May 2022, the programme financed 5,910 projects, worth 532 million dinars, since its inception and helped maintain about 95,200 jobs since the start of the COVID-19 pandemic.

• **The national self-employment programme ("INHAD").** Established by the CBJ in 2019, with 100 million dinars allocated to finance entrepreneurship, this programme is specifically aimed at reducing youth unemployment, and offers low-cost soft loans at a fixed interest rate of 1 per cent to young eligible entrepreneurs.

From 2018 to 2020, the CBJ licensed and developed off-site and on-site supervision tools for nine new Microfinance Institutions (MFIs), six of which allocated a portion of their credit portfolio to support registered start-up projects. By the end of 2020, the share of credit provided to start-up projects by these MFIs reached 7.5 per cent. The volume of credit to SMEs grew by 23 per cent (from 2,474 million to 3,034 million dinars) between 2018 and 2020. The share of credit to micro, small and medium-sized enterprises through banks and MFIs grew from 10 per cent to 14 per cent over the same period, creating around 14,000 jobs.[13] According to the CBJ press release in September 2022, the refinance programme and SME support programme have collectively financed around 7,825 projects through their various schemes, with a value of about 1,824.9 million dinars, and contributed to the creation of about 14,517 jobs since their inception, in addition to maintaining around 151,000 jobs since the beginning of the COVID-19 pandemic. The amount of funding available under the two programmes is around 690.5 million dinars. The share of jobs that were created through the various programmes and schemes that benefited Jordanian youth is not clear.

3.3. Macroeconomic policies and the Government's response to shocks

Our assessment of the impact of Jordanian macroeconomic policies on growth and employment is based on econometric analysis using quarterly time series data from the CBJ and quarterly time series of the unemployment rate from the ILOSTAT database for the period 2005–2020. Time series analysis allows us to estimate the impact of macroeconomic policies and the response to shocks over short and long runs. The long-run relationship between variables is based on identified stable (cointegration) equations. If stable cointegration relations are identified in the long run, short-term deviations are assumed to offset and return to a stable relation.

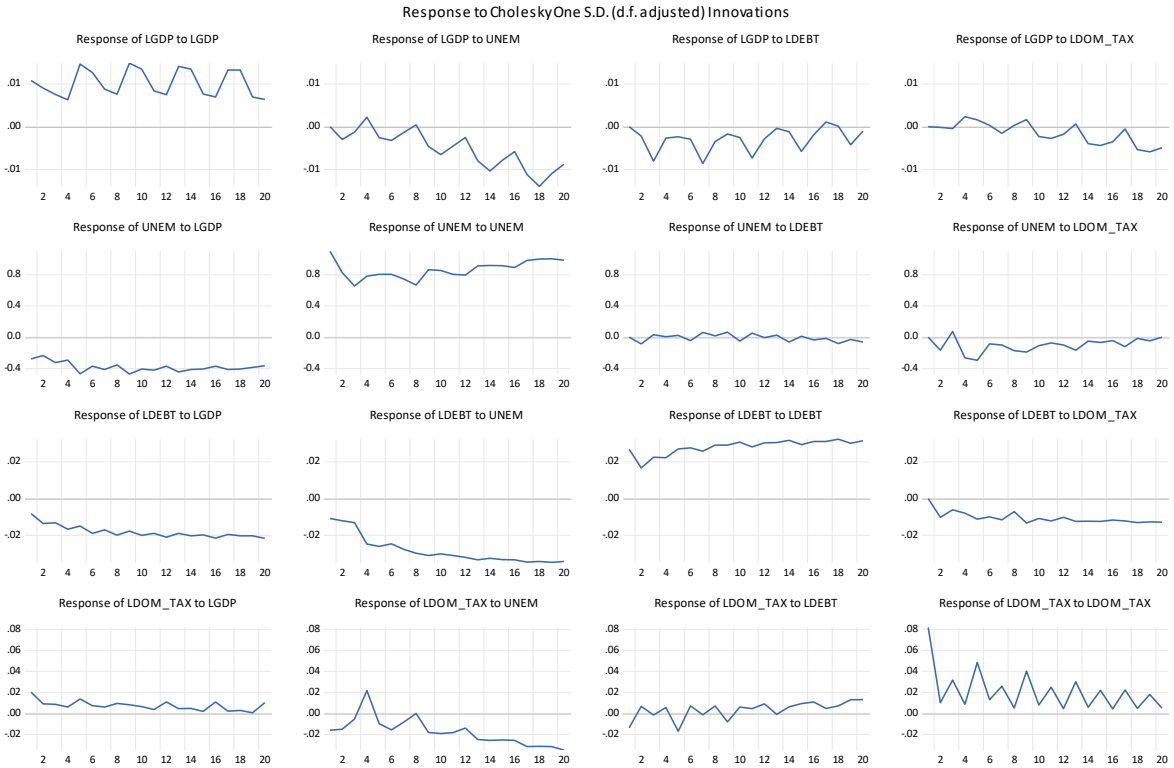
How macroeconomic variables respond to fiscal reforms was estimated using a VECM, using quarterly time series data for the period 2005–2020. The model includes the following endogenous variables:

- log of GDP;
- unemployment rate;
- log of central government debt;
- log of domestic tax revenue.

[13] CBJ, "Financial Inclusion Report".

The log of international grants is considered an exogenous variable. Since all the endogenous variables are integrated of order 1, the Johansen cointegration test indicates the presence of one stable cointegration relation in the long run. The long-run relationship indicates that GDP is positively related to government debt and negatively related to domestic taxes. The impulse-response functions of the endogenous variables (Figure 3.6) indicate that responses do not return to their initial values. This indicates that long-run changes are dominant over short-run changes. Increases in domestic tax revenue increases GDP and reduces unemployment in the short run. However, the effect is negative on GDP in the long run. The results show the weak impact of current fiscal policies on unemployment levels, particularly over the medium term and long runs. Decline in debt can increase GDP in the short run, but the lack of debt management and the increase in borrowing for current government expenses (instead of capital expenses) imply that the effect of debt on GDP is offset over the long run. Since increases in domestic tax revenue are driven more by higher taxes on goods and services, rather than on income, this increase has a negative effect on GDP in the long run.

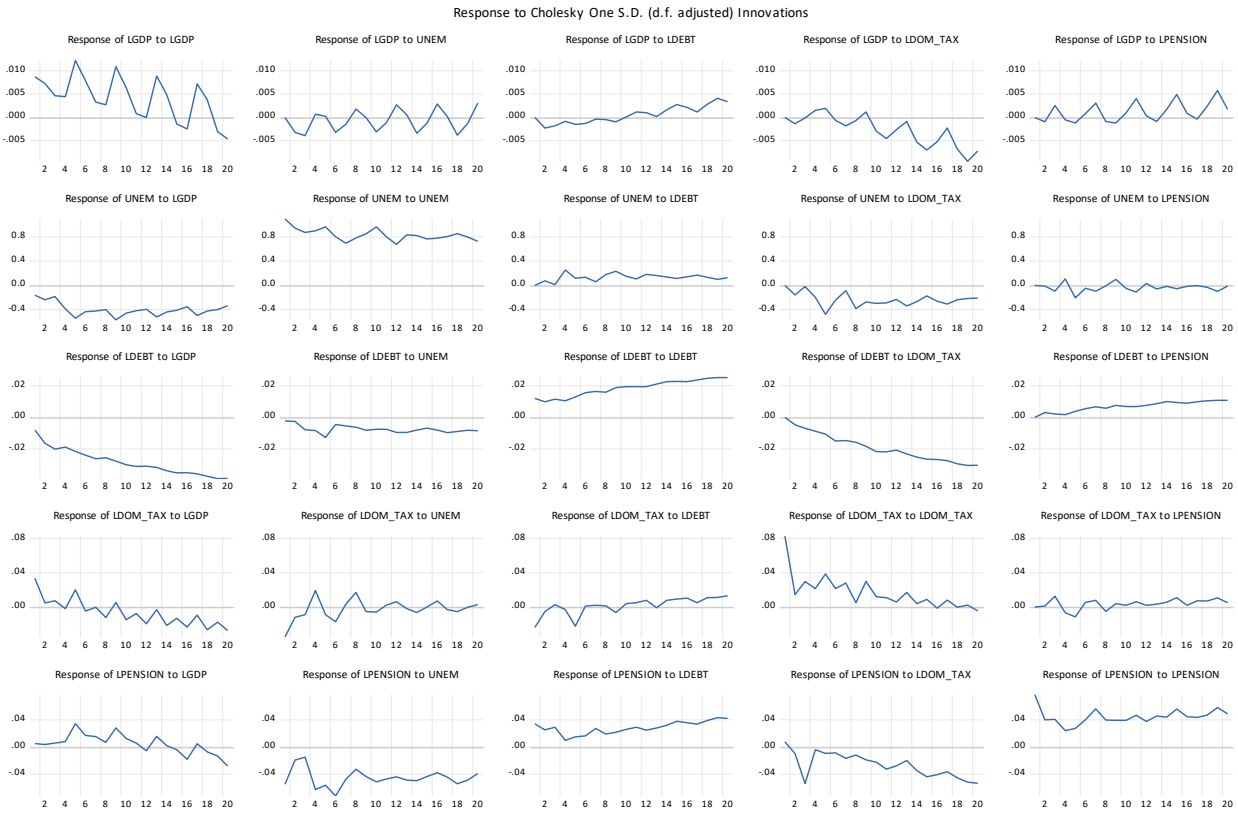
Figure 3.6. Impulse-response functions to fiscal reforms



Source: Authors' calculations based on data from the CBJ and ILOSTAT.

Adding the variable log of social security contributions (LPENSION) to the VECM does not change the number of cointegration relations. Figure 3.7 shows that an increase in social security contributions positively affects GDP in the long run and negatively affects unemployment in the short run but increases debt in the long run because of the inclusion of public-sector employees after 2001. It also increases domestic tax collection in the short run, as contributions to social security require a declaration of revenue by employers and employees.

Figure 3.7. Impulse-response functions to fiscal and social security reforms



Source: Authors' calculations based on data from CBJ and ILOSTAT.

To estimate the response of macroeconomic variables to monetary policy variables, a VAR model was generated using the variables:

• log of GDP;

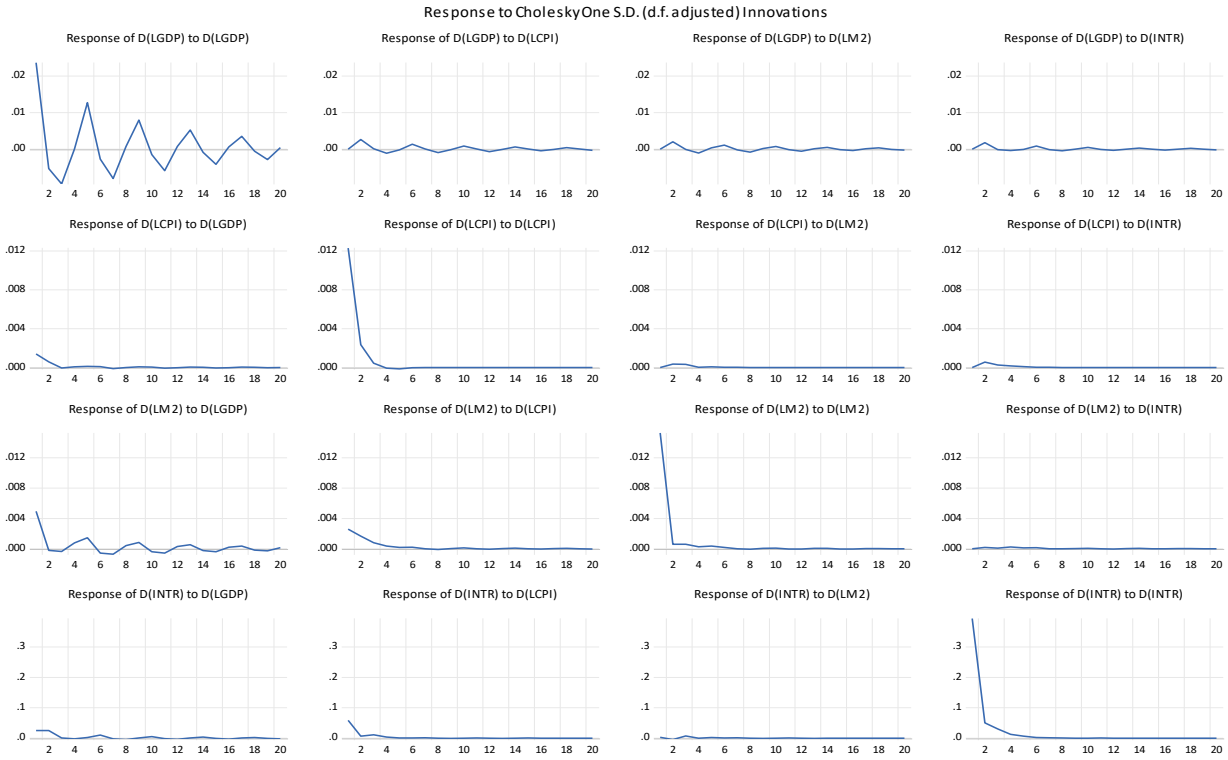
• log of CPI;

• log of money supply (M2); and

• the (discount) interest rate.

The Johansen cointegration test did not find any cointegration relation. Thus, a VAR model at first difference variables was estimated. The effects were only evident in the short run, and no stable relation was found in the long run. Since changes in the discount interest rate were limited, its effect on macroeconomic variables was insignificant, as indicated by the limited response of macroeconomic variables to changes in the rate. Changes in money supply positively affected GDP and negatively affected unemployment in the short run. CBJ monetary policy seems to be ineffective in stabilizing the inflation rate. This can be attributed to the fact that inflation in Jordan tends to be cost-push, rather than demand-pull, mostly driven by international prices of oil, natural gas and fuels from neighbouring countries (e.g., Egypt and Iraq).

Figure 3.8. Impulse-response functions to monetary policy



Source: Authors' calculations based on data from CBJ

3.4. Macroeconomic projection scenarios

In order to assess the impact of fiscal reforms, three scenarios were simulated in the VECM. The first scenario, "baseline", was based on a World Bank forecast of the Jordanian economy.[14] Second, the "optimistic" scenario assumes certain fiscal reforms, with increases in tax collection and social security contributions and slower growth of central government debt in 2022, and based on moderate growth in tax revenue, social security contributions and government debt during the years 2017–2018. The "pessimistic" scenario assumes a decline in tax revenues, a decline in social security contributions and an increase in debt in 2022 and based on the growth rates reported in 2007–2008. Table 3.2 outlines the assumptions of each scenario.

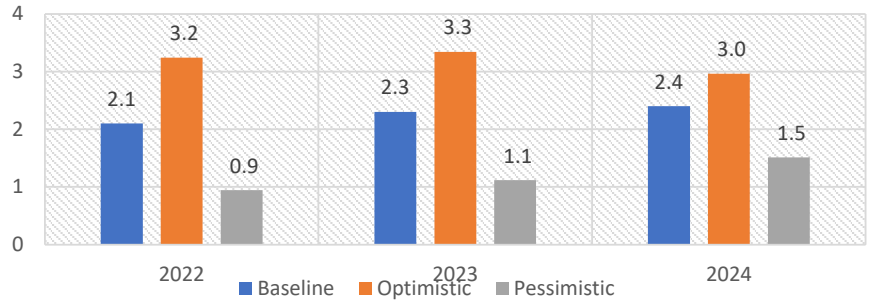
Table.3.2. Fiscal reform assumptions scenario (in annual growth rates)

	Baseline	Optimistic	Pessimistic
Domestic tax revenue	2.1%	8%	1%
Social security contributions	-0.5%	8%	-2%
Government debt	3.0%	0.4%	8%

The simulated impacts of each of the scenarios on GDP growth and unemployment rates are aggregated at the annual level (Figure 3.9), for comparison with the World Bank forecast (baseline scenario). The projections indicate an increase of 1.1 percentage points in GDP growth in the optimistic scenario in 2022 and 0.6 percentage point in 2024. In the pessimistic scenario the growth rate in 2024 will average around 1.5 per cent. This result is reinforced by the increase in government debt, which renders the economy more vulnerable, as discussed in section 2.3. The results confirm that fiscal discipline is a necessary, but not a sufficient, condition to achieve high growth rates and reduce growth vulnerability. There is a need to reduce government debt.

[14] The World Bank, *Jordan Economic Monitor*, 2022.

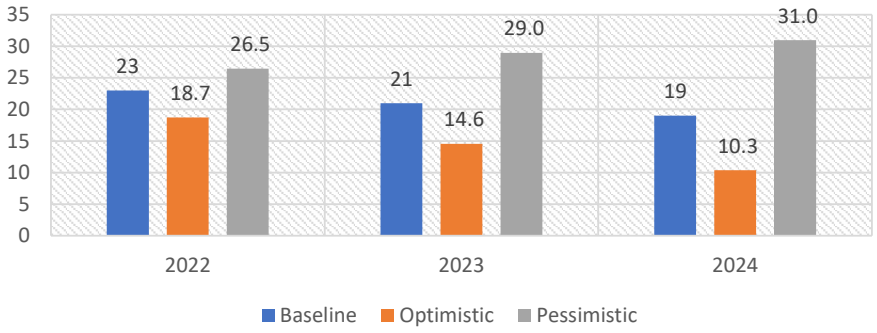
Figure 3.9. Projected GDP growth, 2022–2024 (%)



Source: Authors' calculations based on data from the CBJ.

Since unemployment responds negatively to increases in debt and increases in domestic tax revenues, the unemployment rate would drop significantly, to around 10 per cent by 2024 in the optimistic scenario. However, a rise to 31 per cent would be expected by 2024 in the pessimistic scenario because of the increase in debt and the slowdown of growth. It is important to note that, despite the significant decline in unemployment in the optimistic scenario, pushing unemployment below the two-digit level will require more than fiscal reforms to achieve significant improvements in macroeconomic variables.

Figure 3.10. Projected unemployment rates, 2022–2024 (%)



Source: Authors' calculations based on data from CBJ

Similar scenario-based projections of GDP responses to monetary policy show that only changes in money supply (M2) can impact growth. The inflation rate is not responsive to any monetary interventions. Thus, only a scenario of expansionary monetary policy can be considered, as presented in table 3.3 below. A restrictive monetary policy cannot be considered as an option to deal with the current crisis and the aftermath of the pandemic. The "baseline" scenario assumes a 4 per cent annual growth in money supply, equal to the average annual growth rate for the period 2018-2021. The "expansionary monetary policy" scenario assumes that money supply increases by 7 per cent in 2022 and decreases gradually to 6 per cent and 5 per cent in 2023 and 2024 respectively.

Table 3.3. Monetary assumption scenarios (changes in money supply in annual growth rates)

	Baseline scenario	Expansionary monetary policy
2022	4%	7%
2023	4%	6%
2024	4%	5%

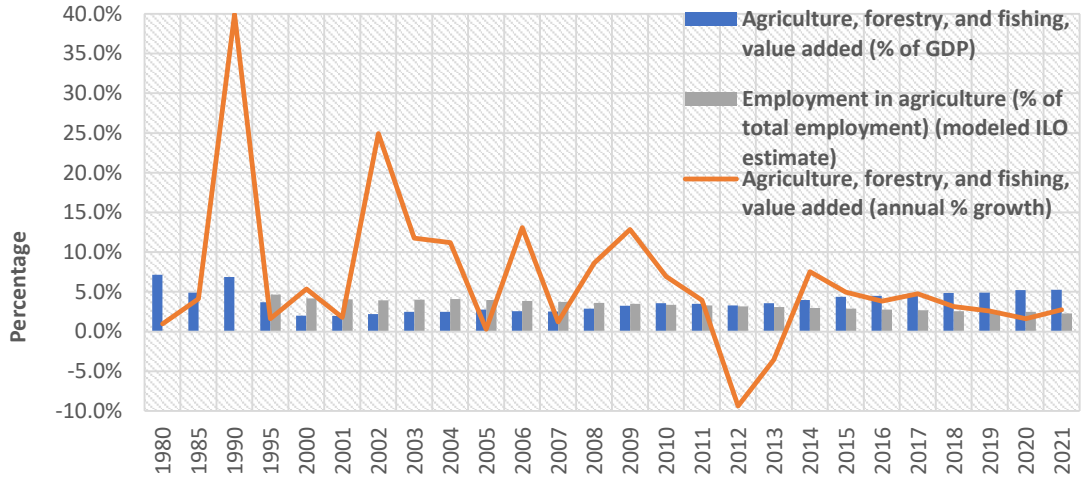
While GDP is expected to grow, under the baseline scenario, by 2.1 per cent, 2.3 per cent, and 2.4 per cent in 2022, 2023 and 2024, respectively, it is expected to slightly increase to 2.4 per cent, 2.4 per cent, and 2.5 per cent, respectively, under the scenario of expansionary monetary policy. Any inflation response with respect to expansionary monetary policy will be limited. The inflation rate in 2022 would increase from 3.3 per cent in the baseline scenario to only 3.5 per cent in the scenario of expansionary monetary policy. Therefore, the positive impact of expansionary monetary policy on growth and, consequently employment - provided the right pro-employment monetary policies were implemented- outweighs the negative impact on inflation.

▶ 4. Economic sectors: Structure, trends and policies

4.1. Agriculture

Jordan is one of the ten most water-poor countries in the world. Some 65 per cent of the country's water goes to agriculture, whereas agriculture accounted for only 5 per cent of GDP in 2020 and 2021. The agriculture, fishery and forestry sector in Jordan is precarious because of irregular rainfall, recurrent droughts, storms, and flooding. The Government only offers ad hoc support to farmers affected by extreme weather. Growth rates for this sector have been extremely erratic since 1980, reflecting the volatility of the sector and its susceptibility to climatic conditions, especially the availability of water (Figure 4.1). The sector is mostly dominated by foreign workers, who account for around 58 per cent of total employment. According to ILO estimates, the sector accounted for only 2.5 per cent of total employment in 2019, 2020 and 2021, down from 3.4 per cent and 4.2 per cent of total employment in 2010 and 2000, respectively. Unlike most other developing countries, the sector employs more men than women in Jordan. In 2000, it accounted for 4.2 per cent of male employment, compared with 3.2 per cent of female employment, while in 2010 it provided 4 per cent of total male employment, compared with only 1.2 per cent of female employment. In 2019, it accounted for 2.8 per cent of male employment, compared with just 0.7 per cent of female employment.

Figure 4.1. Economic performance and employment in the agriculture sector by year



Source: World Development Indicators, World Bank and ILOSTAT.

Table 4.1 shows that Jordanians comprised only 42 per cent of total employed by the agriculture sector in 2020, down from 55 per cent of total employed by the sector in 2000. The vast majority (76 per cent in 2020, 27 per cent of whom are female) of Jordanians working in the agriculture sector are casual workers. Only 18 per cent of Jordanians working in the agriculture sector are permanent workers (of whom 97 per cent are male, 6 per cent are seasonal workers, 25 per cent are female). Hence, the contribution of the agriculture, fishery, and forestry sector to employment generation, particularly for Jordanian nationals, is insignificant and unstable and has been declining over the last two decades.

