

Astrov, Vasily; Ghodsi, Mahdi; Grieveson, Richard; Stehrer, Robert

Research Report

The Iranian Economy: Challenges and Opportunities

wiiw Research Report, No. 429

Provided in Cooperation with:

The Vienna Institute for International Economic Studies (wiiw) - Wiener Institut für Internationale
Wirtschaftsvergleiche (wiiw)

Suggested Citation: Astrov, Vasily; Ghodsi, Mahdi; Grieveson, Richard; Stehrer, Robert (2018) :
The Iranian Economy: Challenges and Opportunities, wiiw Research Report, No. 429, The Vienna
Institute for International Economic Studies (wiiw), Vienna

This Version is available at:

<https://hdl.handle.net/10419/204201>

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JULY 2018

Research Report 429

The Iranian Economy: Challenges and Opportunities

Mahdi Ghodsi, Vasily Astrov, Richard Grieveson and
Robert Stehrer

**R**

The Iranian Economy: Challenges and Opportunities

MAHDI GHODSI
VASILY ASTROV
RICHARD GRIEVESON
ROBERT STEHRER

Mahdi Ghodsi, Vasily Astrov and Richard Grieveson are Research Economists at the Vienna Institute for International Economic Studies (wiiw). Robert Stehrer is Scientific Director at wiiw.

Abstract

The Iranian economy has greatly benefited from the lifting of international sanctions in 2016, when the JCPOA nuclear deal came into force. Oil production and exports rebounded strongly, which spilled over into non-oil sectors. However, the economy is yet to return to its 1976 peak in real per capita GDP terms, reflecting numerous challenges over the past four decades, including poor policy choices and the fallout from persistent conflict with the US. This report presents a broad overview of the Iranian economy, and identifies the main challenges to long-run economic development, including in foreign trade and investment, fiscal, monetary and exchange rate policy, and the institutional environment. It concludes that an already difficult situation for Iranian policymakers will be exacerbated by the US decision to pull out of the JCPOA, and the introduction of new sanctions.

Keywords: Iran, European Union, international trade, foreign direct investment, macroeconomic environment, privatisation, political economy of sanctions

JEL classification: E02, E62, F19, F31, F51, G32, O13, P48

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ABBREVIATIONS AND NOTE ON YEARLY DATA

Note on yearly data (Persian vs Gregorian calendar): The Iranian year usually begins within a day of 21 March of the Gregorian calendar; the Iranian calendar year 1397 starts on 21 March 2018. Hence, the text refers to 2018/19 when 2018 data are gathered from Iranian sources.

AE	United Arab Emirates
AM	Armenia
AZ	Azerbaijan
BY	Belarus
GE	Georgia
IQ	Iraq
IR	Iran
KR	South Korea
KZ	Kazakhstan
PK	Pakistan
RU	Russia
SA	Saudi Arabia
TR	Turkey
UA	Ukraine

ASEAN	Association of Southeast Asian Nations
CIS	Commonwealth of Independent States
EAEU	Eurasian Economic Union
EU	European Union

EUR	euro
IRR	Iranian rial
USD	US dollar

AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
BEC	Broad Economic Category
BOP	balance of payments
bpd	barrels per day
BRI	China's Belt and Road Initiative
CA	current account
CBI	Central Bank of Iran
CBRs	Correspondent Bank Relations
CIF	Cost, Insurance and Freight
CPI	consumer price index
FDI	foreign direct investment
FOB	Free On Board
FIPPA	Foreign Investment Promotion and Protection Act
GFCF	gross fixed capital formation
GDP	gross domestic product
HDI	Human Development Index of the UNDP

HS	Harmonised Commodity Description and Coding System
HT	high technology
IAEA	International Atomic Energy Agency
IMF	International Monetary Fund
IRGC	Islamic Revolutionary Guard Corps
JCPOA	Joint Comprehensive Plan of Action
LPI	Logistics Performance Index of the World Bank
MHT	medium-high technology
MLT	medium-low technology
MNE	multinational enterprise
NDFI	National Development Fund of Iran
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
OSF	Oil Stabilisation Fund
pp	percentage points
PPI	producer price index
PPP	purchasing power parity
SCI	Statistical Center of Iran
SITC	Standard International Trade Classification
SME	small and medium-sized enterprise
SNA	System of National Accounts
SWIFT	Society for Worldwide Interbank Financial Telecommunication
ULC	unit labour cost
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VAT	value added tax
WDI	World Development Indicators of the World Bank
WGI	World Governance Indicators of the World Bank
wiiw	The Vienna Institute for International Economic Studies
WMD	weapons of mass destruction
WTO	World Trade Organisation
.	not available (in tables)
lhs	left-hand side axis/panel
p.a.	per annum
rhs	right-hand side axis/panel

1. Introduction

The Iranian economy has greatly benefited from the lifting of the nuclear sanctions in 2016, when the Joint Comprehensive Plan of Action (JCPOA) nuclear deal was signed. Oil production and exports rebounded strongly, leading to a 27% increase in the overall exports (of goods and services, in US dollar terms) and real GDP growth of 12.5% in 2016/17. The boom in the oil sector spilled over into the non-oil sector of the economy as well, and the unemployment rate declined somewhat, to 11.7% in the first half of 2017/18.

However, Iran's immediate economic prospects have been adversely affected by the recent (May 2018) decision by the United States to withdraw from the JCPOA nuclear deal signed by the previous US administration under President Obama. The EU has repeatedly reiterated its adherence to the JCPOA deal (along with Russia and China), but has not been able to affect the US position. As US economic sanctions on Iran will be reinstated, Iran's trade and investment links established since 2016 will also suffer. This will also be the case for European companies dealing with Iran, which face the prospects of US sanctions against themselves. As a result, Iran's GDP growth is likely to stall or even reverse, as its oil production and exports will decline and access to international financial markets will deteriorate yet again.

The current geopolitical climate will do little to solve the long-standing structural weaknesses of Iran's economy, above all excessive dependence on the oil sector. Oil revenues account for around half of the total revenues of the central government budget and form the basis of the National Development Fund of Iran (NDFI). In addition, the banking sector is weak and the lack of Correspondent Bank Relations (CBRs) remains a big problem. This has been a crucial obstacle in accessing a substantial part of oil revenues, resulting in depreciation and inflationary pressures.

This report presents a broad picture of the Iranian economy and identifies the main economic problems in a number of areas, including foreign trade and investment, fiscal, monetary and exchange rate policy, and the institutional environment. It concludes with a summary of the main research findings and outlines the most pressing challenges for the Iranian economy in the present circumstances.

2. The legacy of history: Iranian international relations and trends in economic development since the 1970s

2.1. DEVELOPMENTS AFTER THE REVOLUTION

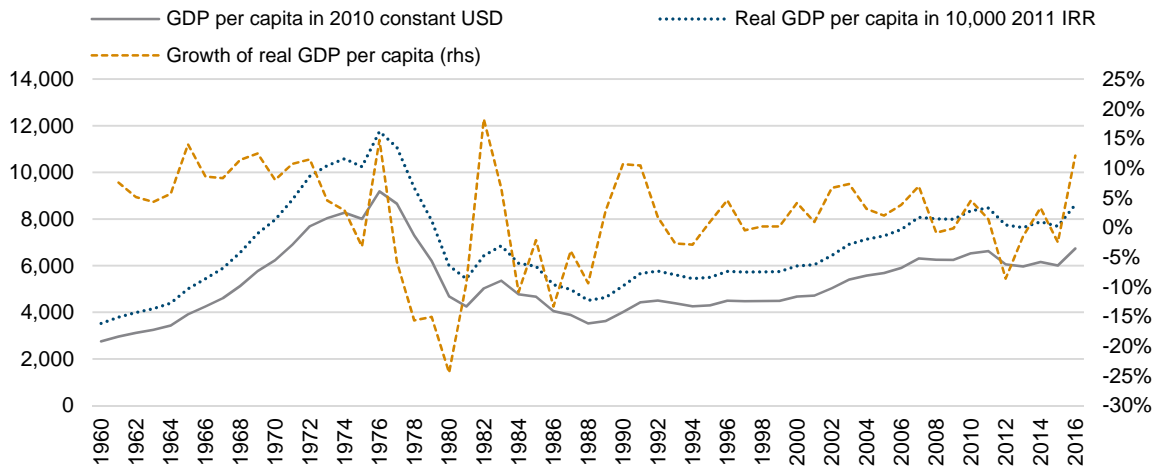
Iran's economic policies since 1979 and the isolation from international economic relations have had a substantial deteriorating impact on Iran's economic development and Iranians' well-being. Iran's real gross domestic product (GDP) per capita (either in local currency or in constant 2010 USD) has never reached its pre-Revolution level (see Figure 1).¹ This long-run deterioration is caused by several reasons. It is firstly because oil production has never reached its level of before 1978, which was due to losses in Iran's global and OPEC market share.² Secondly, at the time of war, there was a widespread rhetoric by the Spiritual Supreme Leader of Iran, Ayatollah Ruhollah Khomeini, to incentivise having more children, which effectively led to a 45% growth of population from around 39 million in 1980 to 56 million in 1990, and 80 million now (see Figure 2). Thirdly, the destabilised economy under sanctions, characterised by very high inflation and a weakening currency, had further serious negative outcomes for the future of Iran's economy. Generally, the Revolutionary Iran was lacking economic expertise implying mismanagement of the economy. In addition to that and being isolated from the international community via heavy sanctions, Iranian authorities have mismanaged the resources through very large state-owned enterprises lacking competitive markets.