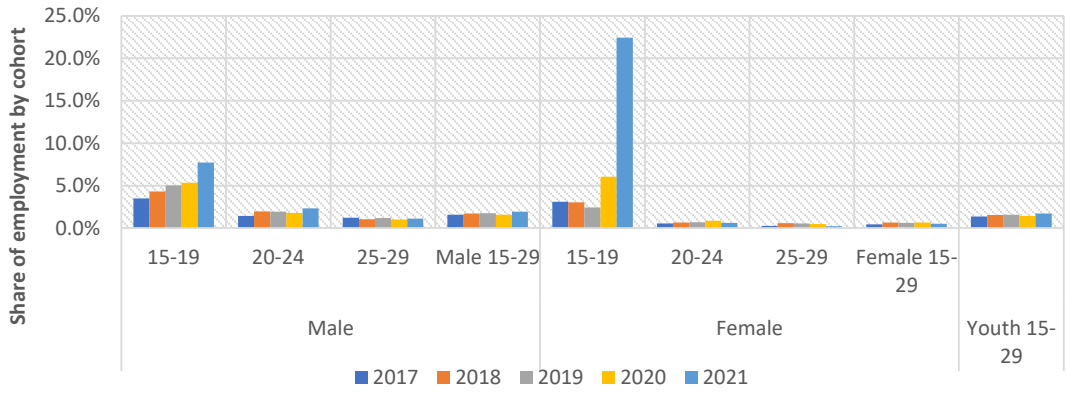
Table 4.1. Employment in the agriculture, fishery and forestry sector by sex, employment status and year (%)

	1995	2000	2005	2010	2015	2016	2017	2018	2019	2020
Jordanian male – permanent	97	92	97	84	99	78	97	87	97	97
Jordanian female –permanent	3	8	3	16	1	22	3	13	3	3
Total Jordanian – permanent	26	5	12	17	7	17	23	8	18	18
Jordanian male – seasonal	98	75	35	99	64	61	75	47	67	75
Jordanian female – seasonal	2	25	65	1	36	39	25	53	33	25
Total Jordanian – seasonal	10	0	3	5	1	2	5	3	4	6
Jordanian male – casual	40	61	66	55	74	76	59	62	71	73
Jordanian female – casual	60	39	34	45	26	24	41	38	29	27
Total Jordanian – casual	64	95	85	77	92	81	72	89	78	76
Total Jordanian (% of total sector)	31	55	42	40	30	20	33	36	42	42
Non-Jordanian male –permanent	100	99	100	100	99	99	99	100	99	100
Non-Jordanian female –permanent	0	1	0	0	1	1	1	0	1	0
Total non-Jordanian-permanent	22	24	48	47	33	24	32	29	37	37
Non-Jordanian male –seasonal	96	76	86	90	59	85	66	81	87	88
Non-Jordanian female –seasonal	4	24	14	10	41	15	34	19	13	12
Total non-Jordanian seasonal	5	2	3	2	7	2	9	9	7	8
Non-Jordanian male – casual	97	94	91	90	79	76	79	81	84	89
Non-Jordanian female-casual	3	6	9	10	21	24	21	19	16	11
Total non-Jordanian casual	73	75	49	50	60	74	59	62	56	55
Total non-Jordanian (% of total sector)	69	45	58	60	70	80	67	64	58	58
Jordanians employed by the agriculture sector as a share of total employed Jordanians							1.8	1.4	2.5	2.5

Source: DOS.

In 2021, only 1.9 per cent and 0.5 of employed males and females aged 15–29 years worked in the sector, respectively, with no significant change over the period 2017–2021. The sector does not attract many young male or female jobseekers, although the share of the sector in total employment of males and females aged 15–19 is higher (7.7 per cent and 22.4 per cent, respectively) than for other age groups, particularly the 20–24 and 25–29 age cohorts. This may be because the sector provides temporary transitional seasonal and casual employment, which explains the higher share of Jordanians engaged in seasonal and casual employment in this sector. For age groups 20–24 and 25–29, the percentage of males and females working in the sector is insignificant, particularly for females (Figure 4.2). Further, in 2021, around 90 per cent, up from 88 per cent in 2017, of males aged 15–29 working in the agriculture, fishery and forestry sector had basic education (below secondary school) or lower. Similarly, 90 per cent, up from 75 per cent in 2017, of females aged 15–29 have basic education (below secondary school) or lower. This means that, generally, only young males and females with low educational attainment seek employment in this sector, in part because of the lack of employment opportunities in other sectors and overseas.

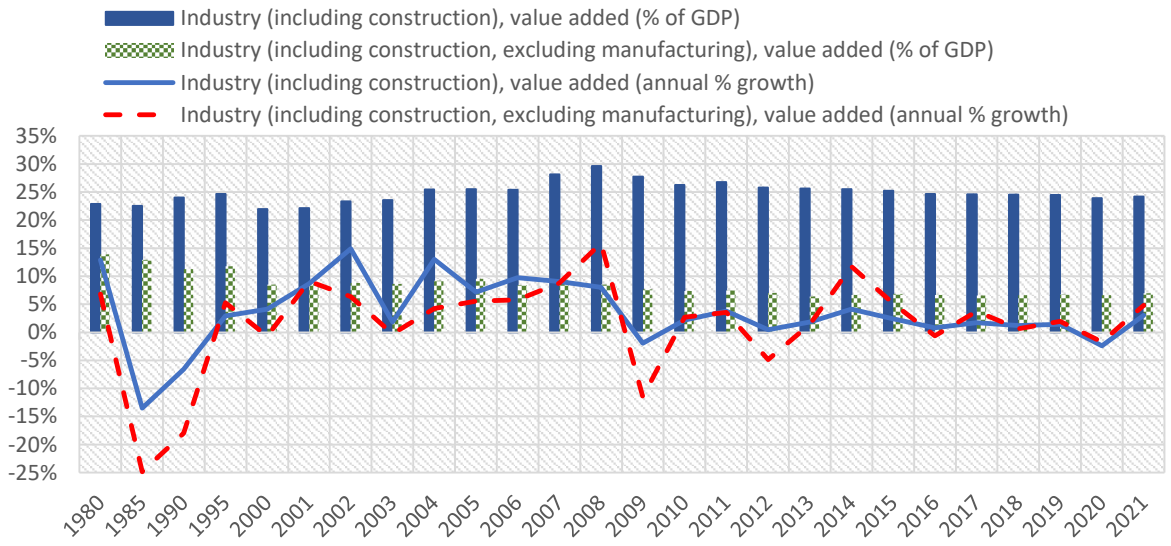
Figure 4.2. Youth employment in the agriculture, fishery and forestry sector by sex, age and year (%)



Source: DOS.

4.2. Industry

Figure 4.3. Industrial sector performance by year



Source: World Development Indicators, World Bank.

The industrial sector includes manufacturing, construction, mining, quarrying, electricity production and extractive industries (petroleum and natural gas). When manufacturing is excluded, the share of industry was only 4.8 per cent of GDP in 2021, down from 7.3 per cent and 8.5 per cent in 2010 and 2000, respectively. There are some extractive industries in Jordan but, in general, the country is not rich in natural resources. Table 4.2 shows that the value of extractive industries added from 2011 to 2019 was small. However, there may be some, albeit limited, potential for increasing the domestic added value based on existing natural resources.

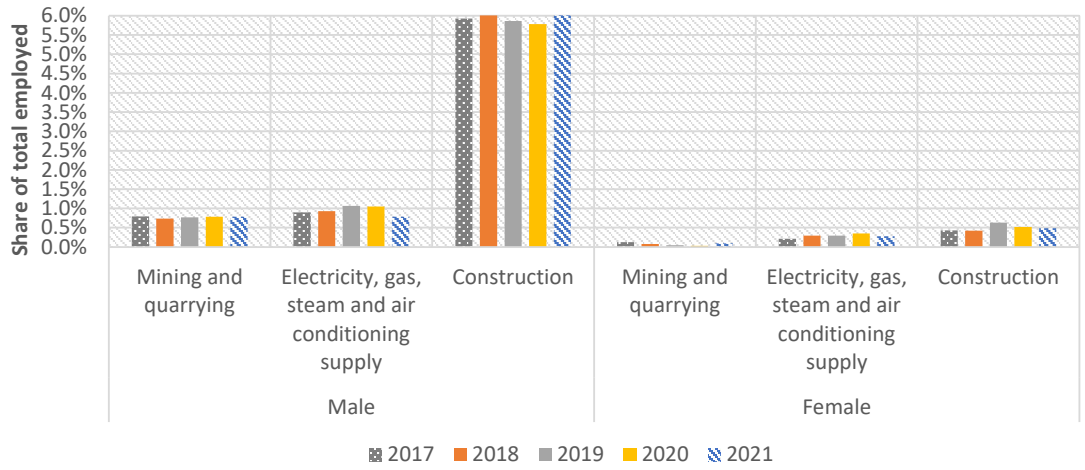
Table 4.2. Gross value added (mining and extractive industries) by subsector and year (millions of dinars)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
06. Extraction of crude petroleum and natural gas	8.849	7.796	7.859	6.474	5.982	10.355	6.42	8.953	9.717
620. Extraction of natural gas	*8.849*	*7.796*	*7.859*	*6.474*	*5.982*	*10.355*	*6.42*	*8.953*	*9.717*
08. Other mining and quarrying	1022.703	892.411	703.653	726.588	908.074	528.907	762.765	453.293	366.308
810. Quarrying of stone, sand** and **clay	*7.855*	*7.771*	*6.092*	*4.4*	*4.156*	*5.296*	*4.59*	*7.589*	*27.612*
891. Mining of chemical and fertilizer minerals	*1014.848*	*884.64*	*697.561*	*722.188*	*903.918*	*523.611*	*758.175*	*444.132*	*334.89*

Source: DOS.

The contribution of industry subsectors (excluding manufacturing) to total employment is very insignificant (on average less than 1 per cent of total employment), except for construction, which is typically labour intensive and dominated by males. The share of the construction subsector was around 6 per cent of total employment of males in 2021. However, the construction subsector provided only 0.5 per cent of total employment of males aged 15–29 in 2021, down from 0.8 per cent in 2017.

Figure 4.4. Share of total employment by industry subsector and year



Source: DOS.

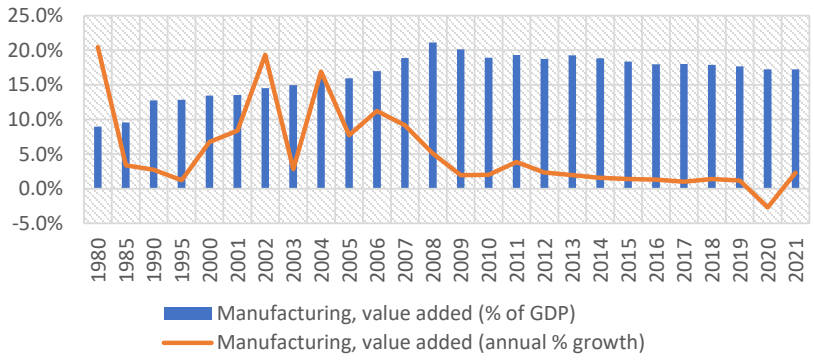
According to the Jordan Chamber of Industry, the cost of energy is an important challenge to the Jordanian industrial sector. The recent reduction in the electricity tariff for the industrial sector by 10 per cent starting from 2022 is expected to increase employment opportunities in 2023 by 10,000 new jobs in this sector.

Further challenges hindering the ability of the industrial sector to grow include the lack of skills among technical and vocational employees. This is largely a result of poorly equipped technical and vocational education and training (TVET) centres and outdated curricula. Interestingly, nine skills councils are established in the industrial sector and are responsible for identifying the skills required by employers and the development needs of TVET institutions.

The marketing and competition capacities of SMEs are additional challenges that limit the industrial sector's potential for growth and employment. Government regulations are also complicated, with 16 supervisory agencies controlling and licensing the industrial sector, yet lacking coordination. This not only affects domestic investments but deters foreigners from investing in Jordan. Note that the e-government system, to be completed in 2025, is expected to reduce the burden of bureaucratic regulations if properly coordinated between government ministries and agencies.

4.3. Manufacturing

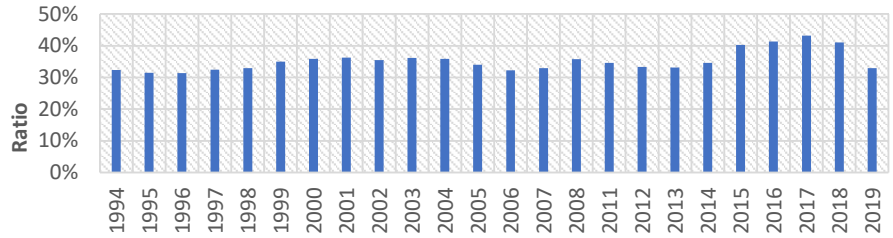
Figure 4.5. Manufacturing performance by year



Source: World Development Indicators, World Bank.

The manufacturing sector grew significantly from 1998 to 2008, driven by the creation of qualified and specialized industrial zones, and capitalizing on the bilateral and multilateral free trade agreements, particularly with the United States and neighbouring Arab countries. During the period 1999–2008 the value added by the sector grew from US$2.7 billion to $6.1 billion, at a CAGR of around 9.6 per cent. Its contribution to GDP grew from 12.9 per cent in 1995 to 21.2 per cent of GDP in 2008. Following the global financial crisis 2009–2010 and the Arab Spring in 2011, growth of the sector slowed significantly. Its share in GDP declined to 18.8 per cent in 2012. From 2012 to 2019, the sector experienced a very modest recovery that allowed it to maintain its share of GDP at around 18 per cent. The influx of FDIs that enabled its growth over 1998–2008 slowed because of regional instability and the decline in demand from Jordan's main export markets. In 2020, the COVID-19 pandemic hit the manufacturing sector hard, as it recorded its first negative growth rate (-2.7 per cent) in over three decades. This was followed by a modest recovery in 2021 with an annual real growth rate of 2.3 per cent. Note, however, that the pharmaceutical and medical supply industries increased output during the pandemic.

Figure 4.6. Ratio of gross domestic added value to gross output by year



Source: DOS.

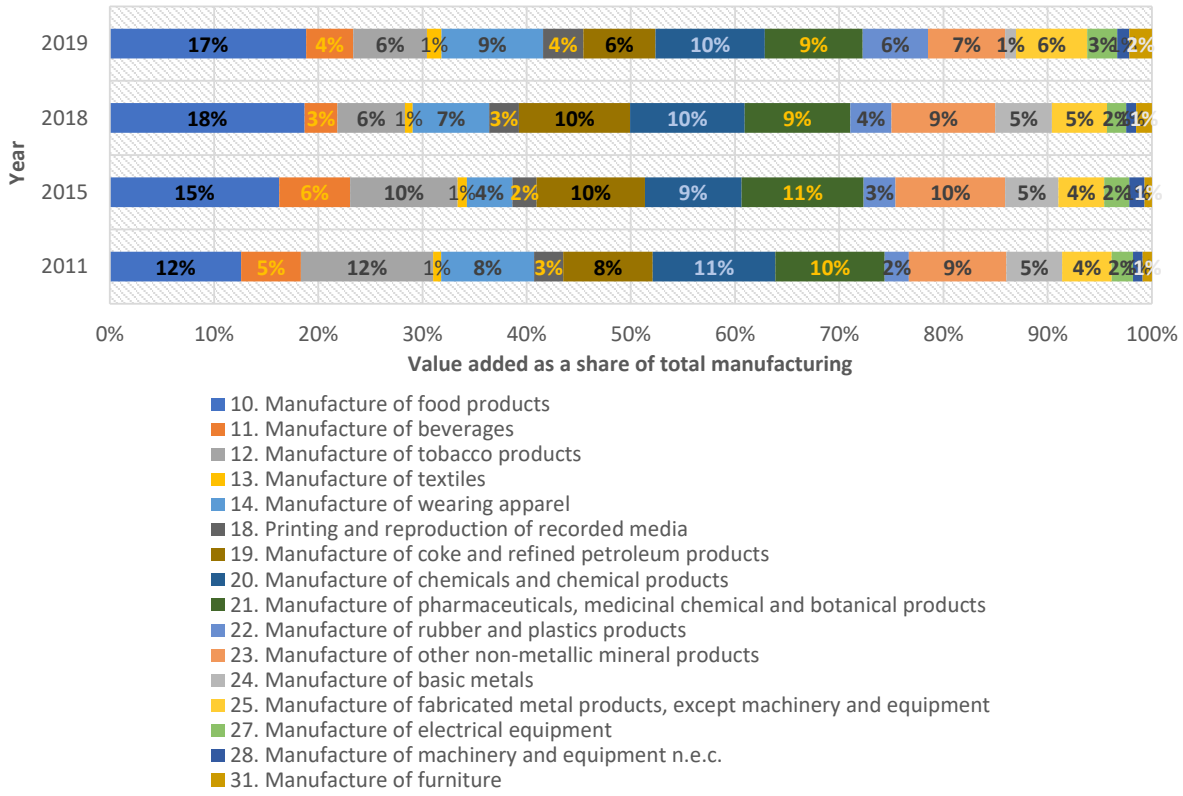
Figure 4.6 shows the ratio of gross domestic added value to gross output in the manufacturing and extractive industries. The ratio increased at the beginning of the high-growth period of 1998–2008, declining to levels of around 32 per cent towards the end of the period through to 2015. In 2016–2018, the shares of food, beverage, tobacco, and extractive industries with high domestic value-added output increased substantially, raising the ratio. Overall, the average ratio of gross added value to output in most industries hovered in the range of 30–35 per cent throughout the period 1998–2019, except for food, beverage and tobacco, pharmaceuticals, ceramics and porcelain, glass, clay and other building materials. Meanwhile, the textiles, garments, and apparel industry, which is considered the cornerstone of the QIZs and SEZs, maintained a low to medium share of domestic added value. The ratio of domestic added value to output remained low (below 30 per cent) for high-tech, heavy and high-linkage industries, such as consumer and industrial electronics, metal and steal, and automotive industries (see table 9.3). The persistently high share of imported intermediate inputs diminished the ability of the manufacturing sector to reach its full potential as the main engine for growth, thus hindering any chance of economic growth overcoming constraints in terms of the balance of payments.

Integrated industrial and trade policies from 1995 to 2008 led to the successful establishment of an export-oriented manufacturing sector. However, between 2009 and 2019, there was no clear impact of any active industrial policies. The Jordan Chamber of Industries highlighted several obstacles facing Jordanian industrial exporters. Government regulations regarding exports are rigid and depend on the technical requirements of the destination country. Further, Jordan does not maintain a monitoring system of the supply chain of Jordanian products, which is a requirement by the European Union. The Jordanian National Exporting Strategy (2022–2023), within the Economic Modernization Vision, aims to enhance export-oriented high-value industries such as chemicals, food products, pharmaceuticals and textile products. In line with this strategy, the Integrated Industrial Partnership Initiative brings together Bahrain, Egypt, Jordan and the United Arab Emirates (UAE) to integrate production in 87 proposed industrial projects, with an investment of US$3.4 billion, specifically in agriculture, food processing, chemicals and pharmaceuticals. As pharmaceutical industries are well developed in Jordan, and the country is rich in chemical raw

materials, there is potential for employment growth in these specific areas.

The structure of the manufacturing sector remained roughly the same over the period 2011–2019 (figure 4.7). The share of apparel manufacturing, which was the leading export industry, declined from 8 per cent in 2011 to 4 per cent in 2015 in terms of total manufacturing value added, and grew back to 9 per cent in 2019. Meanwhile, the food and beverages manufacturing industry seems to be slowly overtaking other manufacturing industries, as its share in total manufacturing value added grew from 12 per cent in 2011 to 17 per cent in 2019. While its contribution to exports is sizeable, particularly through exports to Arab countries, the contribution of food and beverages manufacturing industry to employment generation for Jordanian youth is modest, as the sector relies on low- and intermediate-skilled low-wage migrant workers. Meanwhile, the pharmaceutical, chemical and petroleum refining industries, which comprised 9 per cent, 10 per cent and 6 per cent of total manufacturing value added in 2019, respectively, are capital-intensive.

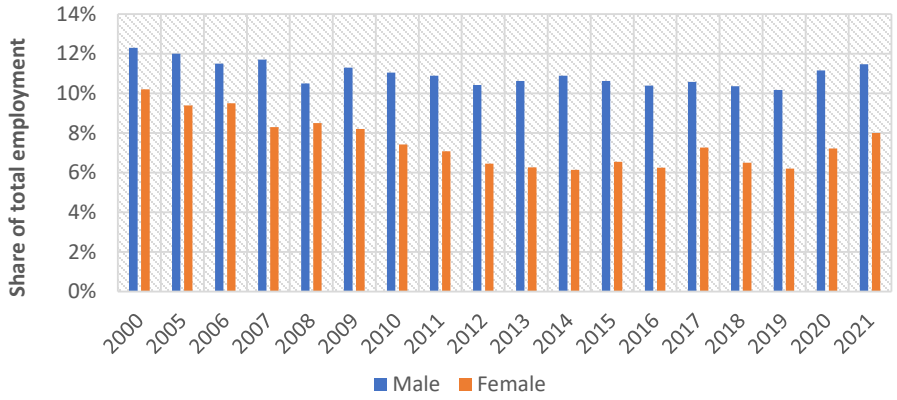
Figure 4.7. Manufacturing sector structure by value added and year



Source: DOS.

The capacity of the manufacturing sector to generate employment for Jordanians was stable between 2000 and 2021 (figure 4.8). The share of the manufacturing sector hovered around 11 per cent of total employment for Jordanian men, but declined from 10 per cent of total female employment in 2000 to 6 per cent in 2014 and increased to 8 per cent in 2021. This can partially be attributed to the high share of non-Jordanians working in the manufacturing sector, which amounted to 30 per cent of total employment in the manufacturing sector according to the 2018 DOS establishment survey. According to the survey, manufacturing subsectors employing the highest share of non-Jordanians were apparel (58 per cent), non-metallic mineral products, such as ceramic and glass (40 per cent), and transport equipment (27 per cent). Meanwhile, the share of non-Jordanian workers ranged between 14 and 16 per cent of total employment in industries such as automotive, rubber and plastic products and machinery and equipment.

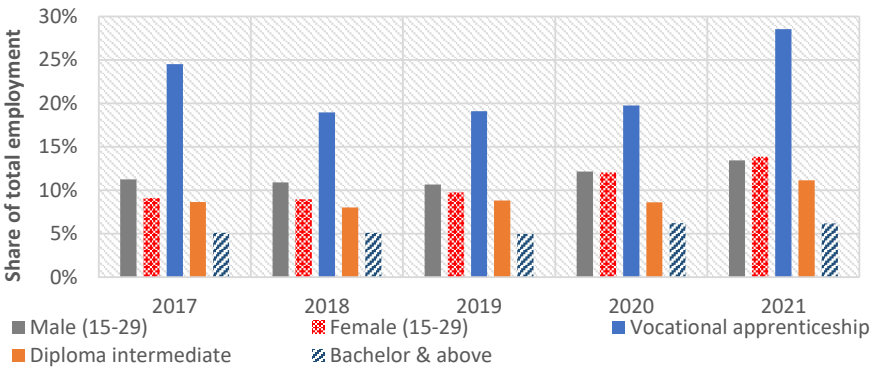
Figure 4.8. Share of the manufacturing sector in total employment by sex and year



Source: DOS.

Figure 4.9 shows that the manufacturing sector, however, absorbs a higher share of youth than the extractive industries, construction and agriculture, fishery, and forestry and is only outperformed by the services sector. Manufacturing, as a share of total employment of young Jordanians (aged 15–29 years) rose from 11 per cent and 9 per cent in 2017 to 13 per cent and 14 per cent in 2021, respectively. While the sector provides a small share (6 per cent in 2021) of employment for Jordanians with university education (bachelor or higher) it absorbed 29 per cent of Jordanian workers with vocational education, up from 25 per cent in 2017, and 11 per cent of workers with intermediate diplomas, up from 9 per cent in 2017. On the one hand, this indicates good linkages between vocational training and the labour market. On the other hand, the failure to attract highly educated workers (bachelor's degree or above) in the manufacturing sector is indicative of its low level of technological advancement and weak knowledge base, which inhibits the sector's ability to move up the value chain, enhancing the share of domestic added value, and increase its contribution to economic growth and development. For instance, the share of high- and medium-tech in total manufacturing value added increased from 20 per cent in 1995 to 29 per cent in 2009 and then declined steadily throughout the period 2009–2019 to reach 24 per cent in 2019. Similarly, the share of high- and medium-tech exports declined from 47 per cent of total exports in 2008 to around 36 per cent in 2019. Further, this highlights the poor working conditions and low wages associated with the jobs created by the manufacturing sector, rendering it more attractive to migrant workers rather than young educated Jordanians.

Figure 4.9. Manufacturing share of total employment by sex, education and year, ages 15–29 years

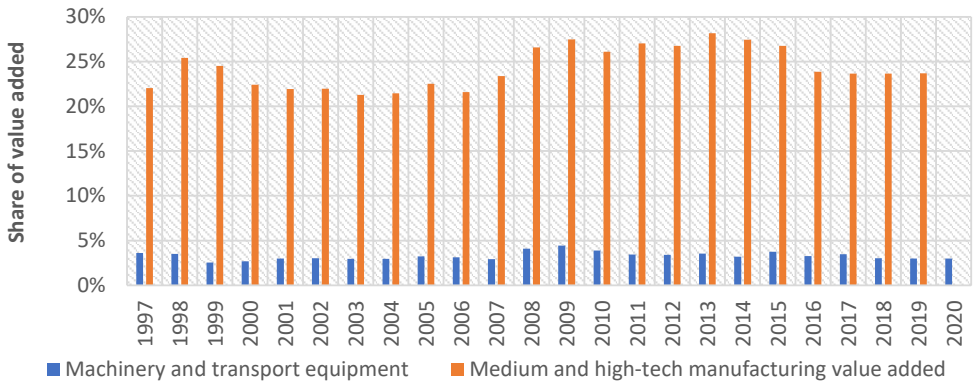


Source: DOS.