The current situation can only be understood from a historical perspective. On 4 November 1979, about 9 months after the Islamic Revolution, a large crowd of Iranian students occupied the embassy of the United States in Tehran, and the US staff along with many others were held hostage. This revolutionary act of the new-born Islamic Republic, inexperienced and in defiance of international diplomatic norms, was pursuing revenge and the return of Mohammad Reza Shah to stand trial in Iran. This holding of around 50 US embassy staff hostage for 444 days had serious consequences.

¹ Some might argue that Iran's GDP per capita in purchasing power parity (PPP) terms is standing at a relatively better position right now than many other countries whose GDP per capita is now much higher than that of Iran. However, income in PPP terms could be a good indication for purchases of only national products while neglecting the purchasing power of internationally traded commodities. Some scholars argue that countries with larger income per capita have higher quality of imported products. Being able to import a very high quality smart phone which cannot be purchased in purchasing power parity terms but in nominal terms could be a good example to show why the developments of real GDP per capita matter more than the GDP per capita in PPP.

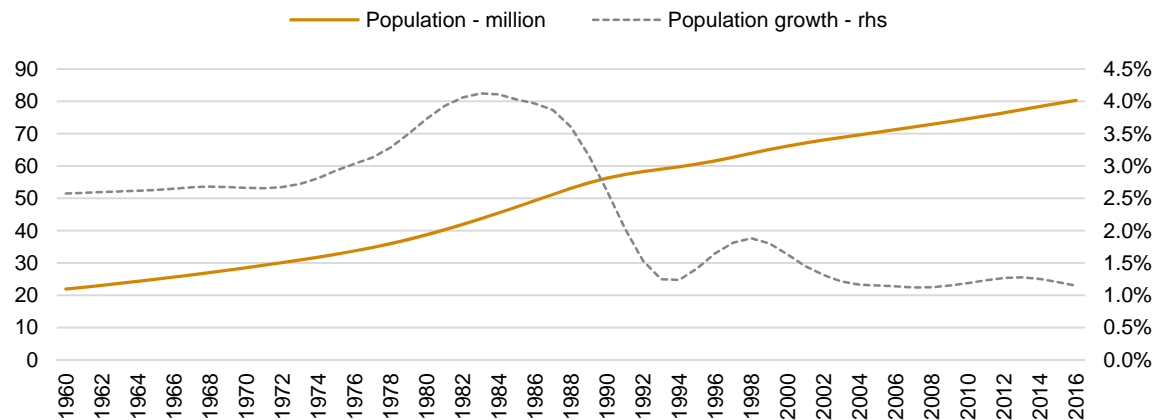
² Two other oil-dependent countries in the region, namely Saudi Arabia and the United Arab Emirates, have also experienced their historic real GDP per capita peak in 1980, when the inflation-adjusted price of oil stood at above 110 USD.

Figure 1 / Real GDP per capita, levels and growth, 1960-2016



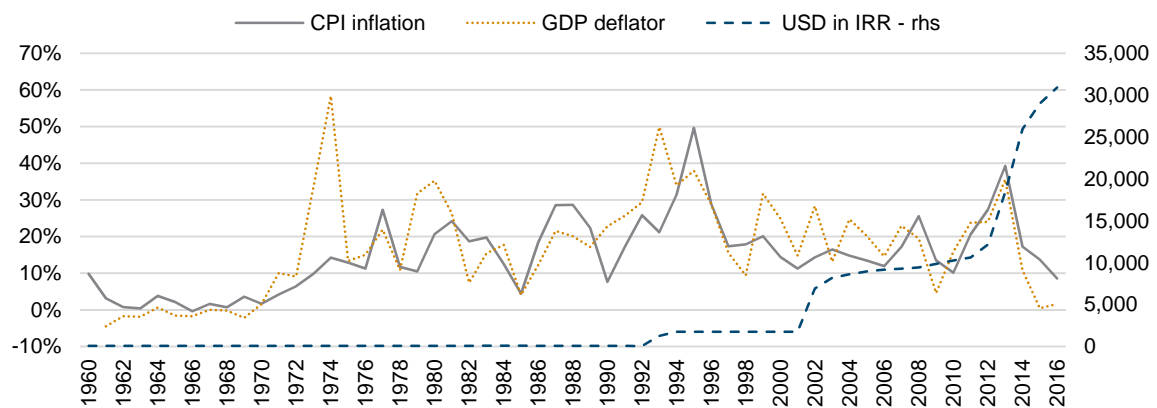
Source: World Development Indicator (WDI) of the World Bank.

Figure 2 / Population development of Iran, 1960-2016



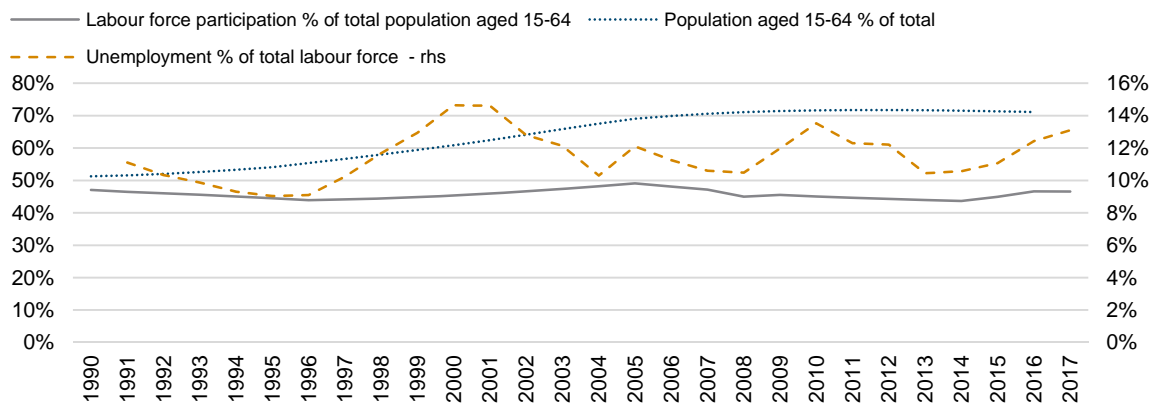
Source: WDI of the World Bank.

As a major consequence of the hostage crisis, Iran was left without any international support at the time of the Iraq-imposed war in September 1980, which led to further isolation of Iran from the international economy. Following the early defence of Iranian military and popular forces, which had been founded as the Islamic Revolutionary Guard Corps (IRGC), and several offensive progresses, the Iraq invasion led to an eight-year war. This period was characterised by destruction, death, austerity, and rationing of primary commodities, as well as average annual consumer price inflation of around 20% (see Figure 3). From 1980 to 1988, Iran's real economy shrank by an average annual rate of 1.6%, while along with the growing population per capita real income shrank by a 5.4% average annual rate (see Figure 1). Iran's trade (imports plus exports) to GDP ratio dropped to its lowest level of 14% in 1986 and net inflows of FDI became negative.

Figure 3 / Inflation and exchange rate in Iran, 1960-2016

Source: WDI of the World Bank.

Economic performance also had a profound impact on the labour market. Based on estimates of the International Labour Organisation (ILO), the average unemployment rate of Iran was around 10.4% during the period 1991-1999, of which in some years around 9%. In 2000, unemployment jumped to 14.6% and since then the average rate stands at 12% (see Figure 4). The share of population aged 15-64 has increased to about 70% since the mid-2000s, whereas the labour force participation rate hovered around slightly less than 50%.

Figure 4 / Labour force development in Iran, 1990-2017

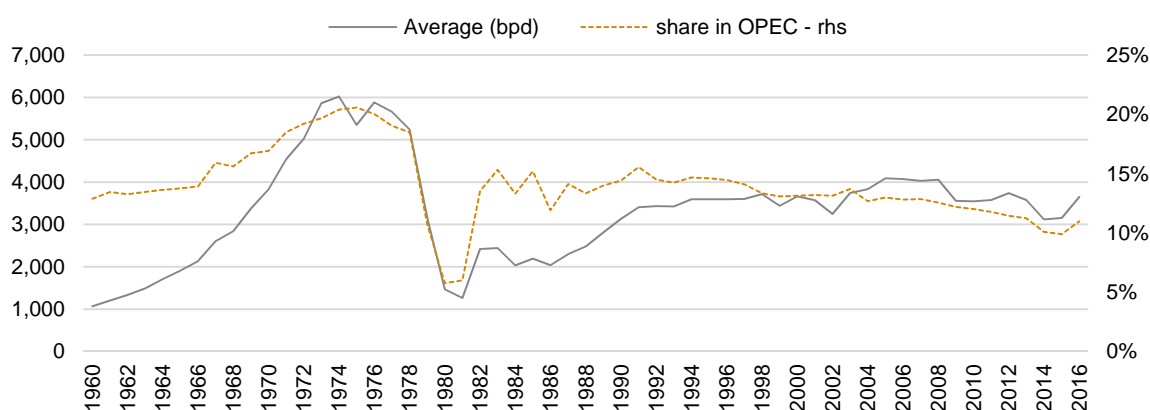
Source: WDI of the World Bank, International Labour Organisation.

The increase in young population and the destructions of the war era posed serious challenges to the policy-makers. From 1989, the Iranian government introduced five-year development plans which were aimed not only at economic development but also at social and demographic issues. Based on these five-year plans, target growth rates of GDP per capita and employment were envisaged so that the large number of new entrants to the labour market would be able to find jobs. However, when those born in the 1980s entered the labour market in the early 2000s, labour supply exceeded labour demand by far. Consequently, many of the young decided to start university studies seeking for higher education, which even led to a proliferation of higher education institutions in Iran.

2.2. THE ROLE OF SANCTIONS AND ISOLATION

As another major consequence of Iran's violating international diplomatic norms by the hostage crisis, the US government imposed sanctions against Iran for the first time in 1979.³ Around USD 12 billion of Iranian government assets in the United States and all US banks were frozen, sending a bad signal to enterprises that were doing business with Iran. These events brought further uncertainties in the global oil market, which responded with supply and demand⁴ adjustments (as had been initiated at the time of the Yom Kippur War). On the supply side, with the development of non-OPEC exploration fields, the OPEC market share dropped from 45% in 1980 to 28% in 1986. Iran's decreased share in OPEC reduced its oil revenue even further after the Revolution (see Figure 5). Before, the Shah's close relations with the United States and the European allies had helped him to sustain a large market share in the global oil market and thereby improve economic conditions in Iran. This benefit is, however, missing in the current Islamic Republic of Iran, which has not managed to bring Iranians' living standards in terms of real GDP per capita back to the level reached forty years ago.

Figure 5 / Iran's daily crude oil production, 1960-2016



Source: OPEC.

The international sanctions against the Islamic Republic of Iran discouraged multinational enterprises (MNEs) from investing in Iran and in general doing business with Iran. Since the Islamic Revolution, Iran's net inflows of foreign direct investment (FDI) have been very low compared to many other countries in the region (see Section 5.5 on foreign direct investment). The most important reason is that, since the Islamic Revolution, diplomatic relations between Iran and the United States have considerably deteriorated and MNEs have become uncertain about the future of Iran. However, with relations between the EU and Iran improving at the beginning of the new millennium, FDI from the EU came to Iran, boosting the production of oil and the overall economy. In 2002, incentives for FDI were introduced by the Foreign Investment Promotion and Protection Act (FIPPA), passed by the Iranian parliament with the reformist majority.

During the presidency of Mahmoud Ahmadinejad, Iran withdrew from the Safeguard Agreement of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and the international community intensified its sanctions against Iran's nuclear activities. This further isolation resulted in a deep recession. After the

³ <https://edition.cnn.com/2012/01/23/world/meast/iran-sanctions-facts/index.html>

⁴ On the demand side, production of electricity for instance transformed itself from crude oil usage to gas and nuclear.

EU had introduced sanctions regarding Iran's nuclear programme on 23 March 2012, Iran's total exports dropped by 32%, which resulted in a deep recession in 2012-2013 (see Chapter 5 on Trade). Iran's Central Bank was also disconnected from international transactions through SWIFT, lacking access to its assets overseas. Being disconnected from international exchange reserves led to a more than 200% depreciation of the Iranian rial (IRR) against the US dollar from 2012 to 2014 (see Figure 3).

Since the Islamic Revolution in 1979, the Iranian authorities (mainly from the camp of hardliners and right-wing conservatives) have reiterated to the public that international sanctions were ineffective and that isolation from the advanced economies in both the West and the East have been bringing independence, which in their opinion matters most. Self-sufficiency has been the key slogan of the Islamic Republic, which is also reflected in the naming of the year 2018/2019 (the Persian calendar year 1397 that starts on 21 March 2018) as 'Year of Support for Iranian Products' by the Supreme Leader of Iran, Ayatollah Ali Khamenei.⁵ This suggests a general policy to all authorities that Iran should focus on domestic demand for national products avoiding imports regardless of domestic capacities and product qualities.

Iran's isolation from international trade, investment, and finance has however jeopardised its stability. A recent International Monetary Fund report (IMF, 2018) points towards the bad monetary conditions of Iran's isolated financial market that has very limited access to correspondent banking relations (CBR). This has also paralysed the Central Bank's policies, which are not independent of the Executive Government, and for many decades until recently had been causing very high inflation and excessive exchange rate depreciations. Consequently, Iranians' consumption in USD has been shrinking tremendously as it was also shrinking in local currency in real terms (see Figure 1). Social norms have also deteriorated and pervasive corruption seems to have become epidemic and a means of pressure and bargaining between political camps, shaking the Iranian institutions and trickling through social connections and norms to corruption at the very micro level (see Chapter 3). The social unrest that brought Iranian low- and middle-class citizens to the streets in the final days of 2017 documents the discontent with the economic, social, and political situation resulting from the general policies in Iran over the past 40 years.

2.3. THE ROLE OF THE PUBLIC SECTOR AND OWNERSHIP STRUCTURES

An important impediment to the development of the Iranian economy is that it has been following a centralised economy model with a very large size of the public sector. Irrespective of types of states and their goals, one common feature of the two states before and after the Islamic Revolution is that a very large share of capital and assets is owned by the state and those close to the circle of power. The public sector covers most of the economy including major key industries, international trade, mining, banking, insurance, energy, dams and water resources, broadcasting, telecommunication, aviation, maritime, railway, etc. The capital owned by the public sector of the economy is shared between the central government and semi-public enterprises which are mostly exempted from income or profit taxation constraining the fiscal policies of the central government (IMF, 2018). Financial statements of most of these semi-public (state-owned) enterprises have never been available to the Iranian public who should be their ultimate owners.

⁵ <https://en.mehrnews.com/news/132948/Leader-names-New-Year-as-Year-of-Support-for-Iranian-Products>

2.3.1. Foundations (Bonyads) and Executions (Setads)

Among these enterprises, one that has been more transparent is the Islamic Revolution Mostazafan Foundation (*Bonyad*). After the Islamic Revolution, assets of the Shah, his family, close relatives, and of many others who fled the country were confiscated. By order of Ayatollah Khomeini, these confiscated assets were transferred to the above-mentioned new charitable foundation. Bonyad's total assets stood at USD 18 billion on 20 March 2015⁶, equivalent to 13% of total gross capital formation of Iran in the same year. According to estimates on countries' capital stocks by the Penn World Table (PWT, Feenstra et al., 2015⁷), Bonyad's total assets in 2014 amounted to around 0.57% of Iran's capital stock. From 2003 to 2015, the change in total assets of Bonyad was around 1.5% of gross capital formation of Iran in annual average terms, with its highest level of 2.6% in 2015. Foundations in Iran generally encompass several other sub-companies including large holding companies and their heads are selected directly by the Supreme Leader. This foundation, for instance, had been headed by IRGC commanders for many years.

The largest foundation in Iran is Astan Quds Razavi, whose assets and turnover are not available to the public. This foundation was established more than two centuries ago and is currently headed by Ebrahim Raisi, the main hardliner opponent of Hassan Rouhani during the Iranian presidential election in 2017.⁸

Since the establishment of the Islamic Republic several other public entities have expanded their assets and economic activities in Iran with less transparency than the Mostazafan Foundation. The 'Execution (*Setad*) of Imam Khomeini's Order', for instance, was estimated by Reuters⁹ to hold around USD 95 billion assets in 2013, equivalent to more than 50% of Iran's gross capital formation in 2013. This Setad is operating under the control of the Supreme Leader of Iran. A number of other Setads and Bonyads along with some other entities owned by the IRGC¹⁰ have expanded their activities in the financial, insurance, and banking sectors, which made the management of the economy through monetary policies of the Central Bank of Iran more difficult.

2.3.2. A failed privatisation

The Islamic Republic has never been successful in privatising public companies. In June 2006, an amendment to Article 44¹¹ of the Constitution was ratified and the Supreme Leader imposed a privatisation process transferring 80% of the government ownership to the private sector in the fourth five-year development plan (2005-2009). This could be considered as an appropriate reform to change

⁶ <http://www.irmf.ir/en/Images/Financial/Links/EN-H15-t.pdf>

⁷ Feenstra, R.C., R. Inklaar and M.P. Timmer (2015), 'The next generation of the Penn World Table', *American Economic Review*, 105(10), pp. 3150-82.

⁸ See 'Opinion corner: What are the reasons for and the likely consequences of Hassan Rouhani's victory in the Iranian presidential elections?', *wiiw Monthly Report* No. 6/2017, Vienna, June, pp. 2-4.

⁹ <https://www.reuters.com/investigates/iran/#article/part1>

¹⁰ Setads have also been usually managed by IRGC commanders.

¹¹ This Article allocates the economy into three categories of public, cooperative, and private sectors.

the inefficient public economy producing 80% of Iran's GDP¹² into a more efficient market economy ensuring growth and a just distribution of wealth.

Despite the consensus within the power circle and a collaborative legislative framework to implement the privatisation, the executive government of the time headed by Mr Ahmadinejad did not manage the process well. First, the majority shares of some major activities such as the telecommunication and steel industries were transferred to a consortium of state-owned enterprises struggling for power. Second, some other major ownerships were transferred to other semi-public enterprises such as the Social Security and Pension Organisation of Iran to compensate previous government debts. Third, a much smaller share of ownership was transferred to the real private sector and proved to be too little to change the inefficient management into an efficient one. Overall, this process has led to a monopolisation of state-owned enterprises rather than privatisation, which could not even benefit the public through taxation.