4.4. High-tech and the knowledge economy

Jordan lacks a substantial knowledge-based economy, which could boost the technological component of manufactured outputs for export. The share of high-tech exports in the total manufactured exports fluctuated between 1 and 3 per cent of total manufactured exports throughout the period 2000–2020. Similarly, information and communications technology (ICT) goods and services averaged around 1 to 3 per cent of total exports from 1998 to 2020. The "brain drain" continued over the same period as the economy failed to create employment for highly skilled Jordanian workers. Figure 4.10 shows a modest share of machinery and medium- and high-tech products as a portion of value added by manufacturing. It also shows that the share of these products declined during the early years of the high-growth period (1998–2008), which can be explained by the surge in output of textiles and garments in the QIZs. While their share increased from 2006 to 2009, they returned to 2000 levels by 2019.

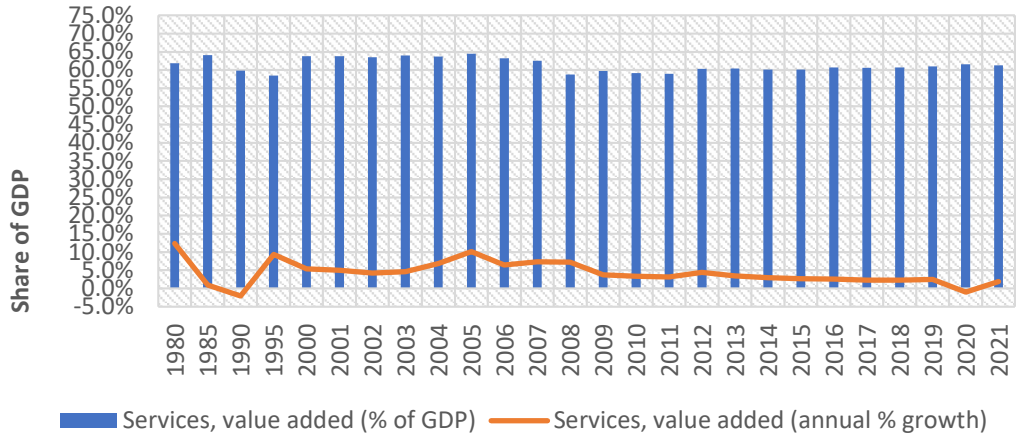
Figure 4.10. Share of total manufacturing value added by subsector and year



Source: World Development Indicators, World Bank.

4.5. Services

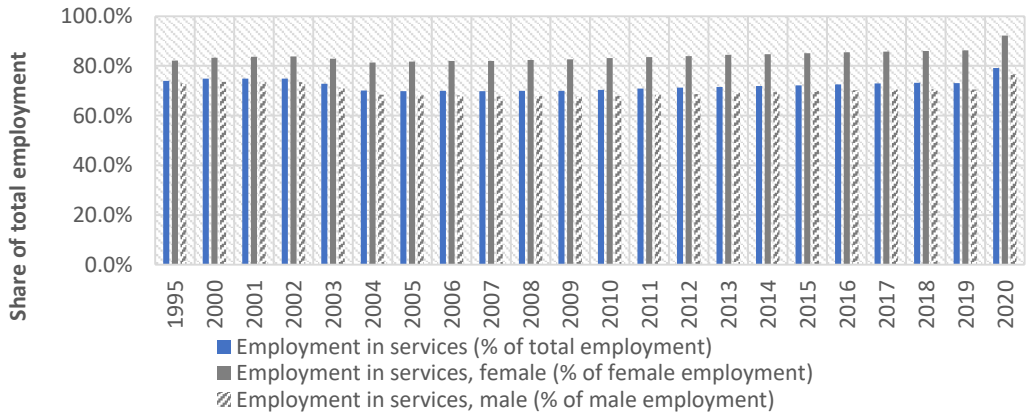
Figure 4.11. Performance of the services sector by year



Source: World Development Indicators, World Bank.

Services account for the largest share of GDP – around 61 per cent in 2021. The sector has grown over the last two decades, with growth rates fluctuating moderately, demonstrating vulnerability to economic shocks. Growth rates dipped in 2009 and 2010 during the global financial crisis, and again in 2011 and 2012 as a result of the Arab uprisings. In 2020, the impact of COVID-19 resulted in negative growth (-1 per cent) for the first time in three decades, with subsectors such as accommodation and travel experiencing around a 75 per cent decline. From 1998 to 2008, growth of the services sector was driven by the robust performance of real estate, business-related services, accommodation, travel and tourism. Travel, accommodation, real estate and financial services drove the recovery during the period 2012–2019.

Figure 4.12. Services share of total employment by sex and year

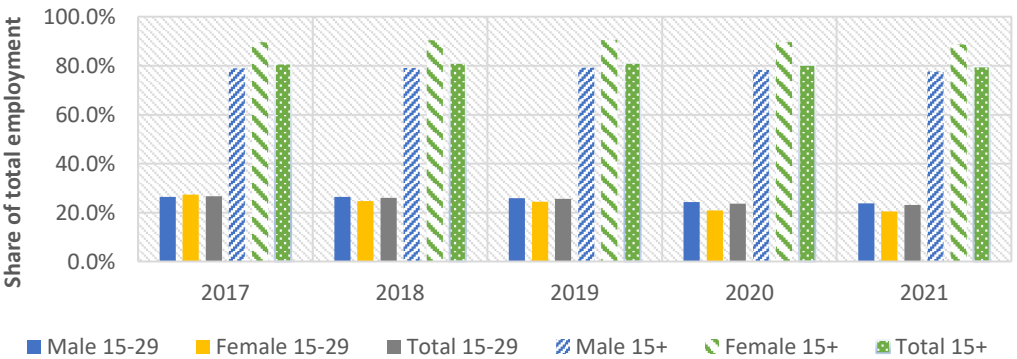


Source: ILOSTAT (International Labour Organization (ILO) estimates).

The services sector provides the largest share of employment. In 2020, some 79 per cent of total employment was in services, up from 72 per cent and 70 per cent in 2015 and 2010, respectively. Around 92 per cent and 77 per cent of employed females and males, respectively, were working in the sector in 2020 (figure 4.11). Excluding foreign workers, services employed around 80 per cent of all Jordanians (78 per cent of males and 89 per cent of females) in 2020.

The services sector employs a large proportion of young Jordanian males and females (aged 15–29). In comparison with other sectors, the services sector employs, by far, more Jordanian youth, particularly young women, followed by the manufacturing sector. Wholesale and retail and public administration and civil services are the largest employers for Jordanian males employing 22 per cent and 36 per cent of Jordanian males in the service sector, respectively. Education and health provided the largest share of female employment within the services sector (45 per cent and 16 per cent, respectively), and the largest share of employment for young Jordanian men and women.

Figure 4.13. Services share of total employment of Jordanians by sex, age group and year

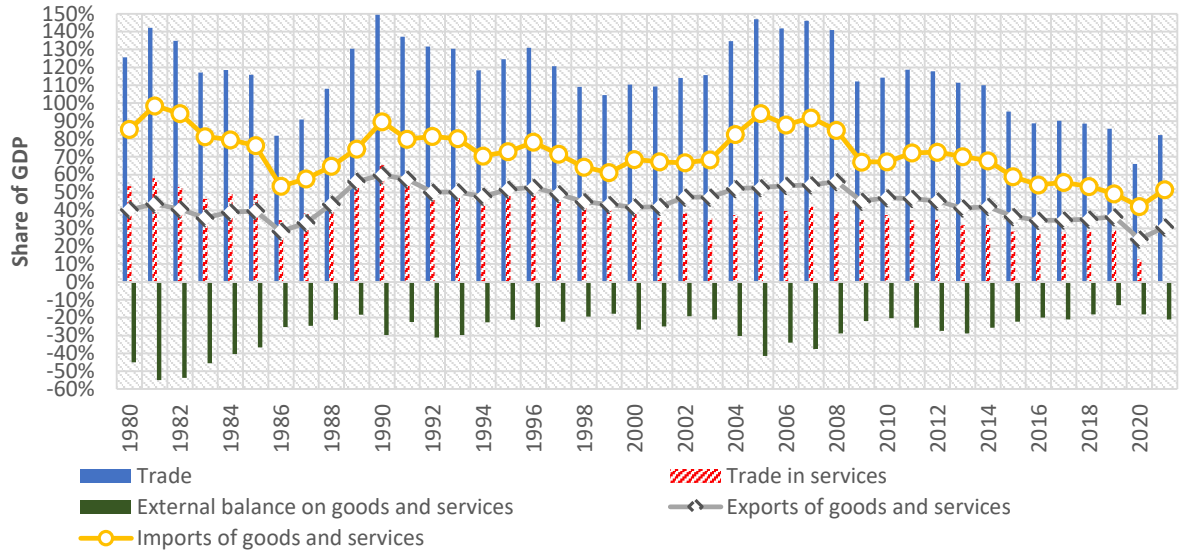


Source: DOS.

5. Balance of payments and foreign trade policies

As early as 1980, foreign trade amounted to 126 per cent of GDP, exports of goods and services comprised 40 per cent of GDP, while imports constituted 86 per cent of GDP. This deficit with the external sector has proved a chronic challenge. The impact of regional and global crises on trade performance is also noticeable, such as the Iran–Iraq war (1986), the first Gulf war (1990–1991), the second Gulf war (2003), the global financial crisis (2009–2010), the Arab Spring (2011–2012) and, more recently, COVID-19 (2020). Figure 5.1 shows the key trade indicators over time.

Figure 5.1 Key trade indicators by year (% GDP)



Source: World Development Indicators, World Bank.

5.1. Foreign trade policies and trade agreements

Trade liberalization was one of the centrepieces of the reform programme launched in the mid-1990s. Its aim was to promote "export-led private-sector growth", based on the conviction that removing trade barriers would lead to superior economic performance in the long run because it enhances economic efficiency and improves resource allocation. Most of the current trade and investment policies in Jordan were crafted between 1995 and 2005 and were anchored in bilateral and multilateral free trade and cooperation agreements, in addition to commitments stemming from WTO membership. Trade reforms were directed towards lowering the average level of tariffs and the maximum tariff rate, removing non-tariff barriers, reducing the number of bands, simplifying procedures, and aligning trade regulations with WTO standards.

Since the end of the 1990s, Jordan has engaged in several regional and bilateral free trade treaties, further eliminating trade barriers on a preferential basis, including the Euro-Mediterranean Association Agreement with the European Union (EU) and a free trade agreement (FTA) with the European Free Trade Association (EFTA).[15] The association agreement between Jordan and the EU was signed in 1997 and came into force in 2002. Under this treaty Jordanian exports of industrial

[15] EFTA members include Iceland, Liechtenstein, Norway, Switzerland.

products were granted duty-free access to EU markets, and Jordan agreed to phase out tariffs on European industrial goods by 20 per cent per year, except for a limited number of products on which higher custom duties applied,[16] as well as certain local products that took advantage of a transition period, for which tariffs were reduced by 10 per cent per year from 2006. As for agricultural products, Jordan was the first among the Mediterranean countries to initiate trade liberalization in this sector. In January 2006, the EU removed trade barriers for all Jordanian agricultural exports by 2010. Jordan gradually phased out tariffs, opening its market for most European agricultural exports between 2007 and 2013.[17] The agreement with EFTA states[18] was signed in 2001, and entered into force the following years. It provided for the complete liberalization of trade among member countries over a 12-year transition period.

Jordan is a party to two separate trade agreements that include the United States. The first was a trilateral agreement, comprising Jordan, the United States and Israel, signed in 1996. This agreement established special zones (QIZs) in Jordan and Israel, within which producers were granted duty-free and quota-free access to the US market provided that products complied with specific content requirements. Jordan and Israel were required to contribute, jointly, at least 35 per cent of the value added to products.

The QIZ agreement is significantly different from a free trade treaty, as it does not entail symmetrical trade liberalization but, rather, a unilateral concession to Jordan. Jordan is not required to guarantee the same treatment to US goods. In 2000, Jordan also concluded an FTA with the United States (JUSFTA), applicable from 2001. The two countries agreed to remove trade barriers and phase out tariffs on bilateral trade for industrial products and services within 10 years, except for tobacco and alcohol, on which Jordan can apply duties up to 80 per cent, and agricultural goods, for which a different schedule of tariffs is applied.

At the regional level, Jordan belongs to two trading groups: the Great Arab Free Trade Area (GAFTA), and the Agadir Agreement. GAFTA includes 17 Arab countries and was launched at the Arab League Summit in Amman in 1997, entering into force in 1998.[19] Goods traded between GAFTA members have been completely liberalized since January 2005. Because of health, security and other national concerns members agreed to exclude 400 products. The Agadir Agreement, signed in 2004 by Jordan, Egypt, Morocco, and Tunisia, created a free trade area to foster economic integration and adopted the Pan-Euromed rules of origin, which allow for diagonal accumulation of origin between countries that are part of the Euro-Mediterranean network of association. Several bilateral FTAs were also signed, including with Singapore (August 2005), the Association Agreement Establishing a Free Trade Area with The Republic of Turkey (signed 1 December 2009 and entered into force 1 March 2011), and Canada, signed in 2017.

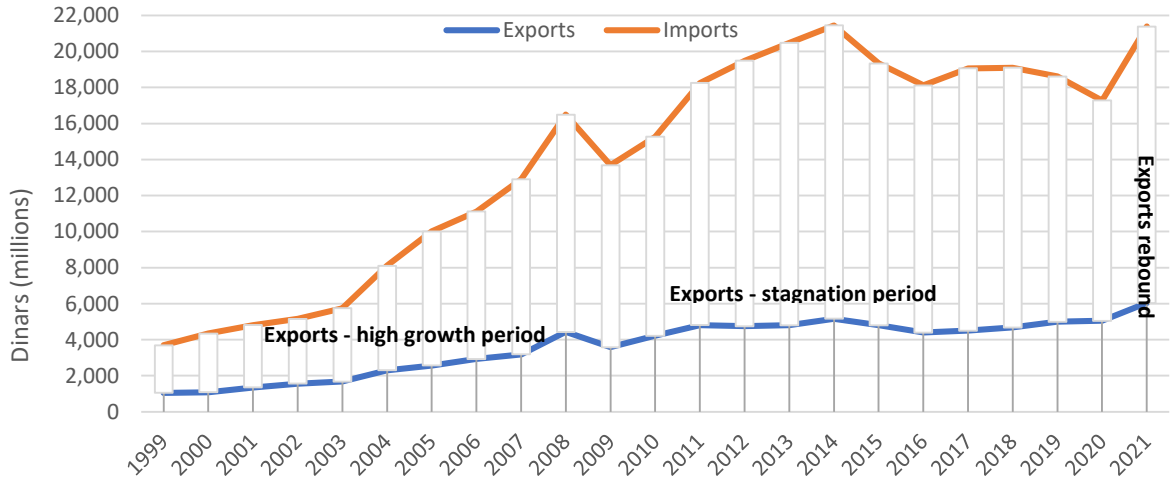
Jordan signed another compact agreement with the EU in 2016, which included other non-trade-related issues, such as illegal migration and refugees. The agreement relaxed the rules of origin laid down in the EU–Jordan FTA, providing easier access to EU markets over 10 years for a wide range of goods, with the stipulation that production must formally employ a minimum proportion of Syrian refugees.

Interestingly, in 2022, the Jordan Chamber of Industry launched a pilot project to test firms' product readiness for export and provide recommendations for free for the first 150 firms, before becoming a paid service.

[16] E.g. cigarettes, second-hand cars, garments, shoes and carpets.
[17] European Commission, *Trade Issue. Bilateral Trade Relations, Jordan* (European Union). http://ec.europa.eu/trade/issues/bilateral/countries/jordan/index_en.htm.
[18] Iceland, Liechtenstein, Norway and Switzerland
[19] GAFTA Member States include: Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Occupied Palestinian Territory, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.

5.2. Foreign trade in goods and services

Figure 5.2. Exports vs. imports by year (millions of dinars)

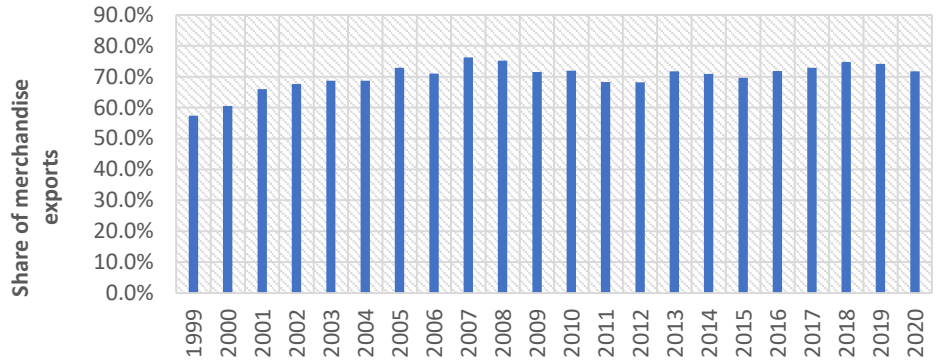


Source: CBJ.

From 1999 to 2009, Jordanian exports quadrupled, led by manufactured goods, which, on average, comprised around 79 per cent of total exports, followed by agricultural products (13.5 per cent), and fuels and raw mining products (6.5 per cent). Manufactured goods as a share of total exported merchandise grew from around 57 per cent in 1999 to 76 per cent in 2007. It then fell to about 68 per cent in the wake of the so-called Arab Spring in 2011 and 2012 and recovered in 2013 to reach 72 per cent. Nonetheless, exported manufactured products lacked high levels of technology, and still required a high share of imported intermediate-level inputs. QIZs dominated exports, mostly clothing, textiles and garments to the US market. Exports to the United States grew from 1 per cent in 1999 to 26 per cent of total merchandise exports by 2005–2006. They then declined to about 13 per cent, rising to 14 per cent from 2007 to 2012, because of the rising share of exports to Arab countries and India, and then rose back gradually from 2014 to 2021 to constitute a quarter of all merchandise exports.

Arab countries absorb, on average, around 35–40 per cent of Jordan's merchandise exports. Exports to the EU comprise only 2–3 per cent of Jordan's merchandise exports, despite the EU and Agadir FTAs and the closer proximity to European markets (appendix table A.2). The lack of market diversification undermined the export sector's resilience during global economic downturns. As a result of the uprisings in various Arab countries and the war in Syria, exports to these countries have significantly dropped. The war in Syria not only affected foreign trade with Syria, but also trade with Lebanon, Turkey and Eastern European countries, where exports need to be transported by air or sea instead of overland, implying higher costs. Exports stagnated from 2009 to 2019, following the global financial crisis and the Arab uprisings, and dropped again in 2020 as a result of the COVID-19 pandemic. A modest rebound was recorded in 2021.

Figure 5.3. Exports of manufactured goods as a share of total merchandise exports by year



Source: World Development Indicators, World Bank.

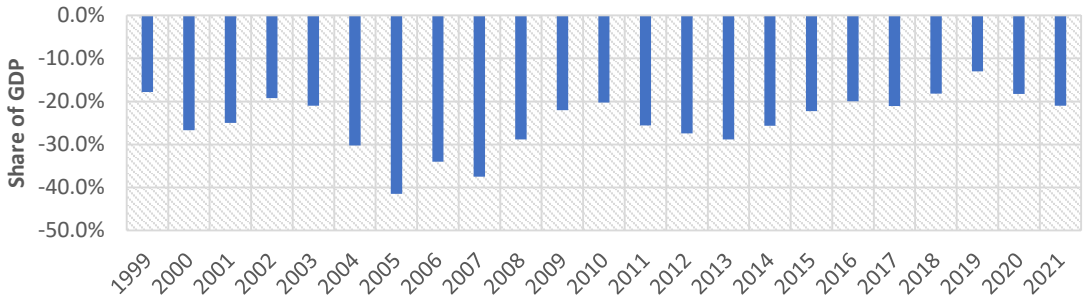
During the high-growth period (1999–2008), exports grew at a compound annual rate of around 3.5 per cent. In the period of stagnation (2009–2017), exports recorded a negative CAGR of around -4.6 per cent. The decline in exports eroded inflows of foreign currency at the macro level, while significantly impacting on firms reliant on exports, such as garment and textile manufacturers in the QIZs. A disaggregation of exports shows that food and beverages grew by only 6 per cent over the period 2009–2019, compared with 249 per cent over the period 1999–2009. Exports of textiles, garments and apparel grew by 124 per cent over the period 2009–2019, compared with 745 per cent over the period 1999–2009, declined by 15 per cent in 2020 and made a modest rebound in 2021, growing by 10 per cent, yet still below 2019 levels. Exports of electric and electronic equipment and machineries, vehicles and automotive parts and accessories, heavy machinery, steel and steel products recorded negative growth from 2009 to 2019 after impressive double- and triple-digit growth rates between 1999 and 2009 (appendix table A.1). Exports of food beverages continued to grow, albeit by only 5 per cent in 2020, despite the impact of the COVID-19 pandemic.

The decline in exports of manufactured goods, particularly from labour-intensive industries during COVID-19, negatively impacted employment levels. However, in the case of Jordanians, the effect was mixed since the manufacturing sector employed a large number of migrant workers and Jordanian nationals were largely unaffected by losses experienced by QIZ and SEZ firms. As the sector employed mostly workers with low and intermediate education levels, the direct impact on employment was concentrated in this segment of the labour force. However, indirect impacts and multiplier effects may have contributed to a decline in overall employment levels. Note that the performance of Jordan's exporting sectors had already deteriorated somewhat before the pandemic, as the country's comparative advantage narrowed.

Similarly, exports of services grew during the period 1999–2009, led by tourism and travel, which grew from 512.4 million dinars in 2000 to 2,088.5 million dinars in 2008. Transportation and shipping grew from 212.4 million dinars in 2000 to 593.1 million dinars in 2008. Starting 2010, exports of services grew at slower rate, yet their overall performance was modestly better than that of exports of goods. This may be explained by the fact that Jordan remained a regional hub for transportation, serving neighbouring countries that suffered from instability. As a result, transportation, travel and related services grew between 2011 and 2019.

5.3. Balance of trade in goods and services

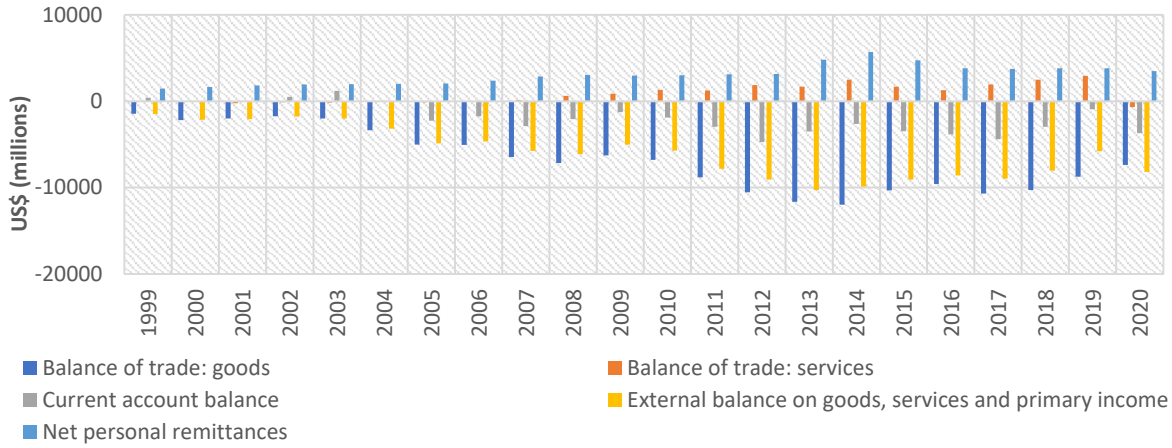
Figure 5.4. External balance on goods and services by year (% GDP)



Source: World Development Indicators, World Bank.