2.4. CURRENT IRANIAN RELATIONS WITH THE EU AND THE US

The EU-28 had been Iran's major trading partner for decades. Therefore, the introduction of sanctions against Iran in 2012 had serious consequences for the economic relations between the EU and Iran.¹³ Under the reformist president Mohammad Khatami (1997-2005) Iran and the EU had started to improve their relations recognising their mutual interests. In 2001, the Council of the European Union adopted a mandate to negotiate a comprehensive trade and cooperation agreement and a political dialogue with Iran. This dialogue was encompassing Iran's human rights situation, support to fight terrorism, the Middle East Peace Process, and the issue of non-proliferation of weapons of mass destruction (WMD).

This dialogue enabled the West to initiate a surveillance mechanism over Iran's nuclear activity through diplomacy for the first time after the diplomatic engagement between Washington and Teheran had been broken in 1979. This phase encouraged further cooperation between Iran and the International Atomic Energy Agency (IAEA) of the UN and inspections of Iranian nuclear facilities started to be regularly reported by the board of governors of the IAEA.

This phase of the EU-Iran dialogue coincided with the 9/11 terrorist attack in 2001 that was followed by the invasion of Afghanistan by the US and its European allies. In fact, in the 2002 State of the Union address, George W. Bush called three countries – Iraq, Iran, and North Korea – the 'axis of evil' and accused them of the support of terrorism, production and storage of WMD, and suppressing their domestic citizens. Iraq was finally invaded by the US and a coalition of the United Kingdom, Australia, and Poland on the first day of spring, 20 March 2003, on the (fake) allegations of storing WMD in some military sites.

Prior to that, in response to Mr Bush's address, North Korea had announced to withdraw from the NPT on 10 January 2003. North Korea ended its suspension of plutonium processing which had been initiated by diplomatic efforts of former US President Jimmy Carter in 1993 and 1994 during the presidency of Bill Clinton. This meant that North Korea circumvented the nuclear Safeguard Agreement and would no longer allow inspections by the IAEA.

¹² <https://web.archive.org/web/20120325125521/http://previous.presstv.com/detail.aspx?id=112444§ionid=351020102>

¹³ These trade relations are discussed in Section 5.4 in more detail.

In Iran – acting slightly more conservatively and slowly than North Korea due to its relatively larger size – a domestic political transformation of power from the reformist camp to the hardliners happened after Mr Bush's address. It was during this time and in the second term of his presidency that Mr Khatami came under intensified political pressure from the hardliners in Iran, who have always controlled the Guardian Council, the judiciary, and the Islamic Revolutionary Guard Corps (IRGC). In one strong action, the Guardian Council, which is responsible for vetting the candidates for the nationwide and local elections, disqualified the majority of the reformist candidates for the seventh parliamentary election held on 20 February 2004. The following new domestic policy was characterised by sabotage of the continuation of reforms, weakening the rapprochement with the West, and preparing for a tougher stance against the foreign policy of the United States. Domestically, the dissatisfaction with the reformist president not fulfilling his agenda discouraged many Iranians and the youth from participating in the Iranian local election in February 2003.

The phase of an intensified EU-Iran dialogue was therefore halted in 2005 after Iran had declined to participate any further in the human rights dialogue in the last year of Mr Khatami's presidency in 2004. Under the presidency of Mahmoud Ahmadinejad (2005-2013), who had the full support of the hardliners, Iran refused to fully cooperate with the IAEA with a united political voice. Hence, already in September 2005, the IAEA board of governors reported the non-compliance of Iran with the NPT Safeguard Agreement. This was another turning point in the deterioration of relations between the EU and Iran. As the power of the reformists was fading, the earlier improved relations with the EU gradually weakened. Moreover, the Bush administration imposed new sanctions on Iran in 2005, which were to be intensified under Barack Obama's presidency.

In September 2010 as well as in May and November 2011, US President Barack Obama issued various Executive Orders aimed at blocking the property of a number of Iranian officials for alleged human rights abuses, and at authorising the implementation of sanctions on the provision of goods, services, technology, or support for Iran's energy and petrochemical sectors respectively. On 5 February 2012, President Obama issued an Executive Order blocking the property of Iran's government and Iranian financial institutions.

Because of the EU being the largest trading partner of Iran, the only solution to put ample pressure on Iran was to stop Europeans doing business with Iran through intensified sanctions. Therefore, on 30 January 2012, the Council of the European Union issued a press release notifying the extension of previous sanctions and new stringent sanctions on 442 entities including the Central Bank of Iran, 72 of which were designated by the UN. These sanctions were implemented first of all to constrain Iran's development in its nuclear and missile programmes; secondly, they were concerned with the human rights issues that had deteriorated since the large protests and government crackdown following the presidential election in 2009.

In 2011, total EU-28 exports to Iran stood at its highest level of USD 14.5 billion. On 23 March 2012, the EU implemented an EU Council Regulation regarding Iran's nuclear programmes, which tightened previous sanctions and embargoes, and targeted the Central Bank of Iran and other financial institutions. These sanctions were followed by independent regulations introduced by the United Kingdom and Canada. In the end, all Iranian banks were disconnected from SWIFT (Society for Worldwide Interbank Financial Telecommunication) transactions, which severely paralysed Iranian international trade. In 2012 and 2013, EU exports to Iran dropped dramatically to USD 9 and 7 billion, respectively.

Iran attempted to rebuild relations with the EU when the moderate Hassan Rouhani was elected President of the Islamic Republic in 2013. His moderate and technocratic cabinet continued negotiations with the EU to relieve Iran from the international sanctions that crippled its economy, in return for limiting its nuclear activity to a verifiable and peaceful one under the NPT. The marathon of negotiations between Iran and the so-called P5+1 (five permanent members of the United Nations Security Council – China, France, Russia, United Kingdom, United States – plus Germany) and the European Union could be considered as a historic landmark in modern international diplomacy. Finally an agreement on a Joint Comprehensive Plan of Action (JCPOA) was reached in Vienna on 14 July 2015. With the JCPOA being implemented on 16 January 2016, the Islamic Republic of Iran indicated its willingness to start a new relationship with the West. The agreement was also endorsed by the UN Security Council showing the political commitment between Iran and other signatories.

2.5. THE CURRENT US WITHDRAWAL FROM THE JCPOA

2.5.1. Reasons for the US withdrawal

However, on 4 May 2018, President Donald Trump unilaterally withdrew the US from the JCPOA with Iran. This happened despite the regular inspections by the International Atomic Energy Agency (IAEA) of Iranian nuclear sites, which had certified Iran's compliance with the 2015 deal. Many experts in the field and European allies of the US had made extensive efforts to convince Mr Trump to stay in the deal, arguing that no better alternative could possibly replace it.

The conditions under which the JCPOA was signed, during the tenure of previous US President Barack Obama, had been quite different. On the one side, Iran – fearing a serious economic breakdown – was attempting to alleviate the sanctions pressure. Meanwhile, the EU and the US were looking for a peaceful and long-term diplomatic solution with Iran. However, Mr Trump believes that by nullifying the JCPOA he can achieve a 'better' deal.

Attempting to concretely ascertain Mr Trump's motives is not always easy, and the decision to withdraw from the JCPOA is no exception. Broadly, one can find six reasons for the move. First, Mr Trump's decision appears to have partly been based on intelligence provided by the Israeli Prime Minister Benjamin Netanyahu that Iran had lied about nuclear weapons before the deal.¹⁴ Second, Mr Trump was known to be unhappy with the sunset clause of the JCPOA, which indicates that some of the restrictions imposed on Iran's nuclear programme will expire in 2025.¹⁵ Third, Mr Trump wanted inspections of Iranian military facilities suspected of nuclear activities to be permitted.¹⁶ Fourth, Iran's military and advisory support to the Assad government in Syria, Hezbollah (a strong political party controlling militia in Lebanon), Houthi rebels in Yemen, and in general its alleged role as a sponsor of terrorism. Fifth, a desire to show solidarity with US allies in the region, especially Saudi Arabia and Israel.

¹⁴ <https://edition.cnn.com/2018/04/30/middleeast/netanyahu-iran-nuclear-program/index.html>

¹⁵ <https://www.foreignaffairs.com/articles/iran/2017-10-03/iranian-nuclear-deals-sunset-clauses>

¹⁶ Under the terms of the deal, inspectors are allowed to visit military facilities suspected of being involved in the development of nuclear weapons, but with 24 days' notice.

A sixth possible reason is a desire for regime change in Iran. This has been stated by Mike Pompeo, the new US Secretary of State, several times¹⁷, and has been given even greater impetus by the appointment of John Bolton as National Security Advisor. Mr Bolton is closely linked to the Iranian political opposition and a militia organisation called the People's Mojahedin Organisation of Iran (MEK).¹⁸ He believes that a revolution is plausible in Iran if sanctions depress living standards.

Few if any of these reasons stand up to close scrutiny. First, the claim that Iran lied about its programme was later rejected by Federica Mogherini¹⁹, the High Representative of the European Union for Foreign Affairs and Security Policy. On 1 May 2018, the IAEA said in a statement²⁰ that 'although some activities (in the production of nuclear material) took place after 2003, they were not part of a coordinated effort'. Second, while the JCPOA agreement was envisaged for the next 10-15 years, it does not suggest that Iran will be allowed to make a nuclear bomb afterwards. Nullifying the deal now would immediately enable Iran to build a nuclear bomb, and without inspections. Third, based on the deal, the IAEA can inspect any suspected facilities in Iran. On 5 March 2018, Yukiya Amano²¹, IAEA Director General, emphasised Iran's compliance with the deal in all respects. Fourth, following the US withdrawal from the agreement, Iran will likely be even more aggressive in supporting allied groups in the region, and threatening the interests of the US and its allies.

2.5.2. Political and economic consequences for the Iran

The political fallout is likely to be significant from the Iranian perspective. Pushing for regime change is a very dangerous game. Another situation like Syria, or a non-democratic regime like that in Egypt and Libya, could emerge. Moreover, hardliners in Iran could now be convinced that a nuclear weapon will give them a bargaining chip in response to the US, particularly as this appears to have worked in the case of North Korea.²² Mr Trump's decision has given hardliners within Iran the upper hand. They can now push their agenda and persuade Iranians that overall US policy regarding Iran was only a deceptive conspiracy to effectively halt Iran's atomic activity by cementing its sophisticated nuclear facilities and by then exporting almost all of its enriched uranium and heavy water.

The economic fallout will also be negative, and the domestic economy is already suffering. Unrest and protest on the streets of many cities in January 2018, and a very sharp depreciation of Iran's currency since March 2018, are two recent indications of this. With the ongoing depreciation of the currency, Iranians have become much poorer, and due to dollarisation, Iranians have rushed to convert money into foreign exchange. This in turn results in a reduction in investment in the productive sector, and further economic downturns.

The implications for external trade could also be significant, although Iran has managed to diversify its export markets in recent years, which will cushion some of the blow. After the EU had introduced

¹⁷ <https://www.ft.com/content/53e83112-2792-11e8-b27e-cc62a39d57a0>

¹⁸ <http://foreignpolicy.com/2018/04/30/bolton-iran-mek-terrorism-trump/>

¹⁹ <https://ec.europa.eu/avservices/video/player.cfm?ref=1154333&lg=INT&sublg=none>

²⁰ <https://www.iaea.org/newscenter/pressreleases/statement-on-iran-by-the-iaea-spokesperson>

²¹ <https://www.iaea.org/newscenter/news/iran-is-implementing-nuclear-related-jcpoa-commitments-director-general-amano-tells-iaea-board>

²² <https://foreignpolicy.com/2018/05/08/the-north-korean-playbook-wont-work-with-iran/>

sanctions regarding Iran's nuclear programme on 23 March 2012, Iran's total exports dropped by 32%, which also resulted in a deep recession in 2012-2013. Following that, however, China, India, South Korea, and Turkey gradually gained a greater share in Iran's trade (see Chapter 5 on Trade). Because Iran was cut off from SWIFT transactions, it started to barter with these trading partners. For instance, in 2012 Iran started to import gold and precious metals from Turkey and the United Arab Emirates, worth around 16% of its total imports.

Foreign investment may also be affected, although here again Iran has been fairly successful in diversifying the sources of inflows. As the US did not initiate a trade or investment relationship (except for Boeing, which will most probably be stopped) with Iran after the sanctions had been lifted, its withdrawal from the deal might not have any significant impact on Iran's economy in this respect. However, US sanctions will have serious consequences for non-US companies doing business with Iran if no counter solution is found. Because of the sanctions, no greenfield investment project in Iran was announced in 2012. However, large investment projects were pledged after the deal (projects worth EUR 10.7 billion, 3% of GDP, were announced in 2016), but fearing US penalties they have not yet been fully realised. Iran has also made efforts to diversify the source of its inward foreign direct investment more to the East in order to avoid vulnerability against sanctions (see Section 5.5 on FDI). Large investment projects in infrastructure have come from Chinese, Indian, and Korean firms.

The return of sanctions would also hamper efforts to achieve more fundamental reforms of the Iranian economy. Engagement with the international community instead of isolation could help Iranian society, the economy, and the government to evolve during a reform phase. Iran still needs a lot to reform in its economic, social, and political spheres. Iranians were aware of the benefits that further international engagements might bring. For instance, membership in the World Trade Organisation (WTO) would ensure transparency in the implementation of trade policy measures and reduction of corruption at the border, something that Iran badly needs. Connection to SWIFT transactions and the international financial system, requiring Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) frameworks, is another example of integration into the global economy. This could extensively reduce money laundering activities in Iran. Iran accepted international law by signing the JCPOA, which could make Iran more reliable in further engagements with international partners.

2.5.3. The EU now has a very important role to play

The United States is still important, but it is not the only game in town. Iran has for some time been seeking better ties with the EU, which has already brought clear progress. It has also established better relations with two other signatories of the JCPOA, Russia and China.²³ Iran has already gained observer status in the Eurasian AML/CFT group, and on 17 May 2018 signed a free trade agreement with the Eurasian Economic Union.²⁴ Furthermore, investment projects pledged by Asian companies indicate that Iran will continue undertaking economic and financial reforms in order to get in line with international regulations.

²³ <https://www.bloomberg.com/news/articles/2018-05-10/iran-s-door-to-the-west-is-slamming-shut-and-that-leaves-china>

²⁴ <http://www.eurasiancommission.org/ru/nae/news/Pages/17-05-2018-1.aspx>

The role of the EU now looks to be particularly important from the Iranian perspective. Talks will continue with the EU for now.²⁵ However, the EU is itself facing pressure from the US side with Mr Trump's 'America First' rhetoric, specifically in trade, with the Trump administration having imposed new tariffs on the imports of steel and aluminium (the EU has been granted a temporary reprieve). Donald Tusk, President of the European Council, tweeted on 8 May, 'Policies of Donald Trump on Iran Deal and trade will meet a united European approach. EU leaders will tackle both issues at the summit in Sofia next week.'²⁶

An EU withdrawal from the deal would be a mistake. More than one and a half decades of diplomacy would be destroyed, and Iran would be free to act as it desires by withdrawing from the NPT Safeguard Agreement, as it did once before in 2005. After the US withdrawal from the deal, Mr Rouhani reiterated Iran's commitment to the deal²⁷ without the US, and asked his diplomats to negotiate the possibility of continuing it with other signatories. However, Ayatollah Ali Khamenei, the Supreme Leader of Iran who has the final word, is sceptical about European powers remaining in the deal.²⁸ Most importantly, he warned that Iran may restart its nuclear programme if European signatories of the JCPOA also pull out of the deal.

Instead, the EU could push for further negotiations with Iran, to find strategies to counteract US sanctions. A potential EU strategy (without the US) would hinder hardliners in Iran in their attempts to gain influence. A possible solution could be implementing a regulation similar to a previous EU Council Regulation²⁹ that blocks extra-territorial legislation by a third party, which could then be used to protect EU firms doing business with Iran via an application to the WTO dispute settlement³⁰ process. Other contingency measures were listed by the International Crisis Group.³¹

²⁵ https://eeas.europa.eu/headquarters/headquarters-homepage/44238/remarks-high-representativevice-president-federica-mogherini-statement-us-president-trump_en

²⁶ <https://twitter.com/eucopresident/status/993921364997361664>

²⁷ <https://www.vox.com/2018/5/8/17332830/iran-deal-rouhani-announcement-trump-netanyahu>

²⁸ <https://www.nytimes.com/2018/05/09/world/middleeast/iran-nuclear-deal-trump.html>

²⁹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996R2271:EN:HTML>

³⁰ <https://www.bourseandbazaar.com/articles/?author=54db7b68e4b0512a94d828a3>

³¹ <https://www.crisisgroup.org/middle-east-north-africa/gulf-and-arabian-peninsula/iran/185-how-europe-can-save-iran-nuclear-deal>

3. Key economic and structural indicators of the Iranian economy in a comparative perspective

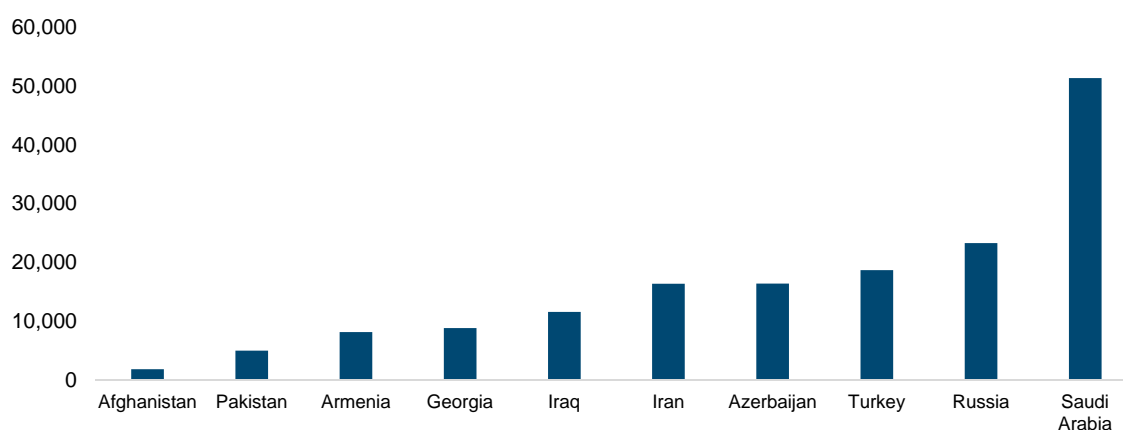
In this chapter a comprehensive picture of fundamental factors which affect long-term growth and income levels, including governance, the business environment, infrastructure, human capital, the environment and demographics is presented. We compare Iran with nine nearby countries (mostly those sharing a border). These countries are Iraq, Saudi Arabia, Pakistan, Afghanistan, Armenia, Azerbaijan, Georgia, Russia and Turkey. The latter two are countries where wiiw has particular expertise.