Compared with exports, imports grew at a faster pace from 1998 to 2008, leading to a widening deficit in the balance of trade. This figure reached a staggering 42 per cent of GDP in 2005 and declined to 29 per cent and then 22 per cent of GDP in 2008 and 2009, respectively. The deficit in the balance of trade persisted from 2009 to 2019, reaching 29 per cent of GDP in 2013, declining to 13 per cent of GDP in 2019 and climbing to 18 and 21 per cent of GDP in 2020 and 2021, respectively (figure 5.4). While the external balance of trade in goods maintained an increasing deficit, the external balance in trade in services recorded surpluses for most of the period from 1999 to 2020, with occasional deficits, yet lower than the deficit in the balance of trade in goods. The surplus in trade in services only partially offset the large deficit in trade in goods and, therefore, the total balance of trade recorded deficits throughout the period from 1999 to 2021. The chronic negative balance of trade has, historically, presented a persistent challenge for the Jordanian economy. The short-lived export boom during the 1998–2008 period failed to effectively tackle this challenge, placing tremendous pressure on foreign reserves and the exchange rate.

Figure 5.5. Balance of payments indicators by year (US$ millions)

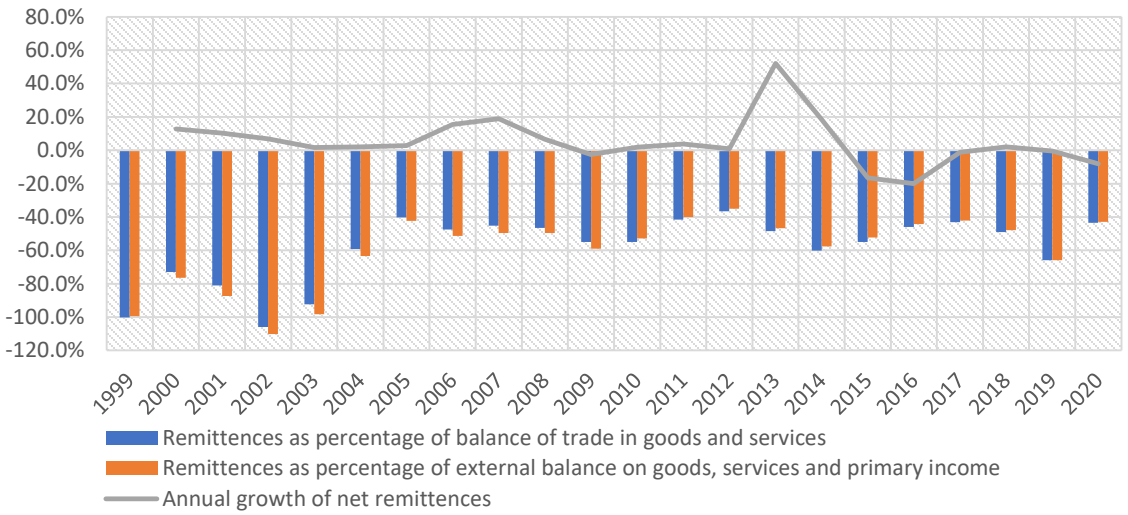


Source: World Development Indicators, World Bank.

5.4. Current and capital accounts and FDI

The external balance deficit widens when primary income is included because of the net outflow of income. Foreign debt and aid finance a sizeable portion of the external balance deficit. As shown in figure 5.6, net remittances (inflows from Jordanian workers abroad, mostly in Gulf countries, minus outflows from foreign workers in Jordan) offset a large portion of the external balance deficit, mitigating the overall current account balance. In 2002, for instance, 106 per cent of the balance of trade in goods and services and 110 per cent of the external balance on goods, services and primary income were offset by net remittances and, as a result, the current account recorded a surplus the same year. Additionally, development assistance in the form of loans and grants helped offset some of the external balance deficits. Nonetheless, starting in 2004, net remittances grew, albeit slowly, and external balance deficits widened; only around 60–67 per cent of the deficit, on average, was offset by net remittances. Negative net investment income increased as a result of large foreign investments in Jordan. Consequently, the current account balance started recording a persistent and growing deficit between 2005 and 2021.

Figure 5.6. Net remittances by year



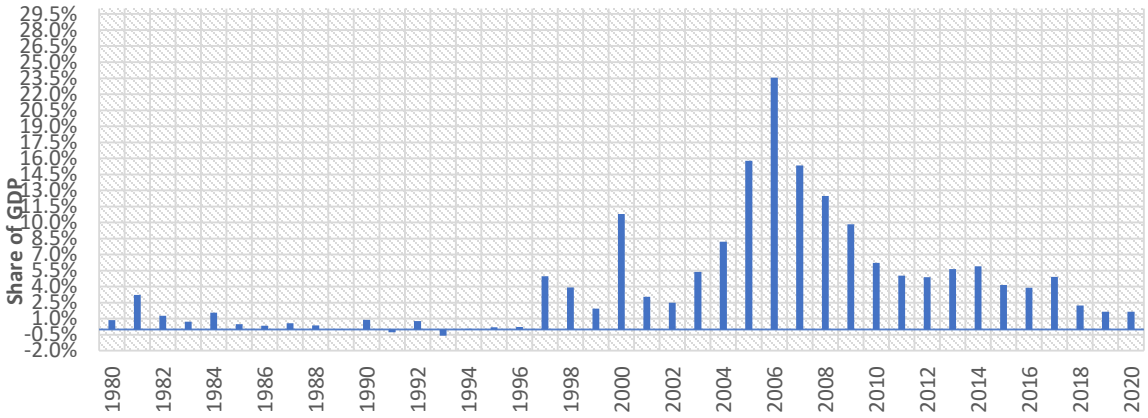
Source: World Development Indicators, World Bank

Current account deficits were financed by an influx of FDIs. Net FDI inflows grew from 1.9 per cent of GDP in 1999 to 23.5 per cent of GDP in 2006, and then declined gradually to reach 6.2 per cent of GDP in 2010. The Jordan Investment Board (JIB) provided various financial incentives and legal exemptions for domestic and foreign investors, simplifying registration and licensing of investment projects. The Investment Promotion Law of 2006 removed certain regulatory and bureaucratic obstacles to foreign investment. However, the impact of FDI on employment generation, during the high-growth period, was less than expected. A substantial proportion of FDI was channelled into the purchase of public sector firms offered through the privatization programme, thus failing to create new employment opportunities. Another sizeable proportion of FDI was absorbed by capital-intensive industries and sectors that did not generate new jobs. Meanwhile, those labour-intensive industries that received a large share of FDI funds generated mostly low-paid jobs for workers with low- to intermediate-level skills and education, which were not well suited to educated Jordanian youth, thus attracting mainly foreign workers.

The decline in FDI does not seem to be a direct result of COVID-19, as this decline had started well before the pandemic. In fact, the decline was visible after the global financial crisis and continued in the wake of the Arab uprisings in 2011 and 2012, reaching only 4.2 per cent of GDP in 2012, as increasing risks and instability, and a deteriorating business environment, deterred investors. A

short-lived modest recovery appeared from 2015 to 2017. However, in 2019 and 2020 net inflows of FDI (as a percentage of GDP) dropped to the pre-1999 boom levels of around 1.6 per cent. The decline in FDI was associated with changes in investor profiles as new partners (e.g. Malaysia and South Korea) replaced traditional sources for FDI, such as the UAE and Saudi Arabia, and the energy sector replaced construction and manufacturing as the main recipients of FDI. The substantial inflows of investment into the energy sector (around US$4.4 billion) between 2010 and 2016 [20] did not significantly contribute to employment generation. Overall, FDI positively impacted only short-term employment (explored in the econometric analysis in the following section).

Figure 5.7. FDI by year (% GDP)



Source: World Development Indicators, World Bank.

5.5. The nexus of macroeconomic, sectoral and trade policies and employment

The QIZs have played a key role, not only in boosting export performance but also in restructuring trade flows. The value of exports originating in the QIZs grew from US$159,000 in 1999 to a peak of $1 billion in 2006. Meanwhile, the rise of imports from China was, in part, a by-product of QIZ manufacturing, which consists mainly of assembling activities, producing a low share of domestically added value. Most intermediate inputs, such as yarn and other textiles for clothing production, are imported from low-cost producers, mainly from China. In 2007, 33 per cent of total Chinese exports to Jordan comprised textiles and textile articles.[21]

Trade liberalization was expected to stimulate job creation by inducing a strong supply response in those industrial sectors previously affected by high prices of intermediate inputs subject to tariffs. By increasing output, it was supposed, demand for labour would rise in export-oriented industries.[22] However, by 2007, in the middle of the sustained period of growth, new jobs in the manufacturing sector accounted for only 8.5 per cent of total employment created, while most employment opportunities were created in the services sector. In comparison, the share of new jobs created by the public sector was 31.2 per cent.[23] Apart from the textile industries, manufacturing since liberalization has represented only a modest source of new jobs – reducing the unemployment rate to 12.7 per cent by 2008, down from 15 per cent in 2002 and 1998. [24] We

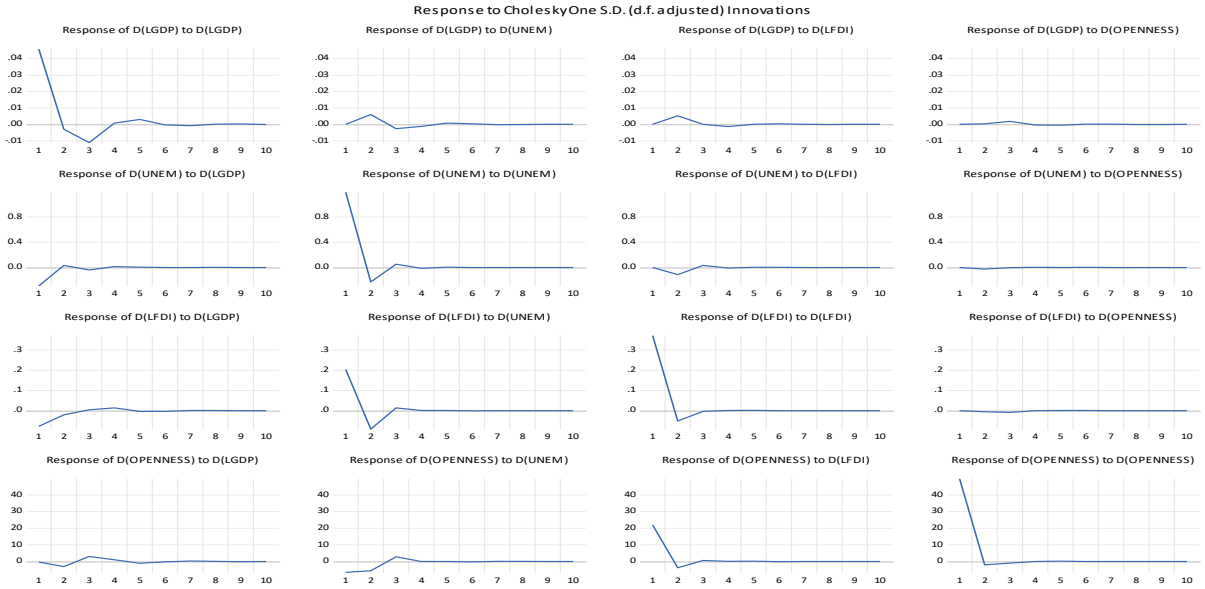
[20] Taghdisi-rad, Sahar, "Macroeconomic Policies and Employment in Jordan".
[21] Cassing, James, and Anna Maria Salameh. Jordan–United States Free Trade Agreement Economic Impact Study: Searching for Effects of the FTA on Exports, Imports and Trade Related Investments (USAID, June 2006); World Trade Organization, «Trade Policy Review: Jordan. Concluding remarks by the Chairperson», 10 and 12 November 2008, http://www.wto.org/english/tratop_e/tpr_e/tp306_crc_e.htm.
[23] Department of Statistics, Job Creation Survey – Annual Report, 2007.
[24] Arouri, Fathi A., Unemployment in Jordan (European University Institute, 2007); updates from the Department of Statistics.

may conclude that this trade structure was not very conducive to employment creation. [25]

Although more than 50,000 jobs were created within QIZs during their first years of operation, only one third of these went to Jordanian workers. In 2007, according to the Ministry of Labour, QIZs employed some 54,000 workers, but this number decreased dramatically to 37,351 by March 2009. The number of Jordanian workers in QIZs decreased from 16,156 workers in January 2007 to 9,211 workers in March 2009. [26] At that time, around 180,000 Jordanians were unemployed, yet more than 335,000 non-Jordanians were working in Jordan. Despite the high demand for labour, unemployment was also high as most vacancies were filled by migrant workers, considered somewhat of a paradox in the country's labour market. Added to this, in 2008 the ILO estimated that around 600,000 Jordanians – half the Jordanian labour force – were working abroad, mostly in the Gulf countries. The substantial outflow of Jordanian workers, mostly skilled, contributed to a shortage of skilled workers at home, and these were only partially replaced by migrant workers. [27] The model seems based on the export of skilled Jordanian workers at wage rates higher than the cost of importing low- and intermediate- level skilled foreign labour, with reliance on a net surplus of workers' remittances.

This phenomenon persists to date, and provides only a weak direct social benefit for local communities from the QIZs, mainly because of their large share of foreign workers (around 70 per cent on average).[28] Work conditions are unfavourable with low wages, which are equal or lower than the minimum wage since companies in the QIZs are exempted from the minimum wage requirement.[29] While the demand for low- and intermediate- level skills by the exporting manufacturing sector seems to fit the labour migration model, it does not address the persistently high levels of unemployment, particularly among Jordanian youth. Moreover, the model is currently threatened by recent concerted efforts to nationalize jobs through the substitution of nationals for foreigners throughout the Gulf countries. This is particularly important for Jordan since most jobs nationalized in the Gulf are professional, white-collar jobs, which usually attract Jordanians, rather than low-skilled jobs that usually attract other nationalities (e.g. South Asia).

Figure 5.8. Macroeconomic variables, response to trade liberalization and inflows of FDI



Source: Authors' calculations based on data from CBJ.

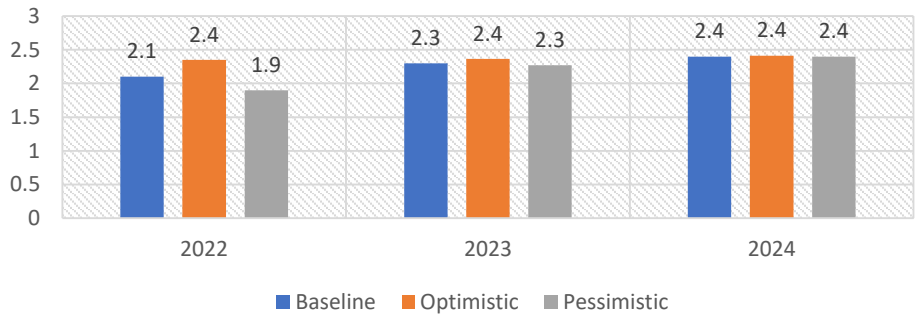
[25] Taghdisi-rad, Sahar, "Macroeconomic Policies and Employment in Jordan", 2012.
[26] http://www.mol.gov.jo.
[27] Department of Statistics, *Job Creation Survey.*
[28] Kardoosh, Marwan, e Riad Al Khouri, "Qualifying Industrial Zones and Sustainable Development in Jordan", ERF 11th Annual Conference, Beirut, 14–15 December (September 2004), p. 24.
[29] The minimum wage was set at 80 dinars (US$112) per month for the first time in 1999, in accordance with article 52 of the Labour Law (No. 8 of 1996), and went into effect in January 2000. It was then raised to 85 dinars in 2003, 95 dinars in July 2005, 110 dinars in 2006 and 150 dinars in January 2009.

To estimate the response of macroeconomic variables to trade liberalization (degree of openness to trade) and the inflow of FDI, a VAR model was estimated using the variables:

- log of GDP;
- the unemployment rate;
- log of FDI;
- the openness rate (defined as the ratio of total exports and imports to GDP).

The Johansen cointegration test did not find any cointegration relation. Thus, a VAR model at first difference variables was estimated. The effects were only found in the short run, but no stable relation was found in the long run (figure 5.8). Since openness in Jordan was mostly driven by an increase in imports of consumer goods and inputs to manufacturing, particularly textile and garment factories in the QIZs, openness seems to have had no apparent effect on either GDP or unemployment. This does not dismiss the positive impact of the increase in exports on GDP during the high-growth period (1998–2008). However, this positive effect was offset by the impact of the surge in imports. Nevertheless, FDI had a positive effect on GDP and a negative effect on the unemployment rate, but only in the short run.

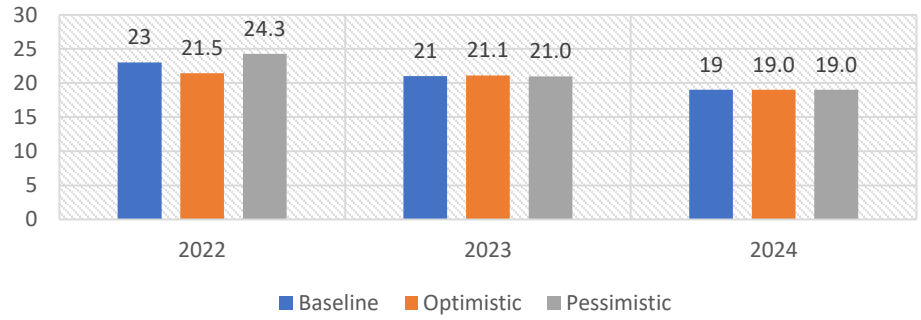
Figure 5.9. Scenario-based projections of the impact of trade liberalization on growth rates, 2022–2024



Source: Authors' calculations based on data from the CBJ.

To assess the impact of trade and capital liberalization, the outcome variables in the above VAR model were simulated under three scenarios: (1) the baseline scenario was based on forecasts in the *Jordan Economic Monitor* (2022); (2) the optimistic scenario assumed that FDI will increase by 30 per cent in 2022, based on the moderate 2017 rate of growth in FDI; (3) the pessimistic scenario assumed a decline in FDI of 25 per cent. The projections indicate a 0.3 percentage point increase in GDP growth in the optimistic scenario in 2022. In the pessimistic scenario the growth rate of GDP would be 1.9 per cent, but will return to the baseline value after 1 year. This result reflects the temporary effect of FDI on GDP. GDP growth projections under optimistic and pessimistic scenarios converge to the baseline scenario by 2024. Similarly, figure 5.10 shows temporary but modest positive and negative effects of capital inflows on unemployment in 2022 in the optimistic and pessimistic scenarios, respectively, with convergence to the baseline scenario by 2024.

Figure 5.10. Scenario-based projections of the impact of trade liberalization on unemployment rates 2022–2024



Source: Authors' calculations based on data from the CBJ.

5.6. Growth and balance of payments constraints

In newly industrialized developing and transitional economies, growth is highly constrained by the balance of payments. For the export-led growth model to succeed, as in the case of Southeast Asia, the following pillars are key:

- significant and rapid productivity gains, supported by labour force up-skilling;
- higher-level positioning in the value chain with an increased share of domestically added value;
- diversified exports in terms of goods and markets;
- enhanced competitiveness through a carefully crafted combination of quality and price;
- enhanced technological transfers;
- FDIs directed to industries with high forward and backward linkages;
- enhanced share of domestic savings in investments;
- domestic supply chains with enhanced integration into global supply chains;
- skills required by the demand side of labour market are met through curbing the brain drain and boosting investment in human development, particularly education;
- a strategy to move from assembling to manufacturing, and from copying and adopting technology to innovation.

These pillars of the export-led growth model are the only way to move from a deficit in the balance of trade to a surplus, which is a necessary condition for the model to work. An export-led growth model will not create enough decent jobs to reduce unemployment while under pressure from a persistent deficit in the balance of trade, depleting foreign reserves and increasing vulnerability to fluctuating levels of FDI and speculative capital inflows/outflows. Against this backdrop, the Jordanian model during the high-growth period fell short of moving to the next stages of export-led growth and failed to reduce the balance of trade deficit because of insufficient progress on most of these key pillars.

Any Jordanian export-led growth model must still confront the lack of energy security. That is, Jordan faces high costs and unstable supplies of largely imported energy. Around 46 per cent of manufacturing value added is energy-intensive and the cost of electricity in Jordan is among the highest in the world.[30] In terms of stability, the disruption in natural gas supplies from Egypt in 2011 and 2012 was a key contributing factor to the sharp decline in manufacturing value added and exports, which fed into the decline in economic growth.

[30] The World Bank, Jordan Economic Monitor, 2022.

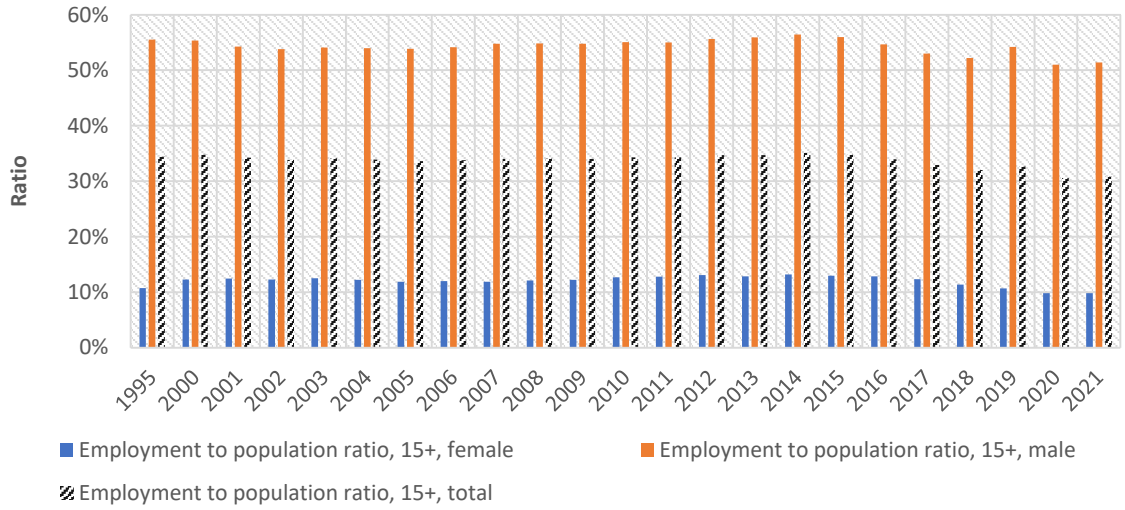
▶ 6. Employment and the labour market

6.1. General trends: Labour force and employment

The labour market in Jordan exhibits certain peculiarities. Even though employment and labour productivity are growing, unemployment is also rising. This can be explained by the dual structure of the labour market: a large migrant workforce adjacent to the national labour force. The unemployment rate is particularly high among youth and women. In 2005, during the high-growth period, more than 100,000 additional jobs were created in Jordan, but only 16,500 went to Jordanians.

The employment-to-population ratio in Jordan averaged around 34 per cent from 2000 to 2016, declining slowly between 2017 and 2021 to reach 31 per cent in 2020 and 2021, down from 35 per cent in 2016. The employment-to-population ratio for males rose from 54 per cent in 2004 to 56 per cent to 2014, and then declined to 51 per cent in 2020 and 2021. Meanwhile, the employment-to-population ratio for females in Jordan is among the lowest in the world, averaging around 10 per cent in 2021, down from 13 per cent in 2015 (figure 6.1).[31]

Figure 6.1. Employment-to-population ratio by sex and year



Source: ILO estimates, ILOSTAT.

With an adult (15+ years) literacy rate of around 98 per cent, the Jordanian labour force is relatively educated, particularly women. Around 62 per cent of women in the labour force are educated to the levels of post-secondary, non-tertiary or university (bachelor's degree or equivalent). Meanwhile, men in the labour force are more evenly distributed with respect to education, from early childhood education (reading and writing) to university level. In recent years, the percentage of adult males with primary and upper-secondary education has increased, while the percentage of adult males with only early childhood and primary education decreased. This points towards a positive shift in the education level of labour market entrants (supply), which should be matched with the appropriate level of demand.

[31] Kasoolu, Semiray, Ricardo Hausmann, Tim O'Brien and Miguel Angel Santos, "Female Labour in Jordan: A Systematic Approach to the Exclusion Puzzle", CID Working Paper Series (Harvard University, October 2019), https://nrs.harvard.edu/URN-3:HUL.INSTREPOS:37366403.