Based on the internationally comparable indicators we looked at – from a range of sources including the World Bank, UN, Transparency International, Yale University and Columbia University – Iran tends to be around the middle of the range of peer group countries. It is generally well above Iraq, Afghanistan and Pakistan, but often below Russia and Saudi Arabia. The indicators we looked at indicate that compared to its peers, Iran has fairly good human capital, demographic trends (at least over the next few decades), health and education levels, but problems with governance, the environment, corruption, inequality and the business environment. Many of the weaknesses are issues which depend heavily or entirely on policy decisions, which means that the route to a higher level of economic development is largely in the hands of policymakers.

3.1. LEVEL OF DEVELOPMENT

Iran's gross national income per capita (2011 prices, PPP) was USD 16,395 in 2015 according to the UNDP. This put Iran among the countries ranked as 'high human development' states. In the peer group on this measure, Iran is 5th out of 10 countries, although well behind Saudi Arabia, which had a comparable per capita GDP level of USD 51,320 in 2015.

Figure 6 / Gross national income per capita, 2011 prices, PPP, 2015 data

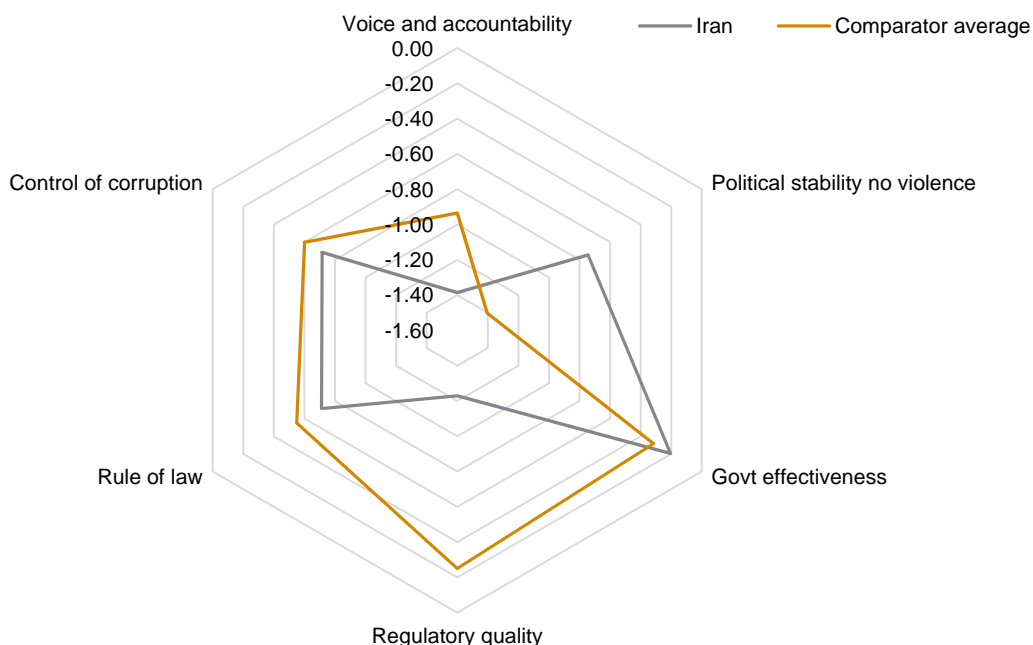


Source: UNDP.

3.2. GOVERNANCE

In general, Iran scores quite badly compared with its peer group on the World Bank's governance indicators. For voice and accountability, control of corruption, rule of law and regulatory quality Iran is below the peer group average. There is a particularly big gap on regulatory quality, not only because of Iran's weakness, but because on this indicator many of the peer group score quite strongly, especially Armenia, Georgia, Turkey and Saudi Arabia. Iran scores slightly higher than the peer group for government effectiveness, and much higher for the political stability/no violence indicator. On latter, many of peer group score badly, especially Iraq, Turkey, Afghanistan and Pakistan. Iran has been relatively immune from the high level of political volatility seen across much of the region over the past decade.

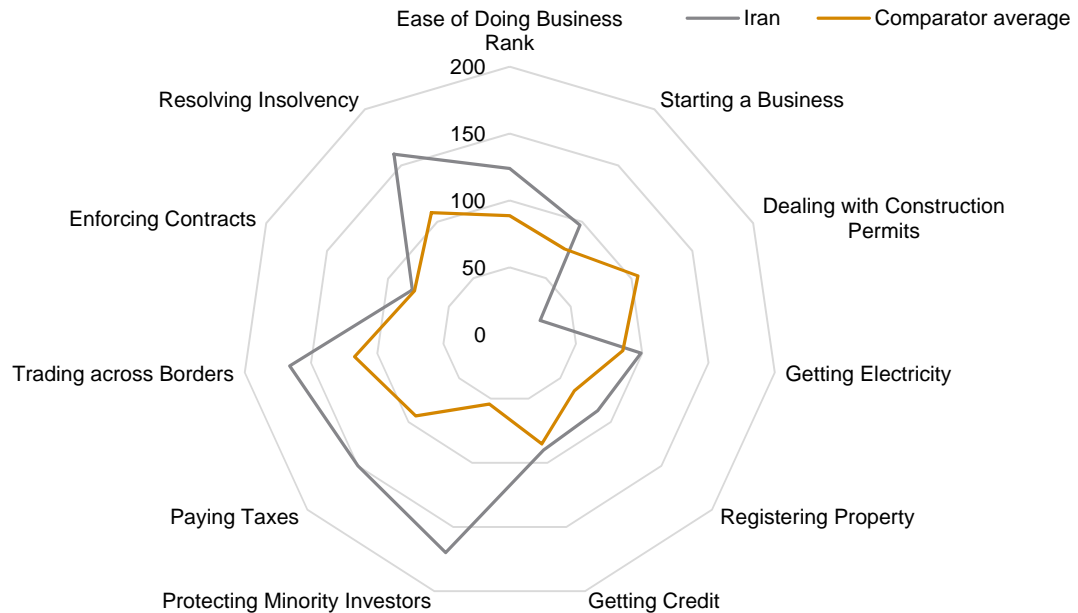
Figure 7 / World Bank governance indicators, 2016



Source: World Bank.

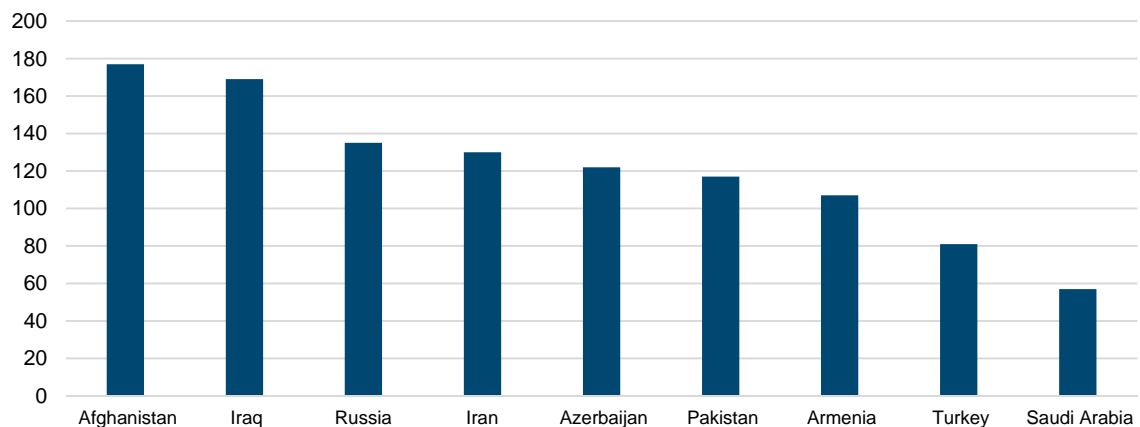
3.3. BUSINESS ENVIRONMENT

According to the World Bank Doing Business index, Iran scores badly relative to most comparator countries, which suggests that the business environment is weak. Of the 11 main categories assessed by the World Bank, only on one – dealing with construction permits – is Iran notably better than the peer group average (on some others such as getting credit or enforcing contracts it is roughly in line). Compared to regional peers, Iran appears to be particularly bad at protecting minority investors, the environment for paying taxes, trading across borders and resolving insolvency (Figure 8).

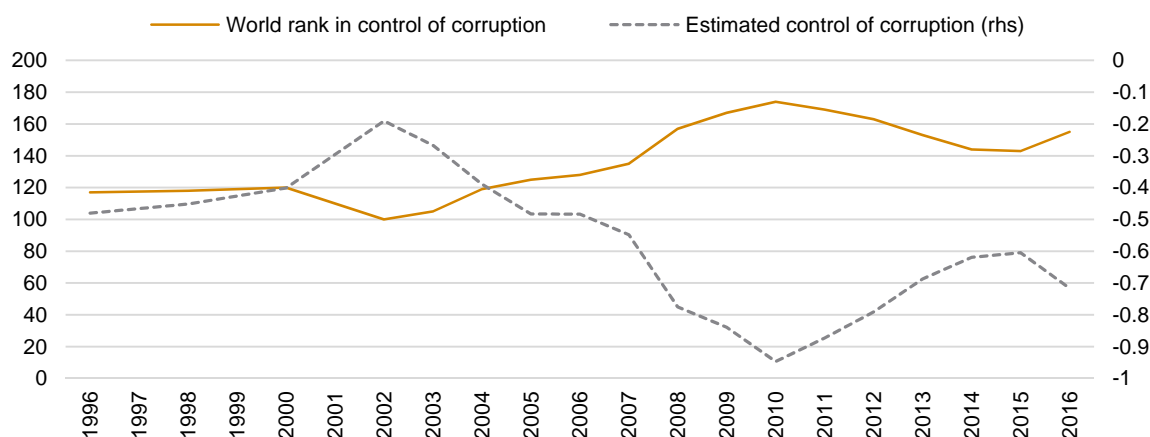
Figure 8 / World Bank Doing Business Rankings, 2017

Source: World Bank.

Iran also appears to be very corrupt, which is a further negative for the business environment. The country came 130th in the world in Transparency International's 2017 Corruption Perceptions Index (Figure 9). Even in the context of a generally corrupt group of peer countries, Iran's score was worse than the average rank of 120. According to the control of corruption estimates in the World Bank's World Governance Indicator (WGI), level of corruption increase from 2002 to 2010 (see Figure 10). Iran's position in the world ranking for control of corruption fell from 100th in 2002 to 174th in 2010. Although it has improved somewhat since, Iran's rank remains significantly worse than during the 1990s and early 2000s.

Figure 9 / Corruption perceptions index 2017, global rank

Source: Transparency International.

Figure 10 / Development of corruption in Iran, 1996-2016

Source: World Governance Indicator (WGI) of the World Bank.

3.4. INFRASTRUCTURE AND COMMUNICATIONS

According to the World Bank's Logistics Performance Index (LPI), Iran is fourth out of nine of the peer countries³². Its average score is almost exactly in line with the unweighted average of peer countries. Iran's scores for individual components of the index are also generally in line with peers, although it is slightly better than the average for infrastructure, and slightly worse for timeliness (Figure 11). Interestingly, Iran is not only behind Saudi Arabia and Turkey, but also Pakistan, in the index.³³

Iran's infrastructure position could improve substantially in the coming years, given its central role in China's Belt and Road Initiative (BRI). The fact that Iran lies on the quickest route between China and Europe gives it important strategic importance from a Chinese – and European - perspective (the Chinese also appear to value Iran as an alternative to Russia in moving goods to Europe). However, this has created fears in Iran of a dangerous level of Chinese influence over the country.³⁴ Iran has received large amounts of funding from China recently, largely for the purpose of infrastructure investment.³⁵

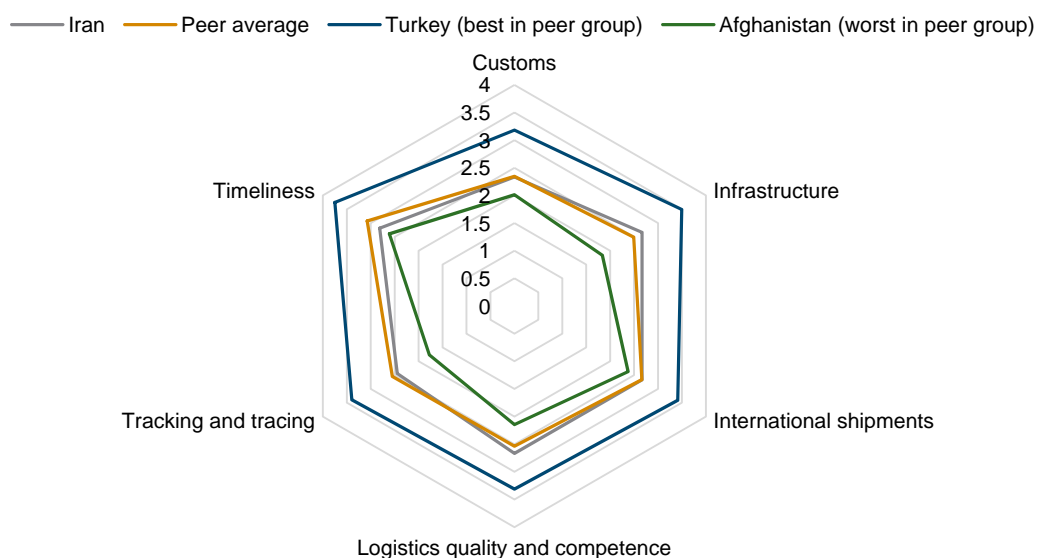
Meanwhile regarding communication, a useful indicator is internet usage. 44% of the population use the internet according to the UNDP, which puts Iran below the average in the peer group (47%). However, this average is weighed down by low levels for Iraq, Pakistan and Afghanistan (all below 20%). Otherwise, Iran is quite far behind most of its peers on this measure (Figure 11).

³² Data for Azerbaijan are not available for this indicator.

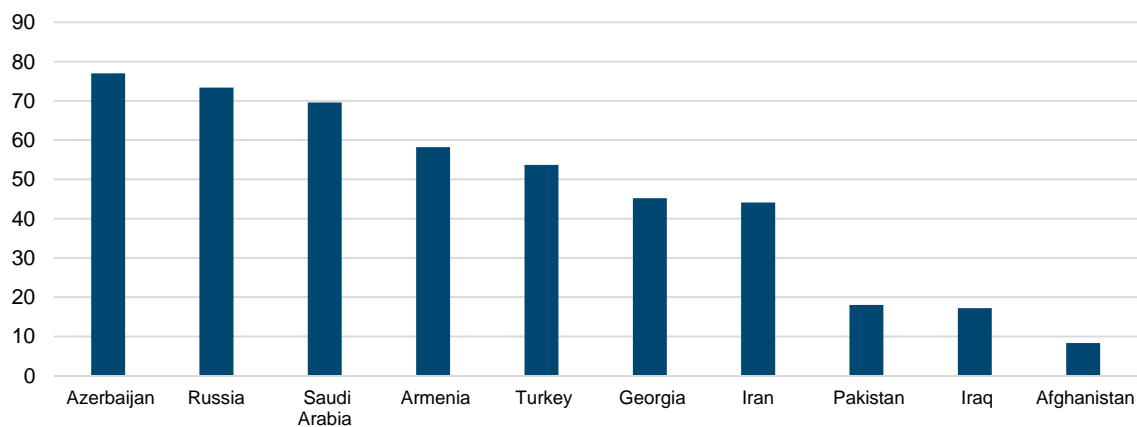
³³ Pakistan has invested heavily in infrastructure in recent years, promoted heavily under the leadership of former prime minister Nawaz Sharif. The USD 46 billion China-Pakistan Economic Corridor (CPEC) was a key part of this. However, the benefits of at least some of these projects have been questioned, and they have contributed to a potentially unsustainable increase in public debt (see: <https://www.economist.com/news/asia/21715032-government-building-more-airports-roads-and-railways-even-though-existing-ones-are>)

³⁴ <https://www.nytimes.com/2017/07/25/world/middleeast/iran-china-business-ties.html>

³⁵ <http://www.scmp.com/news/china/diplomacy-defence/article/2122435/china-pumps-billions-iranian-economy-western-firms-hold>

Figure 11 / World Bank Logistics Performance Index (LPI), 2016

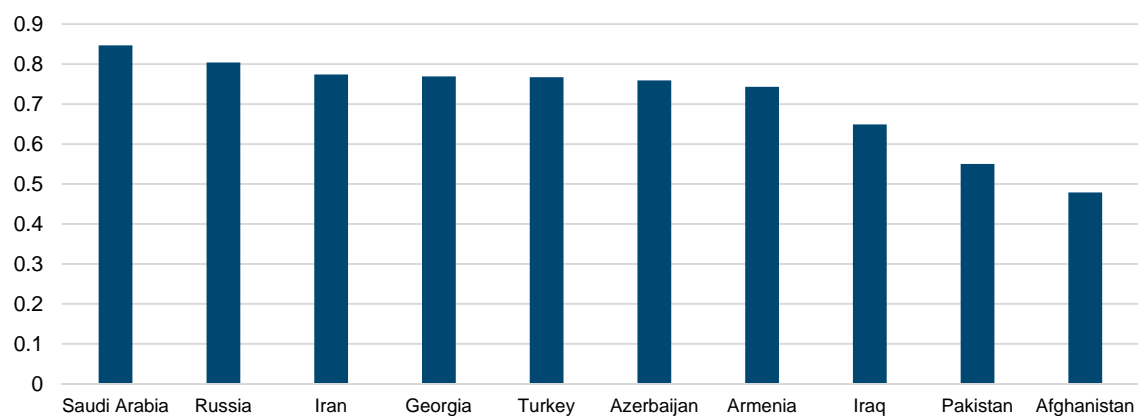
Source: World Bank.