Table 6.1. Distribution of the labour force by sex and education level, 2017–2020 (%)

		2017	2018	2019	2020
Females 15+	X. No schooling	7	4	3	3
	0. Early childhood education	14	12	13	17
	1. Primary	10	9	9	10
	3. Upper-secondary	6	5	6	4
	4. Post-secondary non-tertiary	13	13	12	12
	6. Bachelor's or equivalent	45	52	53	50
	7. Master's or equivalent	3	3	3	3
	8. Doctoral or equivalent	1	1	1	1
	Total	100	100	100	100
Males 15+	X. No schooling	3	4	4	4
	0. Early childhood education	32	31	28	29
	1. Primary	26	27	26	27
	3. Upper-secondary	12	12	17	17
	4. Post-secondary non-tertiary	9	9	8	8
	6. Bachelor's or equivalent	16	16	15	15
	7. Master's or equivalent	1	1	1	1
	8. Doctoral or equivalent	1	1	1	1
	Total	100	100	100	100
Total 15+	X. No schooling	4	4	4	4
	0. Early childhood education	28	28	26	27
	1. Primary	23	24	24	24
	3. Upper-secondary	11	11	15	15
	4. Post-secondary non-tertiary	10	10	9	9
	6. Bachelor's or equivalent	22	23	21	21
	7. Master's or equivalent	2	1	1	1
	8. Doctoral or equivalent	1	1	1	1
	Total	100	100	100	100

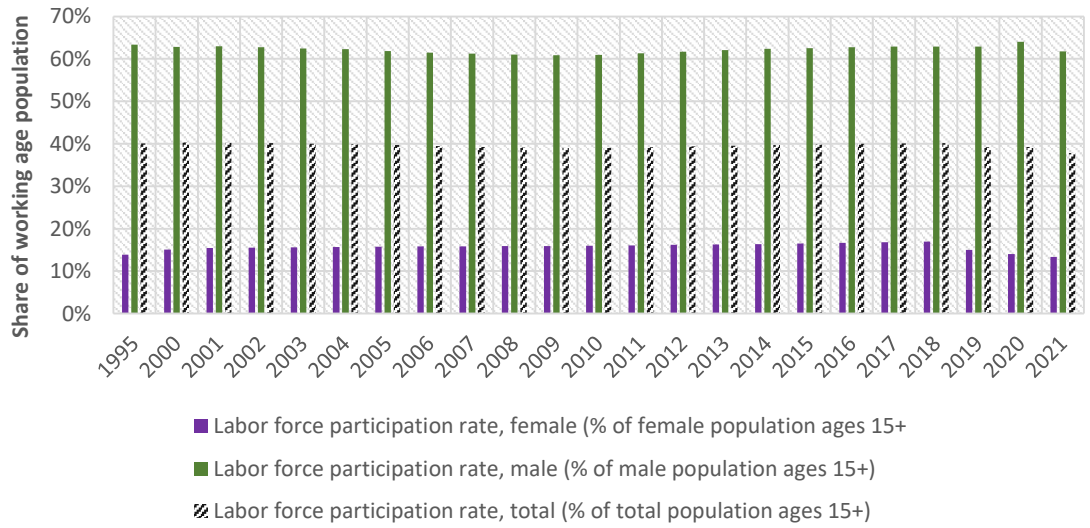
Source: ILO estimates, ILOSTAT.

The labour force participation rate for the adult population (15+) averaged around 39–40 per cent from 1995 to 2021 (figure 6.2). For males (15+), it declined from 63 per cent in 1995 to 61 per cent in 2008 and rose slightly back to 63 per cent from 2016 to 2018, before rising to 64 per cent in 2020 and dropping to 62 per cent in 2021. Meanwhile, the female labour force participation rate remained low, at around 16 per cent from 2000 to 2019, dropping to 14 per cent in 2020 and 13 per cent in 2021. As of 2021, the female labour force participation rate in Jordan ranked the third lowest in the world after Yemen (6.0 per cent) and Iraq (11.1 per cent).

According to the DOS, the labour force participation rate for Jordanian women with high school education or less is about 15 times lower than that of their male counterparts, and about 13 times lower than that of women with a university degree. Unemployment among women with high school education or less is significantly lower compared with their male counterparts. The gap between male and female labour force participation narrows steadily with increasing levels of education, with no significant difference at the postgraduate level.[32]

[32] Department of Statistics, Job Creation Survey.

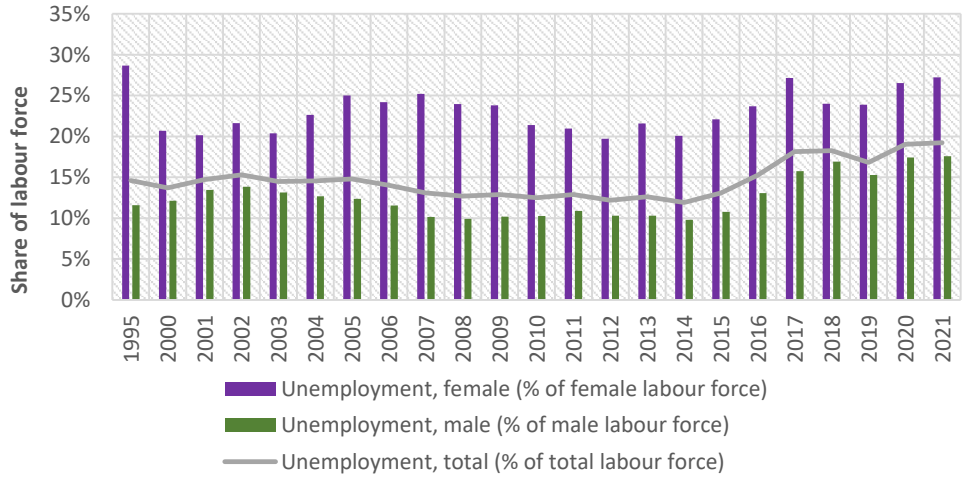
Figure 6.2. Labour force participation (15+) by sex and year



Source: ILO estimates, ILOSTAT.

6.2. Unemployment

Figure 6.3. Unemployment rates by sex and year



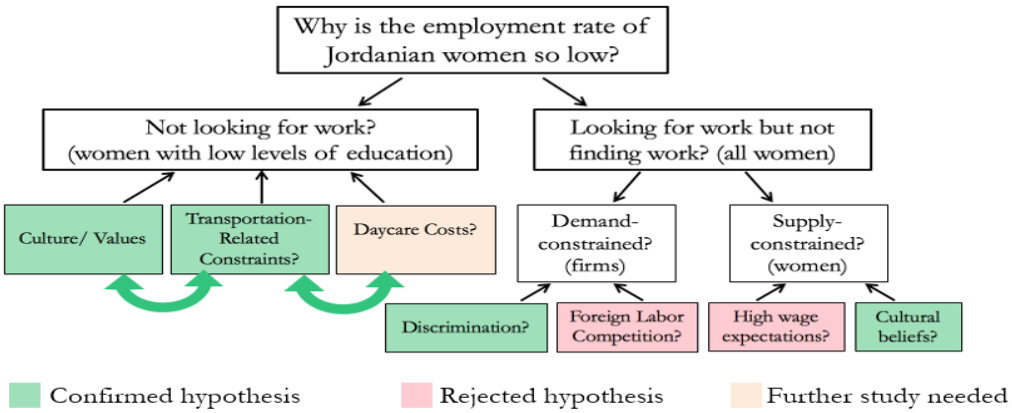
Source: ILO estimates, ILOSTAT.

Driven by robust performance of the manufacturing and services sectors from 1998 to 2008, unemployment rates slowly declined from an average of 15 per cent between 1995 and 2002 to 13 per cent between 2008 and 2015, although this is still considered a very high rate of unemployment. Unemployment rose again in 2016, reaching 18 per cent in 2017 and 2018 and 19 per cent in 2020. Despite an economic recovery in 2021, unemployment rates persist at 19 per cent.

Women are disproportionately affected by unemployment in Jordan. While the unemployment rate for males declined from 14 per cent in 2002 to 10 per cent in 2008, female unemployment rose from 22 per cent to 24 per cent during the same period. In 2019, female unemployment was

still a staggering 24 per cent compared with 15 per cent for their male counterparts. Similarly, the COVID-19 crisis impacted females disproportionately; unemployment among women rose to 27 per cent, compared with 17 per cent among men. Female unemployment did not correlate with economic growth for most of the period from 2000 to 2019. A modest increase in the labour force participation rate to 17 per cent by 2018 was accompanied by an increase in unemployment rate to 27 per cent (up from 24 per cent in 2014). The unemployment rate only stabilized following a decline in female labour force participation rates to 15 per cent in 2019, bringing the female unemployment rate down to 24 per cent. Moreover, for women, the unemployment rate is positively correlated with education level, until university level, but then drops significantly at the postgraduate level.[33]

Figure 6.4. Female employment problem tree



Source: Kasoolu et al., "Female Labour in Jordan", 2019.

Table 6.2 shows that, first, while there is an apparent negative correlation between female unemployment and education level, male unemployment does not seem to correlate with education. Nonetheless, men with intermediate levels of education, particularly vocational, seem to experience lower, but more dynamic, rates of unemployment. This is due to demand from the manufacturing sector. Second, men with low or no education are more likely to be unemployed, compared with their female counterparts, while educated women are more likely to be unemployed compared with their male counterparts. This is because of the extremely low percentage of females with low education levels participating in the labour force (table 6.1). Third, the impact of the COVID-19 was more profound for men and women with intermediate levels of education, who comprise the large bulk of the labour force.

Table 6.2. Unemployment rate by sex, education and year, adults aged 15+ (%)

	2017		2018		2019		2020		2021	
Education level	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Illiterate	17.6	6.3	20.3	0.0	18.5	0.0	23.8	1.1	21.8	0.0
Read and write	15.5	10.6	16.6	0.0	18.3	2.0	21.8	18.7	20.5	8.6
Elementary	15.4	8.8	18.2	10.5	17.4	9.9	27.6	27.8	24.6	12.0
Preparatory	11.6	10.0	11.9	2.3	12.4	4.5	17.5	15.0	15.5	5.3
Basic education	17.3	36.0	18.9	14.9	19.3	18.4	23.3	23.3	25.4	19.1
Vocational apprenticeship	13.6	26.9	22.0	64.5	16.3	55.8	27.8	52.3	24.5	66.5
Secondary	9.7	30.5	10.6	16.4	13.0	10.8	15.0	20.4	17.7	16.3
Diploma intermediate	10.4	29.2	13.0	23.4	10.6	18.8	16.1	26.4	16.0	25.9
Bachelor's and above	16.0	33.1	17.9	31.1	19.2	32.0	21.6	33.6	24.0	34.6

Source: DOS.

[33] Department of Statistics, Job Creation Survey.

6.3. Patterns and dynamics of the labour market

The services sector comprises close to two thirds of total employment, followed by the manufacturing sector, while agriculture and extractive industries provide an exceedingly small share of total employment. Table 6.3 shows that workers with medium-level skills predominate across all sectors. Around 72 per cent of total employment in the manufacturing sector is comprised of people with medium-level skills; 18 per cent have high-level skills and 10 per cent have low-level skills. Most employment in the sector is for technical and craft workers (51 per cent), followed by machine operators (14 per cent) and professionals (12 per cent). In the services sector, employment is also concentrated at the medium skill level (65 per cent), and only 7 per cent require low-level skills. Highly skilled workers in the services sector comprise the greatest share among all economic sectors (23 per cent). While, expectedly, 52 per cent of jobs in the services sector are in sales and services, around 20 per cent of jobs are at the professional level, significantly higher than in all other economic sectors.

These figures explain the low unemployment rates among males with intermediate and vocational education, mostly preferred by the manufacturing sector, and the high unemployment rates among males with low education levels, who face low demand and high levels of competition from foreign workers. This demand for intermediate skills and education means there are fewer employment opportunities for certain new entrants to the labour market, such as university graduates. The pattern of labour demand in Jordan reflects an economic structure with low levels of value added and little technological innovation. The kind of growth led by export industries that focus on enhanced productivity, added value and technical innovation is yet to be realized.

Table 6.3. Distribution of employment by economic activity, education and skill level, 2017–2020 (%)

	Occupation/ Skill level	2017	2018	2019	2020
Construction	ISCO-08: 1. Managers	0	0	0	0
	ISCO-08: 2. Professionals	3	3	4	4
	ISCO-08: 3. Technicians and associate professionals	2	2	2	2
	ISCO-08: 4. Clerical support workers	1	1	1	1
	ISCO-08: 5. Service and sales workers	0	0	0	2
	ISCO-08: 6. Skilled agricultural, forestry and fishery workers	0	0	0	0
	ISCO-08: 7. Craft and related trades workers	91	92	90	89
	ISCO-08: 8. Plant and machine operators, and assemblers	2	1	2	2
	ISCO-08: 9. Elementary occupations	2	1	1	1
	Total	**100**	**100**	**100**	**100**
	Skill level 1 – low	2	1	1	1
	Skill level 2 – medium	94	94	93	93
	Skill level 3 and 4 – high	5	5	6	5
	Total	**100**	**100**	**100**	**100**
Manufacturing	ISCO-08: 1. Managers	0	0	0	0
	ISCO-08: 2. Professionals	11	11	10	12
	ISCO-08: 3. Technicians and associate professionals	5	5	5	6
	ISCO-08: 4. Clerical support workers	5	4	3	3
	ISCO-08: 5. Service and sales workers	3	3	3	4
	ISCO-08: 6. Skilled agricultural, forestry and fishery workers	0	0	0	0
	ISCO-08: 7. Craft and related trades workers	50	52	52	51
	ISCO-08: 8. Plant and machine operators, and assemblers	18	18	16	14
	ISCO-08: 9. Elementary occupations	9	9	11	10
	Total	**100**	**100**	**100**	**100**

	Skill level 1 – low	9	9	11	10
	Skill level 2 – medium	76	76	74	72
	Skill level 3 and 4 – high	15	16	15	18
	Total	**100**	**100**	**100**	**100**
Agriculture	ISCO-08: 2. Professionals	1	1	2	1
	ISCO-08: 3. Technicians and associate professionals	0	0	0	0
	ISCO-08: 4. Clerical support workers	0	0	0	0
	ISCO-08: 5. Service and sales workers	2	2	4	11
	ISCO-08: 6. Skilled agricultural, forestry and fishery workers	92	88	81	82
	ISCO-08: 7. Craft and related trades workers	0	0	0	0
	ISCO-08: 8. Plant and machine operators, and assemblers	1	1	1	1
	ISCO-08: 9. Elementary occupations	4	8	12	5
	ISCO-08: Total	100	100	100	100
	Skill level 1 – low	4	8	12	5
	Skill level 2 – medium	95	91	86	94
	Skill level 3 and 4 – high	1	1	2	1
	Total	**100**	**100**	**100**	**100**
Industry	ISCO-08: 1. Managers	0	0	0	0
	ISCO-08: 2. Professionals	8	8	8	10
	ISCO-08: 3. Technicians and associate professionals	4	4	5	4
	ISCO-08: 4. Clerical support workers	4	3	3	3
	ISCO-08: 5. Service and sales workers	2	2	2	3
	ISCO-08: 6. Skilled agricultural, forestry and fishery workers	0	0	0	0
	ISCO-08: 7. Craft and related trades workers	64	66	66	64
	ISCO-08: 8. Plant and machine operators, and assemblers	12	11	10	9
	ISCO-08: 9. Elementary occupations	7	6	7	7
	Total	**100**	**100**	**100**	**100**
	Skill level 1 – low	7	6	7	7
	Skill level 2 – medium	81	81	80	79
	Skill level 3 and 4 – high	12	12	13	14
	Total	**100**	**100**	**100**	**100**
Services	ISCO-08: 1. Managers	0	0	0	0
	ISCO-08: 2. Professionals	23	23	20	19
	ISCO-08: 3. Technicians and associate professionals	6	5	4	4
	ISCO-08: 4. Clerical support workers	5	4	3	3
	ISCO-08: 5. Service and sales workers	40	46	53	52
	ISCO-08: 6. Skilled agricultural, forestry and fishery workers	0	0	0	0
	ISCO-08: 7. Craft and related trades workers	5	4	4	4
	ISCO-08: 8. Plant and machine operators, and assemblers	8	7	6	5
	ISCO-08: 9. Elementary occupations	13	11	10	12
	Total	**100**	**100**	**100**	**100**
	ISCO-08: X. Not elsewhere classified (n.e.c.)	0	0	0	0
	Skill level n.e.c.	0	0	0	0
	Skill level 1 – low	13	11	10	12
	Skill level 2 – medium	58	61	66	65
	Skill level 3 and 4 – high	29	28	24	23
	Total	**100**	**100**	**100**	**100**

Source: ILO estimates, ILOSTAT.

6.4. Labour productivity

Figure 6.5. Productivity: Real GDP per worker by year (US$ '000)

Source: ILO estimates, ILOSTAT.

Figure 6.5 shows that productivity increased in the early years of the high-growth period (1998–2008), peaking in 2008. Early stages of industrialization are typically associated with productivity gains because of the increase in investment and output of the manufacturing sector, compared with initially low levels. This outpaces the increase in employment and wages and, thus boosts firms' profitability. During this phase, firms often try to push production beyond normal production capacity. Productivity during the high-growth period was driven primarily by productivity gains in the manufacturing sector. For instance, value added per worker in the food and beverage manufacturing rose from 6,987 dinars in 1998 to 10,080 dinars in 2007. Value added per worker in apparel manufacturing rose from 2,119 dinars 1998 to 7,279 dinars in 2008. Similarly, productivity in the manufacturing of chemicals and non-metals (glass, cement and building materials) nearly tripled over the same period.

After 2008, productivity steadily declined. This may be explained by the failure to expand production capacity through innovation and technological advancement, thereby moving up the value chain, which would have led to a shift in the structure of employment from a low-skill/low-wage model to a high-skill/high-wage model. The current economic structure continues to generate employment for low-skilled workers on low wages and fails to attract and capitalize on the country's educated youth.

Productivity only stabilized after 2012 because of modest productivity gains in the services sector (see table A.5 in the appendix). A short-lived recovery in 2017 and 2018 was followed by a significant decline due to COVID-19, with a lag effect. It is still too early to assess the impact of economic recovery on productivity in the post-COVID era.

6.5. Youth in the labour market

Table 6.4. Distribution of youth (ages 15–24) in the labour force by sex and education level, 2017–2020 (%)

	Education level	2017	2018	2019	2020
Females 15–24 years	X. No schooling	5	4	6	1
	0. Early childhood education	11	10	12	16
	1. Primary	16	14	14	17
	3. Upper-secondary	6	5	6	4
	4. Post-secondary non-tertiary	10	9	7	9
	6. Bachelor's or equivalent	51	59	55	53
	7. Master's or equivalent	0	1	0	0
	Total	**100**	**100**	**100**	**100**
Males 15–24 years	X. No schooling	1	2	2	1
	0. Early childhood education	29	30	29	29
	1. Primary	47	47	47	49
	3. Upper-secondary	7	7	9	9
	4. Post-secondary non-tertiary	5	5	4	4
	6. Bachelor's or equivalent	11	10	9	8
	7. Master's or equivalent	0	0	0	0
	Total	**100**	**100**	**100**	**100**
Total 15–24 years	X. No schooling	2	2	2	1
	0. Early childhood education	25	26	26	27
	1. Primary	41	42	42	43
	3. Upper-secondary	7	7	9	8
	4. Post-secondary non-tertiary	6	5	4	5
	6. Bachelor's or equivalent	19	18	17	16
	7. Master's or equivalent	0	0	0	0
	Total	**100**	**100**	**100**	**100**

Source: ILO estimates, ILOSTAT.

Table 6.4 shows that a large proportion of youth in the labour force have only basic levels of education. Some 49 per cent of males have only primary education, compared with 17 per cent of females. Meanwhile, 9 per cent and 53 per cent of females have post-secondary and university education, compared with 4 per cent and 8 per cent of males, respectively. The high proportion of youth with intermediate levels of education can be attributed to the high percentage of the 15–19 years cohort, who are still in school. However, older cohorts (table 6.5) exhibit a near even distribution across education levels. Women, on average, have higher education levels than men across age groups 15-44 years.

Table 6.5. Distribution of the population by sex, age group and education level, 2019–2020 (quarterly %)

Sex	Age	Education	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q2	2020 Q3	2020 Q4
Female	25–34	Advanced	31	32	32	33	33	34	31
		Intermediate	18	18	18	17	17	19	17
		Basic	24	23	23	23	25	24	24
		Less than basic	26	27	26	28	26	24	28
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	35–44	Advanced	17	20	19	20	21	22	22
		Intermediate	23	21	22	23	21	21	22
		Basic	28	27	29	29	26	28	30
		Less than basic	32	32	30	28	32	30	26
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Male	25–34	Advanced	22	23	21	20	24	22	20
		Intermediate	29	27	31	31	30	26	27
		Basic	28	29	27	27	26	27	29
		Less than basic	21	21	22	22	20	25	24
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	35–44	Advanced	22	23	21	20	24	22	20
		Intermediate	29	27	31	31	30	26	27
		Basic	28	29	27	27	26	27	29
		Less than basic	21	21	22	22	20	25	24
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Total	25–34	Advanced	26	27	26	25	28	27	25
		Intermediate	24	23	26	25	24	23	23
		Basic	26	26	25	25	25	26	27
		Less than basic	23	24	24	25	23	24	26
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	35–44	Advanced	15	16	15	17	17	17	17
		Intermediate	26	23	25	26	25	23	25
		Basic	28	28	28	27	26	27	28
		Less than basic	32	33	32	29	32	33	30
		Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: ILO estimates, ILOSTAT.

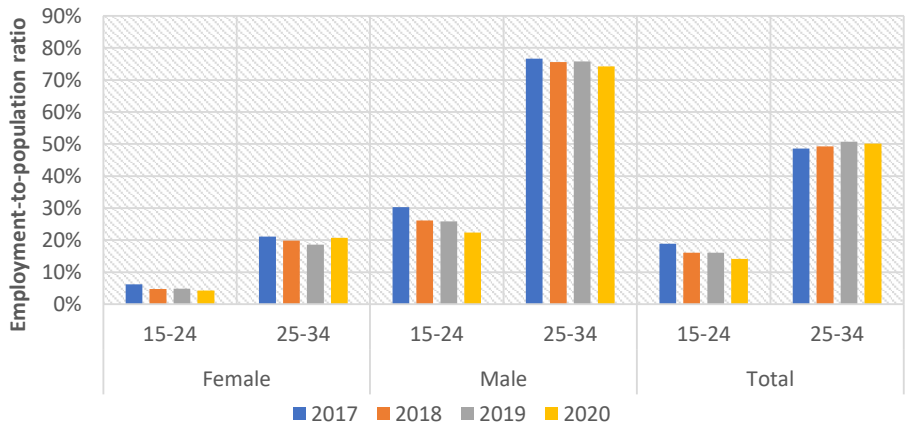
The employment-to-population ratio for youth averaged around 20 per cent from 2005 to 2015, down from around 23 per cent in 1995. The ratio declined rapidly between 2016 and 2021, reaching 15 per cent by 2021. Note that the employment-to-population ratio is significantly lower for females than males. In 2021, the male (15–24) employment-to-population ratio was 25 per cent, compared with only 4 per cent for females of the same age group. The impact of COVID-19 on the youth employment-to-population ratio was also profound, declining to 14 per cent in 2020 from 16 per cent in 2019.

Figure 6.6. Employment-to-population ratio by year, youth (ages 15–24)

Source: ILO estimates, ILOSTAT.

The employment-to-population ratio is higher for the age group 25–34, as university graduates have generally entered the job market by that age. However, the gender gap is substantially higher for this age group, compared with the 15–24 age group, confirming that young Jordanian women are at greater disadvantage than men with respect to employment (figure 6.7). It is also important to note that the employment-to-population ratio among youth is lower than the national average.

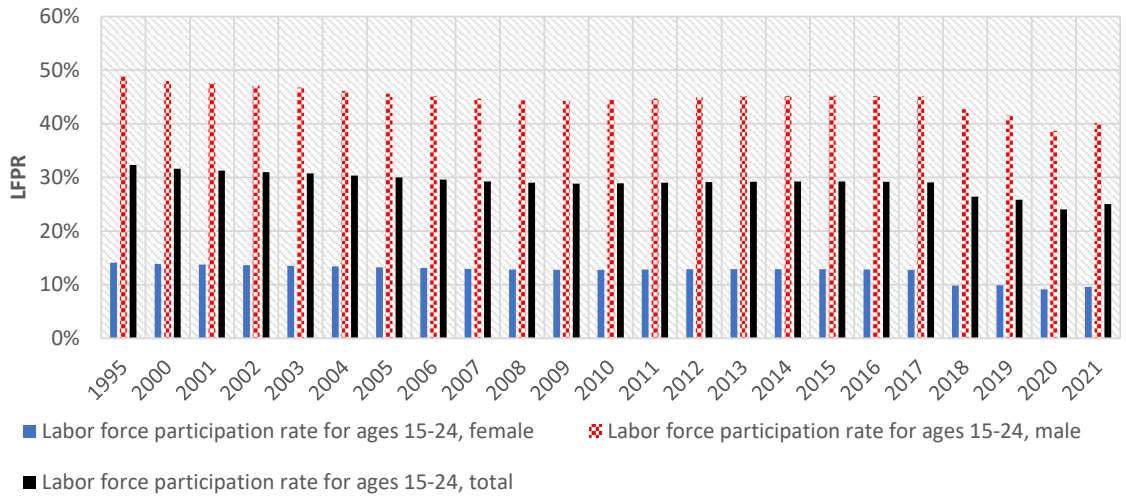
Figure 6.7. Employment-to-population ratio by sex and age group, 2017–2020



Source: ILO estimates, ILOSTAT.

Labour force participation rates are quite low among youth (15–24) and significantly below the overall average for the population, yet the same gender differences are visible in this cohort as in the population. The female youth labour force participation rate is significantly lower (10 per cent in 2021, down from 13 per cent 2017) compared with the male rate of 40 per cent in 2021 (down from 45 per cent in 2017). The average youth labour force participation rate declined from 26 per cent in 2019 to 24 per cent in 2020, but showed modest recovery in 2021, rising to 25 per cent.

Figure 6.8. Youth labour force participation rate (LFPR) by sex and year



Source: ILO estimates, ILOSTAT.

Expectedly, labour force participation rates are significantly higher for the age group 25–34 than the 15–24 age group, for nearly all education levels. This is due to the higher proportion of men and women who are still attending school in the 15–24 age group. Surprisingly, only the labour force participation rate for women aged 25–34 with advanced education (bachelor's degree or higher) is lower than that for their counterparts in the age group 15–24. This could be because they are discouraged by the lack of suitable employment opportunities, poor working conditions, family responsibilities and so on.

Table 6.6. LFPR by age group and sex, 2018–2020 (quarterly, %)

	Age	Education	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q2	2020 Q3	2020 Q4
Female	15–24	Advanced	66	61	69	60	64	62	60	64	60	69	67
		Intermediate	6	6	4	4	6	6	4	4	4	4	4
		Basic	4	3	4	3	5	3	3	4	4	3	4
		Less than basic	4	4	5	6	6	5	4	10	5	9	5
		Total	**10**	**9**	**10**	**9**	**11**	**9**	**8**	**10**	**9**	**10**	**9**
	25–34	Advanced	55	53	58	56	53	55	48	48	46	56	57
		Intermediate	22	23	24	22	24	17	19	18	18	20	21
		Basic	8	13	8	8	9	8	9	9	14	15	11
		Less than basic	18	13	16	14	16	16	15	21	26	25	20
		Total	**27**	**27**	**29**	**27**	**27**	**27**	**25**	**27**	**28**	**32**	**29**
Male	15–24	Advanced	81	83	80	73	80	83	76	86	81	79	78
		Intermediate	22	20	25	22	25	20	21	24	23	18	21
		Basic	48	44	41	42	44	38	40	44	38	40	39
		Less than basic	45	43	44	45	45	47	47	40	45	50	39
		Total	**43**	**41**	**41**	**40**	**42**	**39**	**39**	**39**	**38**	**38**	**37**
	25–34	Advanced	91	89	90	88	86	91	89	89	87	89	91
		Intermediate	88	87	84	89	91	91	90	90	91	91	92
		Basic	92	93	94	94	90	93	92	94	93	91	93
		Less than basic	84	86	87	87	84	82	84	90	88	86	90
		Total	**89**	**89**	**89**	**90**	**88**	**90**	**89**	**91**	**90**	**89**	**91**
Total	15–24	Advanced	72	70	74	65	70	70	67	73	68	72	71
		Intermediate	14	13	15	13	15	13	12	14	14	12	13
		Basic	29	26	26	26	26	23	25	27	23	25	25
		Less than basic	26	26	26	28	28	27	27	26	27	32	23
		Total	**27**	**26**	**27**	**26**	**27**	**25**	**25**	**26**	**25**	**26**	**24**
	25–34	Advanced	72	70	72	71	68	71	67	67	65	70	73
		Intermediate	57	59	60	64	68	65	69	69	68	64	68
		Basic	58	58	57	60	56	58	60	61	58	58	60
		Less than basic	51	50	50	52	49	47	52	56	56	59	56
		Total	**59**	**59**	**60**	**62**	**61**	**61**	**62**	**63**	**62**	**63**	**64**

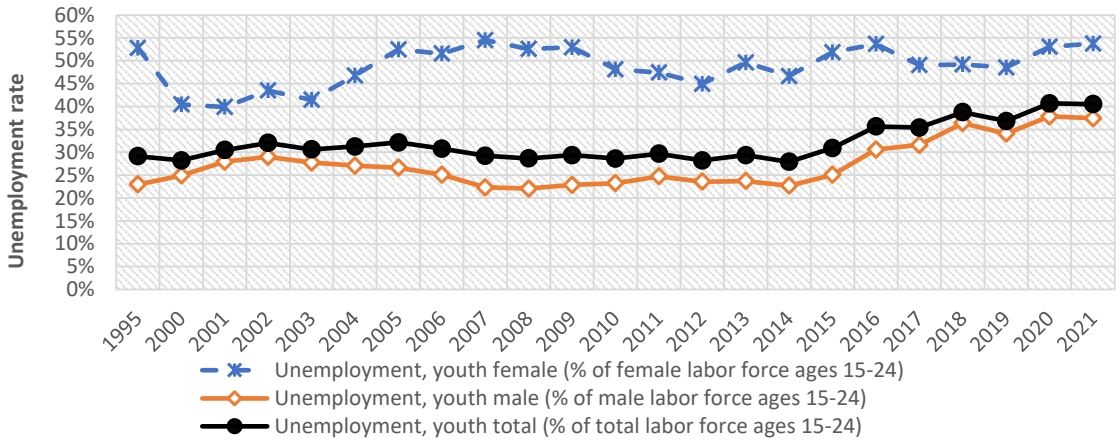
Source: ILO estimates, ILOSTAT.

Youth unemployment rates are quite high, particularly among women (figure 6.9). At the beginning of the high-growth period 1998–2008, unemployment declined compared with 1995 levels. However, by 2009 unemployment rates converged to levels closer to the 1990s levels. The trends also confirm that female unemployment is persistently higher than for males. Youth unemployment rates stabilized, albeit around elevated levels, between 2011 and 2014, then increased between 2015 and 2019. In 2021, youth unemployment rates were 54 per cent and 37 per cent, up from 49 per cent and 34 per cent in 2019, for females and males aged 15–24, respectively. For young males, these levels are significantly higher than the lowest point in the period (22 per cent) in 2008. Female youth experienced increasing levels of unemployment following the lowest level of 40 per cent in 2000–2001. While 20,558 jobs were created for Jordanians with at least an undergraduate degree between 2016 and 2018, the number of Jordanian university graduates in the same period totalled 43,924.[34]

[34] Jordan Strategy Forum, Fiscal Policy in Jordan: Towards a New Approach, 2021, http://jsf.org/sites/default/files/Fiscal%20Policy%20in%20Jordan%20Towards%20a%20New%20Approach_0.pdf.

These alarming trends persist despite the Government's efforts to reduce youth unemployment through job-creation programmes, entrepreneurship promotion and support, including microfinance, for SMEs. Recent efforts have included the National Employment Programme (NEP) and the "Jordan Support to Private-Sector Employment and Skills" project, the latter designed to stimulate private-sector employment, improve skills training and reduce youth and female unemployment.

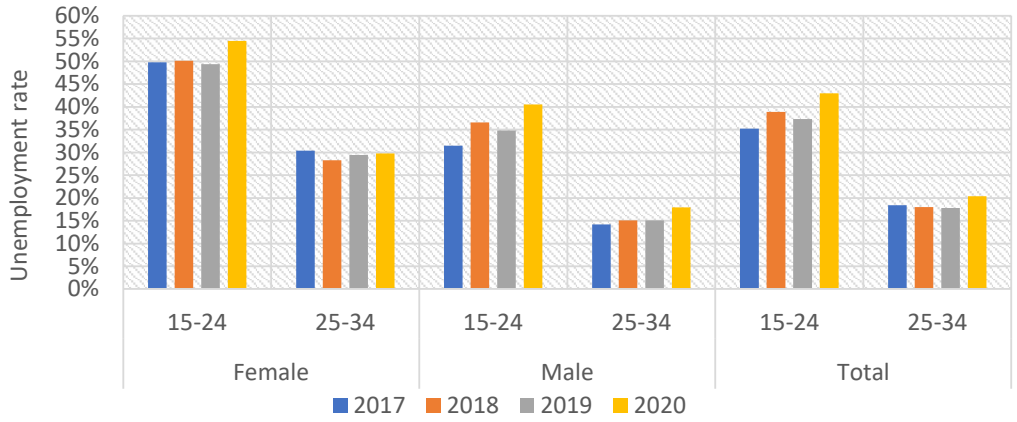
Figure 6.9. Youth unemployment rate by sex and year



Source: ILO estimates, ILOSTAT.

Figure 6.10 shows that unemployment rates drop significantly for both males and females aged 25–34 compared with their counterparts aged 15–24. This suggests that young new entrants to the job market face challenges finding employment. This is confirmed by the high proportion of youth not in employment, education or training (NEET). In 2020, a staggering 41.1 per cent of women and 30.6 per cent of men aged 15–24 were NEET (figure 6.11). While the female youth NEET rate decreased from 48.3 per cent in 2017 to 41.1 per cent in 2020, the male youth NEET rate increased from 28.8 per cent in 2017 to 30.6 per cent in 2020.

Figure 6.10. Unemployment rates by age group and sex, 2017–2020

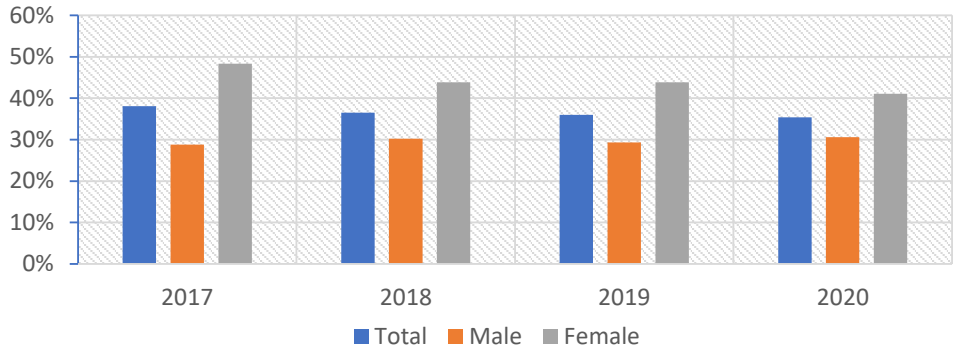


Source: ILO estimates, ILOSTAT.

The distribution of employment by economic sector and age for Jordanians helps explain the structure of the demand side of the labour market (appendix table A.4). Unfortunately, consistent data are only available for the period 2017–2021, and show that, while there are gender-biased trends that prevail for both age groups, there are some differences that suggest some age-related

preferences of either employers or jobseekers. In 2021, public administration and civil services and wholesale and retail sectors were the largest employers of male youth, providing 27 per cent and 21 per cent of total employment, respectively. The public sector's share of total employment for Jordanian males aged 15–24 dropped from 37 per cent in 2017 to 27 per cent in 2021, while the share of wholesale and retail trade increased from 19 per cent in 2017 to 21 per cent in 2021. The manufacturing sector absorbed 16 per cent of male Jordanian workers aged 15–24 in 2021, up from 13 per cent in 2017. Meanwhile, the share of the construction sector averaged around 6 per cent of total employment throughout the period 2017–2021.

Figure 6.11. Share of youth not in education, employment or training by sex, 2017–2020 (%)



Source: ILO estimates, ILOSTAT.

The public administration and civil services sector employs an even larger share of Jordanian males aged 25–29, averaging around 36 per cent from 2017 to 2021. While the wholesale and retail trade sector continues to be the second largest employer, its share of total employment of males 25–29 drops to around 15 per cent, compared with the 15–24 age group, followed by the manufacturing sector, whose share also drops to 11 per cent on average, compared with the 15–24 age group over the same period. These data are better understood in conjunction with earlier analyses showing the high demand for intermediate levels of education, particularly vocational and craft knowledge, indicating that young males with intermediate education (who usually enter the job market at a younger age than university graduates), have a better chance of finding employment in the aforementioned sectors.

For young Jordanian women aged 15–29, the distribution of employment is quite different and more evenly distributed across sectors. In 2021, 24 per cent of women aged 15–24, up from 17 per cent in 2017, were employed by the health and social work sector, and 20 per cent of the same age group were employed by the manufacturing sector, up from 12 per cent in 2017. The education sector employed 15 per cent of females aged 15–24, in 2021, down from 22 per cent in 2017. Note that despite the substantial proportion of women aged 15–24 employed by the manufacturing sector, the sector is dominated by males. The wholesale and retail trade and the public administration and civil services sectors employ only 10 per cent and 4 per cent of females aged 15–24, respectively. The distribution of employment shifts for women aged 25–29. The education sector emerges as the largest employer of women aged 25–29, employing 20 per cent in 2021, down from 31 per cent in 2017, followed by the health and social work sector, employing around 20 per cent of women aged 25–29. The share of manufacturing sector in total employment dropped to 12 per cent in 2021, up from 7 per cent in 2017.

Overall, the services sector comprises the largest source of employment. Based on sectoral structure, demand is highest for intermediate education, which results in high unemployment among university graduates, as well as young men and women with only basic education. However, for youth with basic education, training and vocational education (TVET) allows them to upgrade their skills to intermediate level, potentially resulting in more job opportunities. A UNICEF study confirms the aforementioned trends and points out that Jordanian youth tend to

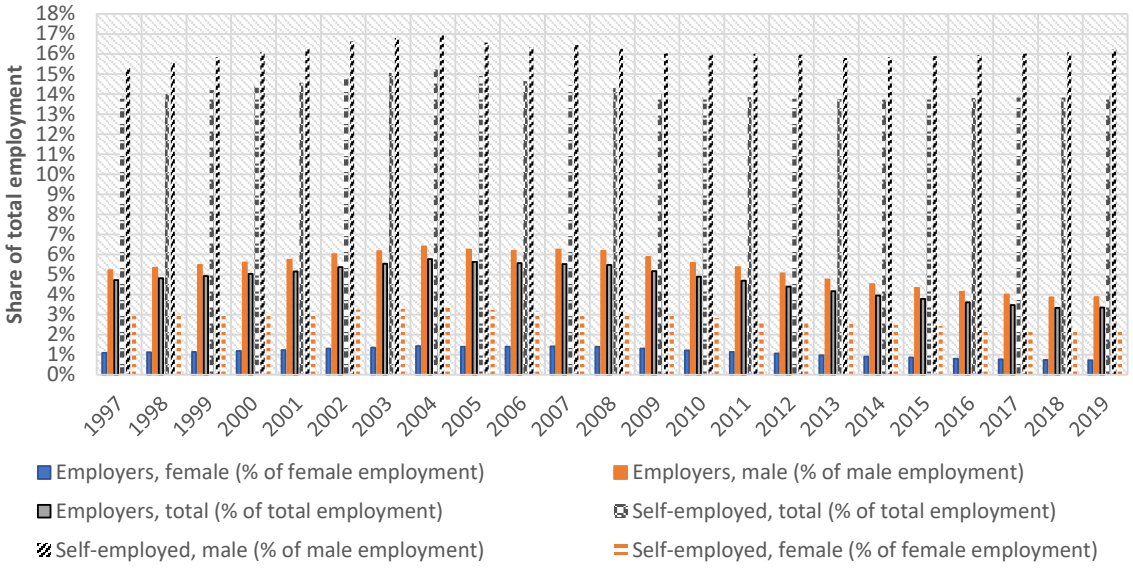
prefer government and public-sector jobs over the private sector because working conditions are better and employment is perceived to be more secure.[35]

The distribution of youth employment across sectors did not seem to change as a result of COVID-19. While public-sector employment was not severely impacted by COVID-19, the informal sector, which employs many young Jordanians and new entrants to the job market, was adversely impacted. The Government launched a number of programmes to support both formal and informal workers who were temporarily or permanently laid off during the pandemic. These included:

- the Daily Wage Workers' Programme of the National Aid Fund for workers without social insurance;
- the Tadamon 1 Programme for temporarily laid-off workers with at least 12 months of social security contributions;
- the Tadamon 2 Programme for workers with less than 12 months of contributions, including informal workers;
- the Musanad 1, 2 and 3 programmes for temporarily or permanently laid-off workers and self-employed workers experiencing reduced income, and registered with the Social Security Corporation.

6.6. Entrepreneurship

Figure 6.12. Share of employers and self-employed in total employment by sex and year



Source: ILO estimates, ILOSTAT.

The Government of Jordan has encouraged entrepreneurship through several centres that promote and support entrepreneurial activities, such as the Queen Rania Center for Entrepreneurship (QRCE) (2004), the Young Entrepreneurs Association (YEA) (1998), and the Business Development Center (BDC) (2004). Meanwhile, the Jordan Enterprise Development Corporation runs programmes to support entrepreneurs. Between 2019 and 2020 it launched 17 different programmes targeting

[35] Assaad, Ragui, and Layla Al-Hajj, "Barriers for Economic Participation for Young People in Jordan: A Gendered Analysis" (UNICEF, Nov. 2021), https://www.unicef.org/jordan/media/9156/file/Policy%20Brief-%20Barriers%20to%20Economic%20Participation%20for%20young%20People%20in%20Jordan-English.pdf.

SMEs, which usually lack sufficient creditworthiness to obtain a regular bank loan. Many start-ups and SMEs have thus benefited from low-cost soft loans and microfinance offered through CBJ programmes (discussed in section 3.2). However, start-ups, as a share of total credit to SMEs, ranged between 9.5 per cent to 10.8 per cent in 2020.

Over the past decade, the entrepreneurship ecosystem in Jordan has developed rapidly, outperforming the region in terms of product innovation, technology absorption, competition, start-up skills and cultural support indicators. Nonetheless, key challenges continue to hinder its growth in such areas as networking, risk capital and risk acceptance, as well as human capital indicators. According to the Global Entrepreneurship Monitor (GEM), the total early-stage entrepreneurial activity rate accounted for 9.1 per cent of Jordanian adults in 2019, a slight rise from 8.2 per cent in 2016. However, the business discontinuation rate accounted for 21.2 per cent of businesses in 2016 and 10.5 per cent in 2019. Despite the relative success of some Jordanian start-ups (e.g. Souq.com and Arabia Weather) the share of employers and self-employed of total employment remains low, and was mostly stagnant from 1998 to 2019. Males are more engaged in entrepreneurial activities than females.

Young entrepreneurs continue to face numerous challenges, including cumbersome and costly business procedures, lack of finance,[36] taxation, and laws governing investments in start-ups. Weaknesses in the Jordanian ecosystem and the expanding innovative ecosystem in the region have pushed innovative entrepreneurs outside Jordan, notably to the Gulf countries. The results of the GEM indicate that the innovation index dropped from 25 in 2016 to 15.8 in 2019.

The General Entrepreneurship Policy (2021–2025) aims to develop a business-friendly ecosystem and reduce the challenges facing Jordanian entrepreneurs. The policy is based on six pillars: (1) amend legislation and regulations; (2) develop skills; (3) open access to markets; (4) improve access to finance; (5) provide support through accelerators, incubators and a national entrepreneurship portal; (6) improve general perceptions of entrepreneurship by communicating with youth.

The Ministry of Digital Economy and Entrepreneurship (Ministry of Telecommunications before 2019) implements specific programmes in the information technology sector. The youth, technology and jobs project, funded by the World Bank, provides marketing plans for start-ups and funds operational costs up to 300,000 dinars for enterprises with expansion plans outside Amman. Moreover, the IT sector benefits from a sales tax exemption and discounted income tax. At the infrastructure level, the Ministry was managing 40 business incubators. However, management was transferred to several large private enterprises, which provide free services to start-up through counselling and training. This has led to inefficiencies in supporting start-up entrepreneurs, since services are based on what the large enterprises decide to provide, not on entrepreneurs' needs.

Networking is a key factor in the success of start-ups. The Queen Rania Center for Entrepreneurship facilitates networking with other established entrepreneurs and helps entrepreneurs with their marketing plans. While there are multiple programmes and initiatives that offer support to entrepreneurs in the start-up phase, there is a lack of policies and programmes that target the growth of businesses. This helps explain the high discontinuation rate and drop in the innovation index.

6.7. Employment and labour market policies and programmes

The National Employment Strategy was developed in 2010 with targets and milestones in 2014, 2017 and 2020, but was not effectively implemented and is currently outdated. Other programmes implemented over the past years include the following:

[36] Jordan Enterprise Development Cooperation, "Global Entrepreneurship Monitor", Jordan National Report 2019/2020, October 2020.

• **The Employment Promotion Programme (expansion of the Training and Employment Programme)**. This 5-year programme was launched in 2009 in collaboration with the German Federal Ministry for Economic Cooperation and Development (BMZ) and aims to build capacity and enhance active labour market policies through expanding training and employment. The programme established an E-TVET fund and Social Security Institute, and offered on-the-job training to jobseekers to provide them with workplace-relevant competencies in order to increase their employment potential. Moreover, through technical and financial support, it provides subsidies to employers to provide employment for trainees in selected sectors: healthcare (e.g. nurses, pharmaceutical technicians, medical laboratory technicians), ICT, petroleum and fuels, hospitality and restaurants, and beauty. In 2019, an evaluation by the German development agency, GIZ, and the Ministry for Labour (MOL) concluded that the programme had a modest impact on employment in the targeted sectors.[37]

• **Trade for Employment**. This GIZ-funded project (2017–2021) focused on building capacity and strengthening private sector structures in a sustainable manner so that Jordanian companies may increase their trade performance, increasing employment. The project aimed to improve recruitment and employment in trade-oriented businesses, with a particular focus on employing Syrian refugees and Jordanian jobseekers.

• **Jordan Support to Private-Sector Employment and Skills Project**. Launched in 2021, in collaboration with the World Bank through a $112 million loan, it aims to increase private-sector post-COVID employment, particularly youth and women through subsidized wages and training.

• **Hafez**. This employment programme was launched by the Ministry of Digital Economy and Entrepreneurship, providing temporary employment opportunities for university graduates in the ICT sector for 6 months. Social security contributions are covered and beneficiaries receive 50 per cent of their salaries from the programme and 50 per cent from the employer. As of January 2022, around 4,780 young graduates have entered the programme.

• **The NEP**. This umbrella programme targets Jordanian men and women between ages 18 and 40, and aims to enhance private-sector employment through a package of incentives, including wage subsidies and on-the-job training. There is an electronic employment platform and the programme raises awareness and runs advocacy campaigns. Subsidies are available for up to 6 months and include wages up to 130 dinars, transportation allowance of 10 dinars, and a social security contribution of 10 dinars. Employers and employees are obliged to sign a 12-month contract, conditional on contributing to social security and not having contributed to social security in the 6 months prior to joining the programme, significantly reducing fraud. The programme matches jobseekers with companies in the private sector, with a target to employ 60,000 jobseekers in 2022–2023. Some 35 per cent of beneficiaries are female, 7 per cent are beneficiaries of poverty transfers, and 3 per cent are in green jobs. Since the launch of the programme in July 2022, around 11,400 jobs were matched to jobseekers through the programme, mostly in industry, education and tourism. The NEP is different than the other programmes in that it matches the needs of companies with the skills of registered jobseekers.

Other programmes were also launched by the General Federation of Jordanian Trade Unions, the Ministry of Labour, and other stakeholders and international organizations, to further support the employment of Jordanian youth in the country. It is noteworthy, however, that these programmes have largely consisted of fragmented small-scale projects.

[37] MOL and GIZ, Impact Evaluation of the Expansion of Training and Employment, Feb. 2019.

7. Conclusion and policy recommendations

7.1. Conclusion

In the 1990s, Jordan crafted a proactive policy package that featured trade liberalization, macroeconomic stabilization and the privatization of state-owned enterprises, and the country adopted an export-led growth model of industrialization. In the aftermath of the global financial crisis and the Arab uprisings, however, macroeconomic policies were mostly reactionary. Repeated socio-economic shocks and regional instability threw the Jordanian economy off its high-growth track, prompting a containment response to key macroeconomic variables, such as inflation, defence of the exchange rate, declining foreign reserves, a high debt-to-GDP ratio and growing fiscal deficits.

Economic growth in Jordan has proved to be highly susceptible to external shocks. The structure of the economy and the composition of growth are inherently vulnerable because of high levels of government debt, excessive reliance on FDI, foreign aid and workers' remittances, together with a reliance on expensive fossil fuel imports and a high concentration of export markets.

Overall, policymakers in Jordan have often focused excessively on controlling macroeconomic variables and navigating through the impacts of external shocks rather than enhancing economic growth and boosting employment generation. A high debt-to-GDP ratio and the need to reduce fiscal deficit continued to overshadow other priorities, particularly the need to take the export-led growth model to the next level and reduce youth unemployment. That said, effective macroeconomic, investment and trade policies are critical for addressing the problem of youth unemployment in Jordan. Such policies should aim to create high-value-added jobs that are attractive to the increasingly educated young population.

7.2. Policy recommendations

The National Employment Strategy (2011–2020) was neither successfully implemented nor effectively operationalized. Today, Jordan still lacks a comprehensive policy framework for employment and, except for the NEP, labour market policies and programmes are mostly small-scale, siloed initiatives with limited and untested impacts. To address this, the MOL, in close collaboration with other ministries, social partners and other relevant stakeholders, should develop a new national employment strategy, along with an effective implementation plan, to tackle current and future challenges. This policy would act as an umbrella for all employment-related policies and programmes.

Further, and with the understanding that fiscal discipline is a necessary but insufficient condition to achieve high growth, reduce growth vulnerability and generate employment, there is a need to restructure foreign debt through renegotiating better terms for current debt. This may include transferring part of the foreign debt to development assistance. Meanwhile, it is critical to rethink fiscal policies and devise selective fiscal stimulus packages that will target employment generation, including for the youth in particular, with no or little impact on fiscal balances. Shifting public spending away from current spending towards creating employment is key, along with the consideration of tax and financial incentives for young entrepreneurs and businesses operating in promising sectors for high growth. In addition, spending should be sufficiently channelled towards the implementation of effective and well-targeted active labour market policies operating within the framework of a broader and more comprehensive national employment policy.

While it may seem against conventional wisdom, from a monetary policy perspective, the CBJ should consider easing contractionary monetary policy in order to achieve a positive impact on growth and employment generation, but which outweighs the negative impact on inflation. An increased focus on pro-employment monetary policy is key. This should include, inter alia, ensuring an adequate supply of credit for young entrepreneurs and SMEs and ensuring the

financial inclusion of disadvantaged groups. The CBJ should also ensure the allocation of credit to priority sectors with high potential for decent and productive job creation, especially for youth. A clear identification of priority sectors, such as ICT, the care economy and green sectors is critical.

In terms of exports and trade, policies and measures to realize the potential of the manufacturing sector as the main engine for growth and employment are key. These would need to address certain flaws in the sector. First, the manufacturing sector is characterized by high energy requirements and relies on imported fossil fuels. This contributes to its vulnerability, adding another volatile and geopolitically sensitive variable to FDI, workers' remittances and foreign aid. A programme to develop renewable energy and reduce reliance on fossil fuels is, therefore, key for reducing the sector's vulnerability.

Second, there is high reliance on FDIs because of low domestic savings and an absence of policies to direct FDI to generate employment in the manufacturing sector. As such, and in line with successful experiences in newly industrialized developing countries, Jordan's export-oriented manufacturing model, which relies on FDI needs to be coupled with carefully crafted policies to direct FDI to ventures that offer high-value-added forward and backward linkages. Additionally, policies need to target investments that are coupled with technology transfers and industrial expertise, which would ultimately make moving to higher stages of industrialization possible. Overall, increased diversity in the manufacturing sector is key and would translate into higher diversity in terms of demand for labour, thus generating new productive employment opportunities for educated youth.

Third, the massive influx of FDIs during the high-growth period produced only a modest contribution to employment generation as money was channelled to purchase public-sector firms that were privatized, and to capital-intensive industries (e.g. chemicals) and sectors that create little or no employment (e.g. the energy sector, real estate and other non-tradables). The result was jobless growth. There is a need to devise an industrial policy and incentive structure to direct foreign investments to employment-generating projects in the manufacturing sector.

Fourth, the manufacturing sector relied on imported intermediate inputs and failed to enhance domestic value added, boost productivity and create domestic supply chains to overcome the persistently high deficits in the balance of trade. Balance of payment constraints are the worst enemy of growth and employment generation in developing countries. Overcoming such constraints is a necessary condition not only for boosting growth, but also for sustainability. This can be done through localizing segments of the supply chains and creating incentives for firms to reduce reliance on imported inputs. The manufacturing sector will need to target a higher level of exports relative to imported inputs.

Fifth, the low-tech manufacturing sector, particularly in the QIZs and SEZs, failed to capitalize on the country's highly skilled and well-educated human capital. Instead, it generated demand for low-wage workers with low to intermediate levels of skill – mostly comprised of foreign workers. Meanwhile, the country suffered a "brain drain" as skilled Jordanian jobseekers migrated. The jobs in Jordan that were created were not well suited to Jordanian youth, who are mostly educated to a high level. Hence, unemployment among Jordanians remained high, particularly youth, despite the thousands of jobs created by the manufacturing sector during the high-growth period. As such, there is a need to move up the value chain and promote innovations and investments in research and development to capitalize on the young, educated labour force. Manufacturing firms should be incentivized to team up with research institutes in Jordan and overseas to boost innovation and technology transfers.

▶ Appendix

Table A.1. Export performance of product groups (harmonized system 2-digit level) by year

Code	Commodity description (total export value in dinars)	1999	2009	2019	2020	2021	Growth rates (%)				
							2009 – 1999	2019 – 2009	2020 – 2019	2021 – 2020	2021 – 2019
1	Live animals	25 486 971	22 175 093	113 530 016	108 587 621	91 600 718	-13	412	-4	-16	-19
2	Meat and edible meat offal	2 072 733	50 367 129	26 132 623	22 725 243	16 983 408	2330	-48	-13	-25	-35
3	Fish and crustaceans, molluscs and other aquatic invertebrates	763 675	4 480 838	1 670 746	1 650 490	379 441	487	-63	-1	-77	-77
4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	9 264 525	61 509 181	42 758 910	53 643 490	59 683 314	564	-30	25	11	40
5	Products of animal origin, not elsewhere specified or included	1 008 166	80 000	116 119	66 024	190 572	-92	45	-43	189	64
6	Live trees and other plants; bulbs roots and the like; cut flowers and ornamental foliage	422 642	1 030 550	2 312 915	1 424 978	1 947 938	144	124	-38	37	-16
7	Edible vegetables and certain roots and tubers	64 032 098	267 450 307	162 176 944	145 549 613	140 634 370	318	-39	-10	-3	-13
8	Edible fruit and nuts; peel of citrus fruit or melons	12 276 575	51 688 710	93 490 213	101 447 096	185 943 657	321	81	9	83	99
9	Coffee, tea, mate and spices	2 405 923	7 291 712	35 168 179	35 755 353	47 879 964	203	382	2	34	36
10	Cereals	3 101 279	6 833 511	2 964 266	4 433 916	25 651 365	120	-57	50	479	765
11	Products of the milling industry; malt; starches; inulin, wheat gluten	181 291	2 255 516	13 364 791	11 947 773	21 375 926	1144	493	-11	79	60
12	Oil seeds and oleaginous fruits miscellaneous grains, seeds, and fruit; industrial or medical plants; straw and fodder	3 393 106	3 086 614	12 224 249	15 254 327	16 067 750	-9	296	25	5	31
13	Lac; gums; resins and other vegetable saps and extracts	256 322	40 159	35 997	1 465 707	5 093	-84	-10	3972	-100	-86
14	Vegetable plaiting materials: vegetable products not elsewhere specified or included	70 042	37 621	53 339	15 651	20 000	-46	42	-71	28	-63
15	Animal or vegetable fats and oil and their cleavage products; prepared edible fats; animal or vegetable waxes	49 341 898	33 613 146	6 398 951	6 959 647	4 785 161	-32	-81	9	-31	-25
16	Preparations of meat, of fish, or of crustaceans, molluscs or other aquatic invertebrates	1 470 975	25 363 042	35 639 416	46 566 193	45 245 652	1624	41	31	-3	27
17	Sugars and sugar confectionery	3 510 803	8 607 773	15 849 994	20 587 092	29 946 332	145	84	30	45	89
18	Cocoa and cocoa preparations	788 724	5 135 373	6 496 294	7 195 981	10 311 892	551	27	11	43	59
19	Preparations of cereals, flour starch; or milk, pastry products	2 471 649	31 595 683	30 984 407	30 719 514	42 210 428	1178	-2	-1	37	36

20	Preparations of vegetables, fruit, nuts or other parts of plants	4 299 228	24 542 681	44 247 454	48 826 499	56 469 295	471	80	10	16	28
42	Articles of leather; saddlery and harnesses; travel goods, handbags, and similar containers; articles of animal gut (other than silk-worm gut)?	4 172 918	2 312 106	263 412	1 308 315	1 164 441	-45	-89	397	-11	342
43	Fur skins and artificial fur; manufactures thereof	166 526	772 474	6 861 513	58 849	100 611	364	788	-99	71	-99
44	Wood and articles of wood; wood charcoal	1 447 990	18 075 158	230 148	8 809 058	7 668 394	1148	-99	3728	-13	3232
47	Pulp of wood or of other fibrous cellulosic material; waste and scrap of paper or paperboard	504 585	4 935 754	5 226 942	5 270 089	13 936 674	878	6	1	164	167
48	Paper and paperboard; articles of paper pulp, of paper or of paper board	35 225 527	124 601 869	90 732 815	75 700 846	79 573 489	254	-27	-17	5	-12
49	Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans	9 075 274	20 296 842	4 557 517	7 327 339	3 088 497	124	-78	61	-58	-32
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric	640 043	746 681	210 304	138 518	502 471	17	-72	-34	263	139
52	Cotton	1 407 396	464 023	127 186	508 275	312 560	-67	-73	300	-39	146
53	Other vegetable textile fibres, paper yarn and woven fabrics of paper yarn	47 000	23 986	251 471	385 658	147 432	-49	948	53	-62	-41
54	Manufactured filaments	5 944 849	4 281 313	4 270 847	6 681 723	9 189 219	-28	0	56	38	115
55	Man-made staple fibres	2 117 833	2 671 640	1 109 662	3 102 189	2 924 609	26	-58	180	-6	164
56	Wadding, felt and non-woven materials, special yarns; twine, cordage, ropes, cables and articles thereof	7 299 076	10 235 291	628 967	1 344 952	8 354 589	40	-94	114	521	1228
57	Carpets and other textile floor coverings	4 623 688	7 629 015	20 073 580	18 103 942	31 120 575	65	163	-10	72	55
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	634 807	1 499 143	721 872	449 586	574 747	136	-52	-38	28	-20
59	Impregnated, coated, covered or laminated textile fabrics, textile articles of a kind suitable for industrial use	149 366	1 076 048	2 374 154	1 174 427	737 469	620	121	-51	-37	-69
60	Knitted or crocheted fabrics	1 207 815	9 043 305	7 386 085	9 934 140	9 189 152	649	-18	34	-7	24
61	Articles of apparel and clothing accessories, knitted or crocheted	8 571 138	515 665 930	1 316 348 390	1 117 580 897	1 232 828 896	5916	155	-15	10	-6
62	Articles of apparel and clothing accessories, not knitted or crocheted	31 287 041	88 103 845	79 668 930	45 716 034	48 459 905	182	-10	-43	6	-39
63	Other made-up textile articles, sets, worn clothing and worn textile articles; rags	9 221 706	4 463 139	15 102 074	24 169 457	7 710 611	-52	238	60	-68	-49
64	Footwear, gaiters and the like; parts of such articles	4 084 463	2 210 988	3 563 002	1 310 072	2 088 220	-46	61	-63	59	-41

65	Headgear and parts thereof	464 293	545 790	12 333	90 102	78 268	18	-98	631	-13	535
66	Umbrellas; sun umbrellas, walking sticks, seat sticks, whips, riding crops and parts thereof	10 000	18 356	23 151	217 958	58 843	84	26	841	-73	154
	Yarns, textile, garments and apparels	77 710 514	648 678 493	1 451 872 008	1 230 907 930	1 354 277 566	735	124	-15	10	-100
67	Prepared feathers, down and articles made of feathers or of down; artificial flowers; articles of human hair	127 183	22 538	48 243	24 220	46 947	-82	114	-50	94	-3
68	Articles of stone, plaster, cement, asbestos, mica or similar materials	11 703 570	21 716 420	34 316 635	22 796 047	14 297 497	86	58	-34	-37	-58
69	Ceramic products	2 622 274	3 839 377	2 591 915	1 581 408	1 634 229	46	-32	-39	3	-37
70	Glass and glassware	3 178 282	5 324 569	3 944 022	2 251 126	2 948 756	68	-26	-43	31	-25
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin	5 427 763	255 255 271	180 203 255	354 354 148	185 584 781	4603	-29	97	-48	3
72	Iron and steel	5 510 069	41 606 295	36 351 648	19 890 042	126 526 383	655	-13	-45	536	248
73	Articles of iron or steel	10 616 309	85 178 762	79 222 984	66 575 070	71 618 109	702	-7	-16	8	-10
74	Copper and articles thereof	3 073 786	23 064 503	54 905 611	42 413 756	55 422 140	650	138	-23	31	1
75	Nickel and articles thereof	13 826	6 300	25 045	72 095	90 992	-54	298	188	26	263
76	Aluminium and articles thereof	17 626 947	133 590 067	69 581 855	77 052 700	137 304 650	658	-48	11	78	97
78	Lead and articles thereof	678 875	1 371 112	7 361 308	6 574 196	10 136 142	102	437	-11	54	38
79	Zinc and articles thereof	361 247	754 402	539 929	489 481	521 681	109	-28	-9	7	-3
80	Tin and articles thereof	15 027	96 087	434 035	636 588	1 097 110	539	352	47	72	153
81	Other base metals; cermets; articles thereof		28 793	70 976	24 471	123 548		147	-66	405	74
82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal	2 822 058	3 799 844	1 926 288	1 526 654	1 821 032	35	-49	-21	19	-5
83	Miscellaneous articles of base metal	2 667 786	11 636 011	3 124 835	1 688 719	2 085 313	336	-73	-46	23	-33
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	74 799 311	214 775 946	219 258 837	140 473 809	134 442 055	187	2	-36	-4	-39
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers and parts and accessories of such articles	44 295 573	233 453 412	185 549 620	126 365 074	181 819 675	427	-21	-32	44	-2

86	Railway or tramway locomotives, rolling stock and parts thereof; railway or tramway track fixtures and fittings; and parts thereof; mechanical (including electro-mechanical), traffic signalling equipment of all kinds	289 153	1 741 409	64 515	21 899	253 433	502	-96	-66	1057	293
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	47 854 243	149 537 865	61 298 194	66 029 545	68 206 113	212	-59	8	3	11
88	Aircraft, spacecraft and parts thereof	26 662 511	30 947 901	174 173 775	49 520 604	52 492 149	16	463	-72	6	-70
90	Optical, photographic, cinematographic, measuring, checking precision, medical or surgical instruments and apparatus; parts and accessories thereof	16 503 089	34 693 054	42 057 097	27 244 692	33 981 785	110	21	-35	25	-19
91	Clocks and watches and parts thereof	520 050	2 003 841	3 159 486	1 394 309	3 789 455	285	58	-56	172	20
92	Musical instruments; parts and accessories of such articles	129 163	21 491	6 255	257 372	7 820	-83	-71	4015	-97	25
94	Furniture, bedding, mattresses, mattress supports, cushions and similar stuffed furnishing, lamps and lighting fittings, not elsewhere specified or included illuminated signs, illuminated nameplates and the like; prefabricated buildings	9 983 804	42 542 004	29 066 152	34 244 502	27 519 533	326	-32	18	-20	-5
95	Toys, games and sports requisites, parts and accessories thereof	785 623	2 623 331	820 512	519 267	325 127	234	-69	-37	-37	-60
96	Miscellaneous manufactured articles	1 474 277	6 786 138	36 372 806	34 665 376	34 864 091	360	436	-5	1	-4
97	Works of art, collectors, pieces and antiques	447 877	252 601	676 738	113 939	58 906	-44	168	-83	-48	-91
99	Unspecified	1 198 879	3 912 292	13 868 057	30 329 094	11 130 519	226	254	119	-63	-20

Source: DOS.

Table A.2. Distribution of merchandise exports by country of destination and year (% total merchandise exports)

	Arab countries	EU	Russia	USA	South America	India	Indonesia	Iran	Malaysia	Pakistan	South Korea	The Philippines	Japan	Taiwan	China	Israel
1998	36	5	0	0	0	9	1	2	1	0	1	1	1	1	1	2
1999	33	5	0	1	0	14	1	0	2	1	1	0	1	1	2	3
2000	32	3	0	3	0	13	1	0	1	2	0	0	1	0	2	4
2001	42	3	0	10	0	9	1	0	1	1	0	1	1	0	2	4
2002	38	3	0	15	0	8	1	0	1	1	0	0	0	0	2	4
2003	32	3	0	21	0	6	1	1	1	1	0	0	0	0	1	3
2004	34	3	0	26	0	6	1	1	1	1	0	0	0	0	1	3
2005	36	3	0	26	0	8	0	1	1	0	0	0	1	0	1	2
2006	34	3	0	25	0	8	0	1	1	0	0	0	1	0	1	2
2007	34	3	0	22	0	8	1	0	1	1	0	0	1	0	1	2
2008	33	3	0	13	0	16	2	0	1	0	0	0	2	0	1	2
2009	41	2	0	14	0	11	2	0	0	0	0	0	2	0	1	2
2010	43	3	0	13	0	11	2	0	1	0	0	0	1	0	2	1
2011	40	4	0	13	0	11	3	0	1	0	0	1	1	0	2	1
2012	41	4	0	14	0	9	3	0	1	0	0	0	1	1	2	1
2013	46	3	0	15	0	6	3	0	1	0	0	0	1	0	1	1
2014	45	4	0	16	0	8	1	0	1	0	0	0	0	0	2	1
2015	44	2	0	18	0	8	2	0	1	0	0	0	0	0	3	1
2016	40	2	0	19	0	6	2	0	1	0	0	0	0	0	2	1
2017	39	2	0	21	0	7	2	0	1	0	0	0	0	0	2	1
2018	37	3	0	22	0	9	2	0	1	0	0	0	0	0	1	1
2019	35	2	0	23	0	8	2	0	0	0	0	0	0	0	2	1
2020	36	3	0	22	1	11	2	0	1	0	0	0	0	0	2	1
2021	34	3	0	24	1	14	2	0	1	0	1	0	0	0	1	1

Source: CBJ.

Table A.3. Ratio of gross domestic value added to gross output for selected industrial groups by year (%)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
06. Extraction of crude petroleum and natural gas	95	95	91	96	97	63	91	92	85
10. Manufacture of food products	26	29	30	33	33	33	33	34	27
11. Manufacture of beverages	48	51	51	51	55	61	59	44	40
12. Manufacture of tobacco products	70	69	71	71	75	83	83	84	72
13. Manufacture of textiles	37	38	47	51	51	39	42	38	49
14. Manufacture of wearing apparel	53	50	50	43	43	45	45	43	40
15. Manufacture of leather and related products	32	34	32	27	26	33	34	27	31
16. Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	29	32	34	38	40	33	38	40	42
20. Manufacture of chemicals and chemical products	38	38	38	38	34	39	42	40	28
21. Manufacture of pharmaceuticals, medicinal chemical and botanical products	53	53	54	55	56	45	46	48	36
23. Manufacture of other non-metallic mineral products	47	52	48	51	51	46	50	48	35
24. Manufacture of basic metals	35	35	37	39	36	38	38	40	17
25. Manufacture of fabricated metal products, except machinery and equipment	33	34	36	39	39	42	38	37	34
26. Manufacture of computer, electronic and optical products	35	37	36	39	35	40	40	41	53
27. Manufacture of electrical equipment	11	14	17	28	30	29	31	30	34
28. Manufacture of machinery and equipment n.e.c.	31	33	34	40	40	40	40	38	34
29. Manufacture of motor vehicles, trailers and semi-trailers	42	41	40	51	58	43	42	41	38
31. Manufacture of furniture	38	39	38	40	43	44	41	41	40

Source: DOS

Table A.4. Distribution of employment by age group, economic activity, sex and year (%)

	Economic activity	2017	2018	2019	2020	2021
Male 15–24 years	Agriculture, forestry and fishing	2	2	2	2	3
	Mining and quarrying	0	0	0	0	1
	Manufacturing	13	12	11	14	16
	Electricity, gas, steam and air conditioning supply	1	0	1	1	1
	Water supply, sewerage, waste management and remediation activities	1	0	0	0	0
	Construction	6	6	7	6	6
	Wholesale and retail trade; repair of motor vehicles and motorcycles	19	19	20	21	21
	Transportation and storage	4	4	4	4	4
	Accommodation and food service activities	7	7	8	8	8
	Information and communication	1	1	1	1	1
	Financial and insurance activities	1	1	1	1	1
	Real estate activities	0	0	0	0	0
	Professional, scientific and technical activities	2	1	1	1	1
	Administrative and support service activities	1	1	1	1	1
	Public administration and defence; compulsory social security	37	37	35	33	27
	Education	2	2	2	1	1
	Human health and social work activities	1	1	2	1	2
	Arts, entertainment and recreation	0	0	0	0	0
	Other service activities	2	3	3	4	5
	Activities of households as employers; undifferentiated goods and service-producing activities of households for own use	0	0	0	0	0
	Activities of extraterritorial organizations and bodies	0	0	0	0	0
	Unspecified	0	0	0	0	0

Male 25–29 years	Agriculture, forestry and fishing	1	1	1	1	1
	Mining and quarrying	1	1	1	0	1
	Manufacturing	10	10	10	10	11
	Electricity, gas, steam and air conditioning supply	1	1	1	1	1
	Water supply, sewerage, waste management and remediation activities	0	0	1	0	0
	Construction	5	5	5	5	5
	Wholesale and retail trade; repair of motor vehicles and motorcycles	15	16	14	15	15
	Transportation and storage	6	6	5	5	6
	Accommodation and food service activities	3	4	4	4	4
	Information and communication	2	2	3	2	3
	Financial and insurance activities	2	3	3	3	3
	Real estate activities	0	0	0	0	0
	Professional, scientific and technical activities	4	4	3	3	3
	Administrative and support service activities	1	1	1	1	1
	Public administration and defence; compulsory social security	36	35	36	36	35
	Education	5	4	5	4	4
	Human health and social work activities	3	3	3	3	3
	Arts, entertainment and recreation	1	0	1	0	1
	Other service activities	3	2	2	2	2
	Activities of households as employers; undifferentiated goods and service-producing activities of households for own use	0	0	0	0	0
	Activities of extraterritorial organizations and bodies	1	1	0	0	0
	Unspecified	0	0	0	0	0
Female 15–24 years	Agriculture, forestry and fishing	1	1	1	1	1
	Mining and quarrying	0	0	0	0	0
	Manufacturing	12	11	13	15	20
	Electricity, gas, steam and air conditioning supply	0	0	1	1	0
	Water supply, sewerage, waste management and remediation activities	0	0	0	0	0
	Construction	1	1	1	2	1
	Wholesale and retail trade; repair of motor vehicles and motorcycles	12	12	12	13	10
	Transportation and storage	2	2	2	1	2
	Accommodation and food service activities	2	2	2	1	1
	Information and communication	4	4	5	4	7
	Financial and insurance activities	4	4	5	5	4
	Real estate activities	1	1	0	0	0
	Professional, scientific and technical activities	6	5	4	4	5
	Administrative and support service activities	3	2	2	1	2
	Public administration and defence; compulsory social security	7	11	11	6	4
	Education	22	22	20	16	15
	Human health and social work activities	17	17	15	22	24
	Arts, entertainment and recreation	1	1	1	1	1
	Other service activities	3	2	4	4	1
	Activities of households as employers; undifferentiated goods and service-producing activities of households for own use	1	0	1	1	0
	Activities of extraterritorial organizations and bodies	1	2	1	1	1
	Unspecified	0	0	0	0	0

Female 25–29	Agriculture, forestry and fishing	0	1	1	0	0
	Mining and quarrying	0	0	0	0	0
	Manufacturing	7	8	8	11	12
	Electricity, gas, steam and air conditioning supply	0	1	0	0	0
	Water supply, sewerage, waste management and remediation activities	0	0	0	0	0
	Construction	1	1	2	1	1
	Wholesale and retail trade; repair of motor vehicles and motorcycles	7	9	10	8	10
	Transportation and storage	1	2	1	2	2
	Accommodation and food service activities	1	1	0	1	1
	Information and communication	5	3	4	4	5
	Financial and insurance activities	6	5	5	8	6
	Real estate activities	0	0	0	0	0
	Professional, scientific and technical activities	5	6	6	8	8
	Administrative and support service activities	1	1	1	1	1
	Public administration and defence; compulsory social security	10	9	10	10	9
	Education	31	30	30	20	20
	Human health and social work activities	19	19	18	20	20
	Arts, entertainment and recreation	1	0	1	0	0
	Other service activities	2	1	1	2	2
	Activities of households as employers; undifferentiated goods and service-producing activities of households for own use	0	0	0	0	1
	Activities of extraterritorial organizations and bodies	2	3	2	3	3
	Unspecified	0	0	0	0	0

Source: DOS.

Table A.5. Vector-error correction estimates of fiscal reforms

Vector-error correction estimates				
Sample (adjusted): 2006Q2 2020Q4				
Included observations: 59 after adjustments				
Standard errors in () & *t*-statistics in []				
Cointegrating Eq:	CointEq1			
LGDP (-1)	1.000000			
UNEM (-1)	0.048305			
	(0.01731)			
	[2.79122]			
LDEBT (-1)	-0.524354			
	(0.20508)			
	[-2.55683]			
LDOM_TAX (-1)	0.898944			
	(0.39943)			
	[2.25055]			
C	-10.63667			
Error correction:	D(LGDP)	D(UNEM)	D(LDEBT)	D(LDOM_TAX)
CointEq1	-0.039967	-0.495846	-0.075738	-0.079314
	(0.01553)	(1.64121)	(0.04336)	(0.12555)
	[-2.57335]	[-0.30212]	[-1.74665]	[-0.63173]
D (LGDP (-1))	-0.275956	-2.958933	-0.703641	0.715665
	(0.12739)	(13.4615)	(0.35566)	(1.02979)
	[-2.16626]	[-0.21981]	[-1.97840]	[0.69496]
D (LGDP (-2))	-0.452503	-14.50199	-0.284350	0.670672
	(0.12835)	(13.5631)	(0.35835)	(1.03756)
	[-3.52554]	[-1.06922]	[-0.79350]	[0.64639]
D (LGDP (-3))	-0.332299	1.785111	-0.863067	1.457979
	(0.13294)	(14.0480)	(0.37116)	(1.07466)

	[-2.49964]	[0.12707]	[-2.32533]	[1.35669]
D (LGDP (-4))	0.508695	-18.92694	-0.144514	0.852545
	(0.14678)	(15.5104)	(0.40979)	(1.18652)
	[3.46577]	[-1.22028]	[-0.35265]	[0.71852]
D (UNEM (-1))	-0.001669	-0.294658	-0.003525	-0.004791
	(0.00162)	(0.17121)	(0.00452)	(0.01310)
	[-1.02991]	[-1.72106]	[-0.77919]	[-0.36581]
D (UNEM (-2))	-0.001600	-0.194483	-0.003510	0.008738
	(0.00173)	(0.18276)	(0.00483)	(0.01398)
	[-0.92514]	[-1.06417]	[-0.72700]	[0.62499]
D (UNEM (-3))	0.002251	-0.043520	-0.010872	0.035731
	(0.00168)	(0.17736)	(0.00469)	(0.01357)
	[1.34109]	[-0.24538]	[-2.32009]	[2.63352]
D (UNEM (-4))	-0.002321	-0.011092	-0.002614	0.015368
	(0.00161)	(0.17010)	(0.00449)	(0.01301)
	[-1.44185]	[-0.06521]	[-0.58161]	[1.18104]
D (LDEBT (-1))	-0.104657	-4.411940	-0.480348	0.278421
	(0.06404)	(6.76777)	(0.17881)	(0.51773)
	[-1.63413]	[-0.65190]	[-2.68637]	[0.53778]
D (LDEBT (-2))	-0.318567	2.794713	-0.045938	0.217921
	(0.07410)	(7.83052)	(0.20689)	(0.59902)
	[-4.29907]	[0.35690]	[-0.22204]	[0.36379]
D (LDEBT (-3))	-0.010509	-2.434531	-0.125809	0.378676
	(0.08082)	(8.54005)	(0.22563)	(0.65330)

Table A.6. Vector-error correction estimates of fiscal and social security reforms

Sample (adjusted): 2008, Q2; 2020, Q4					
Included observations: 51 after adjustments					
Standard errors in () & *t*-statistics in []					
Cointegration restrictions:					
B (1,1) =1, A (2,1) =0					
Convergence achieved after 75 iterations					
Restrictions identify all cointegrating vectors					
LR test for binding restrictions (rank = 1):					
Chi-square (1)	1.117946				
Probability	0.290361				
Cointegrating Eq:	CointEq1				
LGDP (-1)	1.000000				
UNEM (-1)	-0.008204				
	(0.00576)				
	[-1.42507]				
LDEBT (-1)	-0.296058				
	(0.03606)				
	[-8.21054]				
LDOM_TAX (-1)	0.378409				
	(0.08075)				
	[4.68608]				
LPENSION (-1)	-0.116872				
	(0.05266)				
	[-2.21927]				
C	-8.190605				
Error Correction:	D(LGDP)	D(UNEM)	D(LDEBT)	D(LDOM_TAX)	D(LPENSION)
CointEq1	-0.111912	0.000000	-0.399252	-0.276077	-0.237174
	(0.03794)	(0.00000)	(0.06401)	(0.39655)	(0.37091)

	[-2.94950]	[NA]	[-6.23689]	[-0.69619]	[-0.63943]
D (LGDP (-1))	-0.242246	-2.166038	-0.744868	-0.046838	1.325477
	(0.15064)	(19.1737)	(0.25204)	(1.69955)	(1.73805)
	[-1.60814]	[-0.11297]	[-2.95530]	[-0.02756]	[0.76262]
D (LGDP (-2))	-0.625547	1.642984	-0.865617	0.103260	2.802389
	(0.14117)	(17.9682)	(0.23620)	(1.59269)	(1.62877)
	[-4.43129]	[0.09144]	[-3.66480]	[0.06483]	[1.72055]
D (LGDP (-3))	-0.416882	-0.388396	-0.949020	0.062820	-0.429343
	(0.15326)	(19.5070)	(0.25643)	(1.72910)	(1.76827)
	[-2.72017]	[-0.01991]	[-3.70095]	[0.03633]	[-0.24280]
D (LGDP (-4))	0.409666	-2.981624	-1.091775	0.982186	4.095148
	(0.17078)	(21.7372)	(0.28574)	(1.92677)	(1.97042)
	[2.39884]	[-0.13717]	[-3.82084]	[0.50976]	[2.07831]
D (UNEM (-1))	-0.005346	-0.197519	-0.004353	-0.006835	0.001847
	(0.00152)	(0.19336)	(0.00254)	(0.01714)	(0.01753)
	[-3.51926]	[-1.02150]	[-1.71244]	[-0.39876]	[0.10535]
D (UNEM (-2))	-0.001736	-0.117153	-0.015494	0.008114	-0.009166
	(0.00188)	(0.23983)	(0.00315)	(0.02126)	(0.02174)
	[-0.92142]	[-0.48847]	[-4.91442]	[0.38167]	[-0.42162]
D (UNEM (-3))	-0.002098	0.130045	-0.012590	0.020483	-0.032451
	(0.00181)	(0.23009)	(0.00302)	(0.02039)	(0.02086)
	[-1.16065]	[0.56520]	[-4.16258]	[1.00430]	[-1.55589]
D (UNEM (-4))	-0.001906	-0.202396	-0.008300	0.002070	-0.020781
	(0.00194)	(0.24737)	(0.00325)	(0.02193)	(0.02242)
	[-0.98079]	[-0.81818]	[-2.55239]	[0.09440]	[-0.92674]
D (LDEBT (-1))	-0.219545	3.005601	-0.531538	-0.207334	0.215616
	(0.06562)	(8.35237)	(0.10979)	(0.74035)	(0.75712)
	[-3.34571]	[0.35985]	[-4.84121]	[-0.28005]	[0.28478]
D (LDEBT (-2))	-0.230042	2.472721	-0.391150	0.276560	-0.374143
	(0.06614)	(8.41808)	(0.11066)	(0.74618)	(0.76308)
	[-3.47831]	[0.29374]	[-3.53475]	[0.37064]	[-0.49031]
D (LDEBT (-3))	-0.019808	10.88286	-0.518961	0.448018	0.256234
	(0.08215)	(10.4569)	(0.13746)	(0.92689)	(0.94789)
	[-0.24110]	[1.04074]	[-3.77539]	[0.48335]	[0.27032]
D (LDEBT (-4))	-0.012863	-0.916532	-0.196894	-0.494976	0.592530
	(0.05595)	(7.12094)	(0.09361)	(0.63120)	(0.64550)
	[-0.22992]	[-0.12871]	[-2.10341]	[-0.78418]	[0.91794]
D (LDOM_TAX (-1))	0.026743	-1.878220	0.089590	-0.719131	-0.077001
	(0.02317)	(2.94875)	(0.03876)	(0.26138)	(0.26730)
	[1.15437]	[-0.63696]	[2.31127]	[-2.75133]	[-0.28807]
D (LDOM_TAX (-2))	0.012870	-0.035638	0.036624	-0.425325	-0.619335
	(0.02383)	(3.03274)	(0.03987)	(0.26882)	(0.27491)
	[0.54014]	[-0.01175]	[0.91867]	[-1.58219]	[-2.25286]
D (LDOM_TAX (-3))	0.026770	-1.974343	0.013065	-0.185017	-0.142002
	(0.02516)	(3.20276)	(0.04210)	(0.28389)	(0.29032)
	[1.06388]	[-0.61645]	[0.31032]	[-0.65172]	[-0.48912]
D (LDOM_TAX (-4))	0.056762	-4.287877	-0.004587	0.236865	-0.006437
	(0.02073)	(2.63805)	(0.03468)	(0.23384)	(0.23913)
	[2.73875]	[-1.62539]	[-0.13228]	[1.01295]	[-0.02692]
D (LPENSION (-1))	-0.025741	-0.137486	-0.006833	-0.015534	-0.508468
	(0.01698)	(2.16156)	(0.02841)	(0.19160)	(0.19594)
	[-1.51577]	[-0.06361]	[-0.24048]	[-0.08107]	[-2.59501]
D (LPENSION (-2))	0.029338	-1.311964	-0.037675	0.139400	-0.242643
	(0.01876)	(2.38767)	(0.03139)	(0.21164)	(0.21644)
	[1.56399]	[-0.54947]	[-1.20034]	[0.65866]	[-1.12108]
D (LPENSION (-3))	-0.022671	2.114843	0.001188	-0.078086	-0.302403

	(0.01839)	(2.34091)	(0.03077)	(0.20750)	(0.21220)
	[-1.23272]	[0.90343]	[0.03860]	[-0.37632]	[-1.42510]
D (LPENSION (-4))	-0.009419	-3.623486	0.010708	-0.234326	-0.270262
	(0.01559)	(1.98382)	(0.02608)	(0.17585)	(0.17983)
	[-0.60431]	[-1.82652]	[0.41061]	[-1.33257]	[-1.50288]
C	0.022928	-0.139817	0.097903	0.004684	-0.104876
	(0.00821)	(1.04477)	(0.01373)	(0.09261)	(0.09471)
	[2.79328]	[-0.13382]	[7.12859]	[0.05058]	[-1.10738]
D (LGRANT (-1))	-0.001081	-0.098853	-0.003024	0.001943	0.023674
	(0.00207)	(0.26396)	(0.00347)	(0.02340)	(0.02393)
	[-0.52143]	[-0.37450]	[-0.87140]	[0.08303]	[0.98942]
R-squared	0.988638	0.529004	0.802763	0.792473	0.752846
Adj. *R*-squared	0.979711	0.158937	0.647792	0.629416	0.558654
Sum sq. resids	0.002140	34.67765	0.005992	0.272462	0.284946
S.E. equation	0.008743	1.112873	0.014629	0.098645	0.100879
F-statistic	110.7455	1.429479	5.180067	4.860104	3.876814
Log likelihood	184.6378	-62.52974	158.3864	61.05226	59.90981
Akaike AIC	-6.338738	3.354108	-5.309271	-1.492245	-1.447443
Schwarz SC	-5.467523	4.225323	-4.438056	-0.621030	-0.576228
Mean dependent	0.007724	0.121569	0.028811	0.006477	-0.018972
S.D. dependent	0.061382	1.213477	0.024650	0.162043	0.151849
Determinant resid covariance (dof adj.)		5.39E-13			
Determinant resid covariance		2.69E-14			
Log likelihood		434.4691			
Akaike information criterion		-12.33212			
Schwarz criterion		-7.786651			
Number of coefficients		120			

Table A.7. Vector autoregressive estimates of monetary policy transmissions

Bayesian VAR estimates				
Date: 11/25/22 Time: 17:35				
Sample (adjusted): 2001Q2 2021Q4				
Included observations: 83 after adjustments				
Standard errors in ( ) & *t*-statistics in [ ]				
	D(LGDP)	D(LCPI)	D(LM2)	D(INTR)
D(LGDP(-1))	-0.264317	0.007988	-0.026899	-0.002778
	(0.03155)	(0.02737)	(0.03753)	(0.00679)
	[-8.37828]	[0.29189]	[-0.71671]	[-0.40898]
D(LGDP(-2))	-0.471033	-0.007392	-0.033206	0.003407
	(0.02622)	(0.02272)	(0.03115)	(0.00564)
	[-17.9655]	[-0.32539]	[-1.06602]	[0.60418]
D(LGDP(-3))	-0.204293	0.006245	0.008861	-0.000876
	(0.02549)	(0.02205)	(0.03022)	(0.00547)
	[-8.01548]	[0.28326]	[0.29318]	[-0.16008]
D(LGDP(-4))	0.289787	0.001639	0.046080	0.000936
	(0.02073)	(0.01791)	(0.02456)	(0.00445)
	[13.9770]	[0.09153]	[1.87656]	[0.21049]
D(LCPI(-1))	0.165900	0.177511	0.120056	0.008838
	(0.08378)	(0.07337)	(0.10003)	(0.01811)
	[1.98025]	[2.41943]	[1.20021]	[0.48802]
D(LCPI(-2))	0.007362	-0.007560	0.034892	0.003295
	(0.05173)	(0.04543)	(0.06176)	(0.01118)
	[0.14232]	[-0.16640]	[0.56494]	[0.29464]
D(LCPI(-3))	-0.009594	-0.015288	0.011080	-0.002730
	(0.03616)	(0.03178)	(0.04317)	(0.00782)

	[-0.26532]	[-0.48100]	[0.25664]	[-0.34927]
D(LCPI(-4))	-0.000710	-0.011369	-0.000510	-0.001854
	(0.02764)	(0.02431)	(0.03300)	(0.00597)
	[-0.02570]	[-0.46778]	[-0.01545]	[-0.31027]
D(LM2(-1))	0.130321	0.022921	0.039334	-0.010688
	(0.06302)	(0.05489)	(0.07567)	(0.01362)
	[2.06788]	[0.41761]	[0.51978]	[-0.78465]
D(LM2(-2))	0.023180	0.016271	0.038034	0.000602
	(0.03802)	(0.03311)	(0.04577)	(0.00822)
	[0.60973]	[0.49145]	[0.83095]	[0.07324]
D(LM2(-3))	-0.020258	-0.002633	0.013603	-0.000647
	(0.02652)	(0.02310)	(0.03195)	(0.00573)
	[-0.76395]	[-0.11399]	[0.42572]	[-0.11293]
D(LM2(-4))	0.027262	0.003452	0.015863	0.001601
	(0.02023)	(0.01762)	(0.02439)	(0.00437)
	[1.34728]	[0.19591]	[0.65037]	[0.36600]
D(INTR(-1))	0.134030	0.122809	0.220192	0.249629
	(0.32618)	(0.28412)	(0.38943)	(0.07088)
	[0.41091]	[0.43225]	[0.56542]	[3.52178]
D(INTR(-2))	0.237097	0.010737	-0.192454	0.066709
	(0.20676)	(0.18008)	(0.24685)	(0.04507)
	[1.14675]	[0.05963]	[-0.77963]	[1.48028]
D(INTR(-3))	-0.025481	0.031516	0.038304	0.016526
	(0.14547)	(0.12670)	(0.17369)	(0.03173)
	[-0.17516]	[0.24875]	[0.22054]	[0.52076]
D(INTR(-4))	0.055111	0.024178	-0.024436	0.001685
	(0.11001)	(0.09581)	(0.13135)	(0.02400)
	[0.50096]	[0.25234]	[-0.18604]	[0.07019]
C	0.012063	0.005759	0.016508	-0.000127
	(0.00230)	(0.00200)	(0.00275)	(0.00050)
	[5.25588]	[2.88089]	[6.01303]	[-0.25536]
R-squared	0.864857	0.133902	0.224229	0.266323
Adj. *R*-squared	0.832095	-0.076062	0.036163	0.088462
Sum sq. resids	0.044441	0.012002	0.020273	0.000738
S.E. equation	0.025949	0.013485	0.017526	0.003344
F-statistic	26.39813	0.637739	1.192291	1.497365
Mean dependent	0.011089	0.007694	0.019959	-0.000389
S.D. dependent	0.063327	0.013000	0.017852	0.003502

Table A.8. Vector autoregressive estimates of trade liberalization and FDI inflows

Sample (adjusted): 2005Q4 2020Q4				
Included observations: 61 after adjustments				
Prior type: Litterman/Minnesota				
Initial residual covariance: Univariate AR				
Hyper-parameters: Mu: 0, L1: 0.1, L2: 0.99, L3: 1				
Standard errors in () & *t*-statistics in []				
	D(LGDP)	D(UNEM)	D(LFDI)	D(OPENNESS)
D (LGDP (-1))	-0.022677	-0.716572	-1.025371	-101.7406
	(0.06126)	(2.09769)	(0.76138)	(98.4887)
	[-0.37019]	[-0.34160]	[-1.34674]	[-1.03302]
D (LGDP (-2))	-0.240721	-0.976877	-0.048558	63.40894
	(0.04180)	(1.42672)	(0.51783)	(66.9879)
	[-5.75875]	[-0.68470]	[-0.09377]	[0.94657]
D (UNEM (-1))	0.002715	-0.149591	-0.055421	-3.579388
	(0.00229)	(0.07933)	(0.02862)	(3.70095)
	[1.18397]	[-1.88572]	[-1.93657]	[-0.96715]
D (UNEM (-2))	-0.000402	-0.009547	-0.002944	0.916727
	(0.00134)	(0.04646)	(0.01672)	(2.16265)
	[-0.29991]	[-0.20547]	[-0.17609]	[0.42389]
D (LFDI (-1))	0.013768	-0.273916	-0.130317	-7.715275
	(0.00632)	(0.21720)	(0.07931)	(10.1958)
	[2.17941]	[-1.26111]	[-1.64315]	[-0.75671]
D (LFDI (-2))	0.000789	0.018048	-0.018699	1.803760
	(0.00370)	(0.12727)	(0.04659)	(5.97527)
	[0.21318]	[0.14181]	[-0.40131]	[0.30187]
D (OPENNESS (-1))	7.46E-06	-0.000508	-0.000114	-0.040377
	(4.9E-05)	(0.00170)	(0.00062)	(0.08025)
	[0.15092]	[-0.29935]	[-0.18530]	[-0.50314]
D (OPENNESS (-2))	4.03E-05	-0.000200	-0.000216	-0.022947
	(2.9E-05)	(0.00099)	(0.00036)	(0.04706)
	[1.39512]	[-0.20170]	[-0.59979]	[-0.48765]
C	0.010425	0.084238	-0.013777	1.021009
	(0.00455)	(0.15645)	(0.05678)	(7.34542)
	[2.29027]	[0.53844]	[-0.24263]	[0.13900]
R-squared	0.429652	0.155858	0.213362	0.119045
Adj. *R*-squared	0.341906	0.025990	0.092341	-0.016487
Sum sq. resids	0.122267	87.44093	10.73869	173515.9
S.E. equation	0.048490	1.296748	0.454437	57.76542
F-statistic	4.896555	1.200126	1.763017	0.878353
Mean dependent	0.008030	0.060656	-0.025228	0.574133
S.D. dependent	0.059773	1.313935	0.476994	57.29504

Table A.9. Value added per worker by manufacturing subsector

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Manufacture of food products and beverages	6 986.70	6 812.10	7 350.00	7 216.30	7 907.40	8 360.30	9 249.30	9 411.40	10 474.60	11 298.90	23 217.00
Manufacture of tobacco products	99 045.20	119 725.10	140 155.40	131 228.00	115 048.90	114 764.70	123 274.00	136 572.70	128 454.00	129 473.10	147 400.20
Manufacture of textiles	9 720.60	7 114.80	8 403.60	8 311.40	8 186.70	9 656.60	9 755.20	9 144.90	8 679.40	10 733.20	12 273.70
Manufacture of wearing apparel, dressing and dyeing of fur	2 921.30	2 628.10	2 855.80	3 484.90	5 029.90	6 717.40	10 295.20	10 248.50	9 921.30	8 028.30	13 488.60
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	4 877.60	3 663.70	4 825.60	3 893.60	3 320.50	4 647.10	4 372.30	4 139.20	8 490.10	8 180.30	48 528.30
Manufacture of wood and of wood & cork products, except furniture and of articles of straw & plaiting materials	4 014.90	4 618.70	4 054.40	4 002.70	4 162.60	5 934.10	5 086.00	4 093.20	7 368.50	7 634.80	30 716.10
Manufacture of paper and paper products	5 236.20	7 393.30	10 189.50	12 180.40	12 954.30	12 267.80	13 623.30	13 531.50	16 329.20	16 986.90	24 195.20
Publishing, printing and reproduction of recorded media	8 549.20	8 651.40	9 485.90	9 799.00	9 900.50	10 960.00	9 825.10	9 695.10	12 304.10	15 655.80	22 046.30
Manufacture of coke, refined petroleum products and nuclear fuel	17 555.40	17 782.80	18 582.00	19 347.50	19 473.10	19 280.80	21 447.80	23 051.60	23 599.30	34 393.40	54 246.70
Manufacture of chemicals and chemical products	15 539.20	18 372.00	15 445.90	15 222.80	17 016.30	17 117.90	18 980.10	19 418.90	21 894.30	27 439.50	41 382.50

Manufacture of rubber and plastics products	6 152.50	7 683.70	6 527.70	6 992.30	8 271.00	9 032.30	11 051.60	12 000.60	11 853.70	11 950.30	17 581.10
Manufacture of other non-metallic mineral products	8 855.10	10 547.10	10 423.50	11 173.80	12 972.80	14 317.90	15 329.40	18 063.10	20 761.50	21 302.70	85 580.40
Manufacture of basic metals	13 918.00	13 122.20	17 110.90	20 375.80	19 175.20	20 249.20	28 662.10	31 435.50	36 650.20	39 452.50	40 525.70
Manufacture of fabricated metal products, except machinery and equipment	4 111.60	5 074.70	5 518.50	6 468.60	5 938.20	7 035.20	9 853.00	10 209.20	13 135.80	14 168.80	35 512.20
Manufacture of machinery and equipment n.e.c.	5 646.50	6 435.10	6 156.10	6 674.10	7 492.60	7 701.40	8 628.20	9 832.10	12 174.10	14 332.60	23 321.30
Manufacture of electrical machinery and apparatus n.e.c.	10 882.50	8 349.80	15 041.60	13 698.20	12 686.00	14 154.00	16 221.50	18 675.70	17 583.50	19 958.10	24 545.80
Manufacture of medical, precision and optical instruments, watches and clocks	4 765.90	4 778.50	4 219.00	3 473.90	5 776.70	6 324.70	6 468.40	7 126.80	7 804.20	6 918.90	14 918.00
Manufacture of motor vehicles, trailers and semi-trailers	6 333.40	7 514.20	7 644.20	8 646.10	8 448.10	8 699.30	9 428.70	9 342.20	9 072.00	5 862.00	9 979.20
Manufacture of other transport equipment	11 616.70	2 737.50	6 725.00	13 600.00	9 151.20	38 147.10	14 348.90	16 902.20	28 791.30		
Manufacture of furniture; manufacturing n.e.c.	4 580.20	4 070.70	3 850.10	4 355.30	5 015.70	5 843.40	6 795.60	5 742.50	7 230.50	8 412.60	29 331.00

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