Figure 12 / Internet users, % of population, 2015

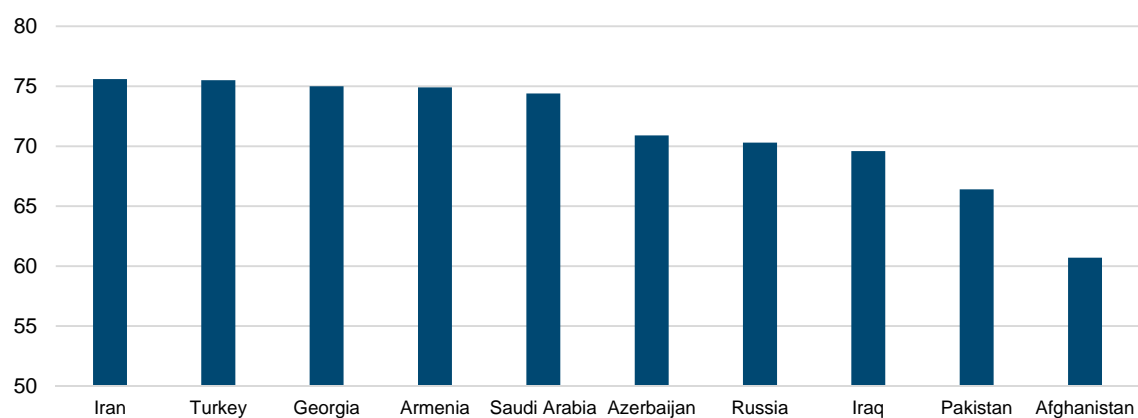
Source: UNDP.

3.5. HUMAN CAPITAL

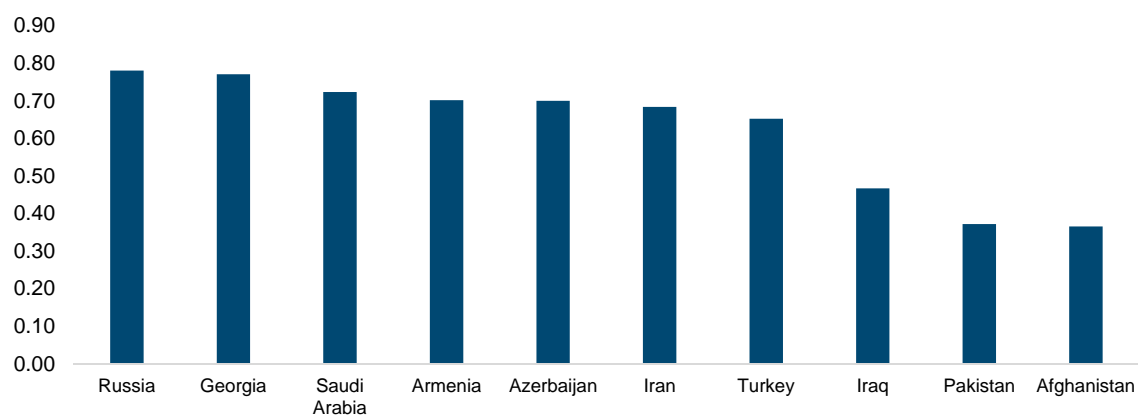
According to the UNDP's headline human development index, Iran is third among peer countries after Saudi Arabia and Russia (Figure 13). This relies in particular on the fact that Iranians have the highest life expectancy (75.6 years) among the ten countries (Figure 14), and the third highest expected years of schooling (14.8, behind Russia and Saudi Arabia).

Figure 13 / UNDP Human Development Index (HDI)

Source: UNDP.

Figure 14 / Life expectancy at birth, years

Source: UNDP.

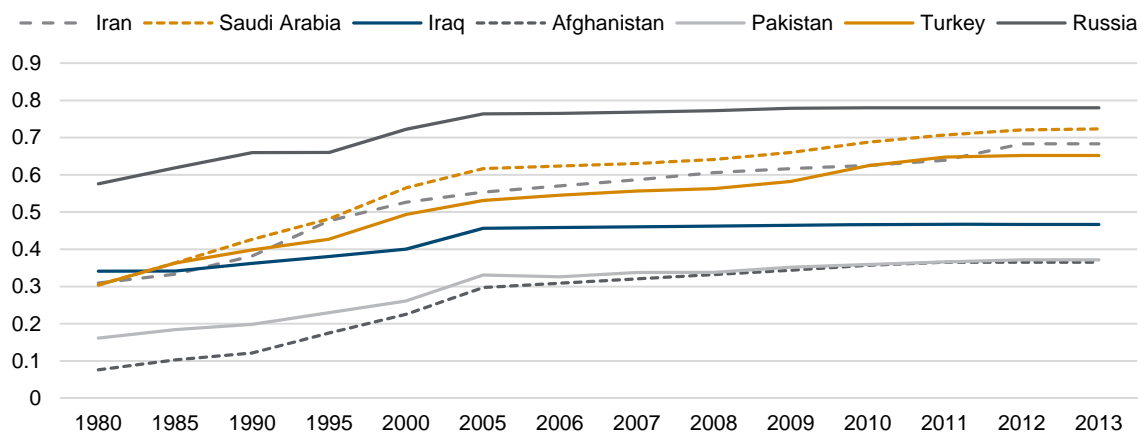
Figure 15 / UNDP education index, 2013

Source: UNDP.

Based on the United Nations Development Programme (UNDP) education levels index, Iran is slightly above the simple average of comparator countries, and notably scores higher than Turkey (2013 data). However, overall it is sixth highest among the ten countries (Figure 15). There has been a visible improvement in Iran's score since 1980, both in absolute terms, and compared with peer countries (Figure 16). Having stood at roughly the same level as Iraq in 1980, Iran's score is now substantially higher, and it has closed most of the gap with Russia (which is the clear leader among the countries included in the sample).

According to the World Bank's WDI, Iran's net secondary school enrolment rate as of 2015 was 72.5%, almost exactly in line with the region average (data for Azerbaijan and Russia on this indicator are unavailable). However, Iran's net enrolment was 10 percentage points lower than in 2012.

Figure 16 / UNDP education index development, 1980-2013



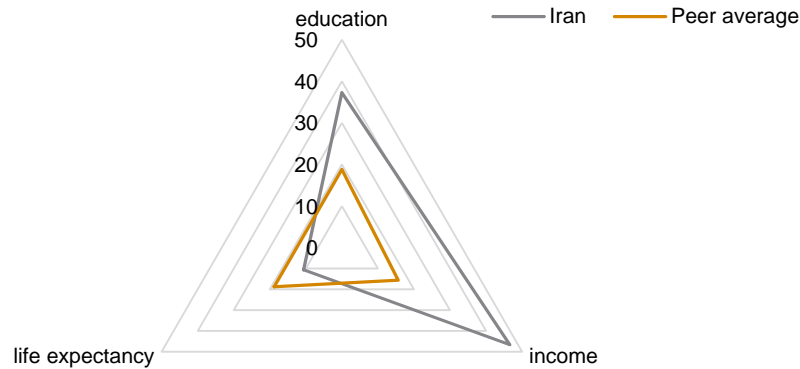
Note: Armenia, Azerbaijan and Georgia excluded due to lack of historical data.

Source: UNDP.

Despite the high life expectancy, the health situation in Iran appears to be fairly average in the peer group context. On the UNDP health index, Iran comes around the middle of peer countries (5th out of 10). However, it is quite a bit higher than the simple average of the nine peer countries, as a result of particularly low scores in the index for Afghanistan, Pakistan and Russia.

In terms of life expectancy (calculated by the UNDP as an index score), Iran has developed in a very positive way over recent decades. Since the 1980s, Iran has scored the biggest improvement in the index in percentage terms among peer countries, and the second highest in absolute terms after Afghanistan. In the global context, the development has been particularly impressive. Iran has gone from being rated between low and medium human development countries in 1980, to being among high development countries now. The main positive jump occurred between 1985 and 2000.

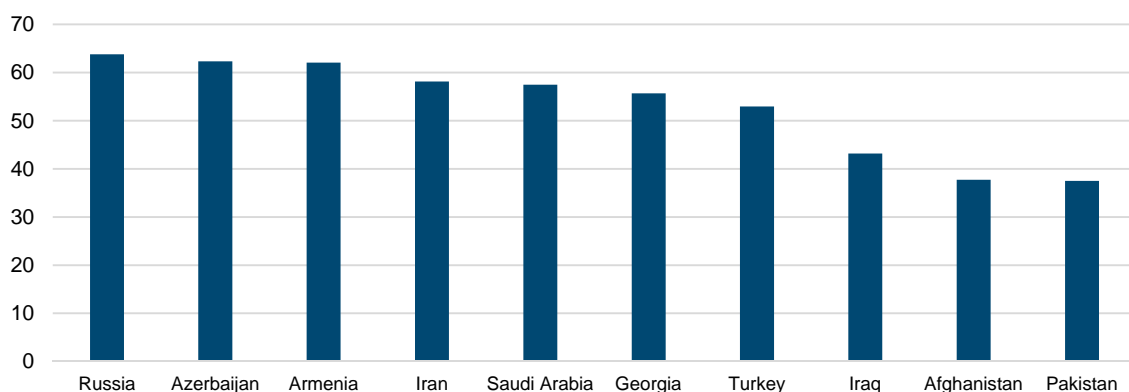
However, while health and education appear to be of a fairly high level in the peer group comparison, inequality in Iran also appears to be generally high, which suggests that not all have access to the health and education on offer. Iran has very high income inequality compared with all peers, and is among the highest in education (Figure 17). However, inequality is low in the peer group for life expectancy, which could suggest a more equitable access for the population to healthcare.

Figure 17 / UNDP inequality indices, 2015

Source: UNDP.

3.6. ENVIRONMENT

The quality of the environment can have an important impact on an economy's performance.³⁶ It also affects the health of the population and therefore the human resources available to the economy. According to the Environmental Performance Index, compiled by Yale University and Columbia University, Iran is slightly above average among peer countries (Figure 18). It is below Russia, Azerbaijan and Armenia, but far ahead of Iraq, Afghanistan and Pakistan.

Figure 18 / Headline EPI, 2018

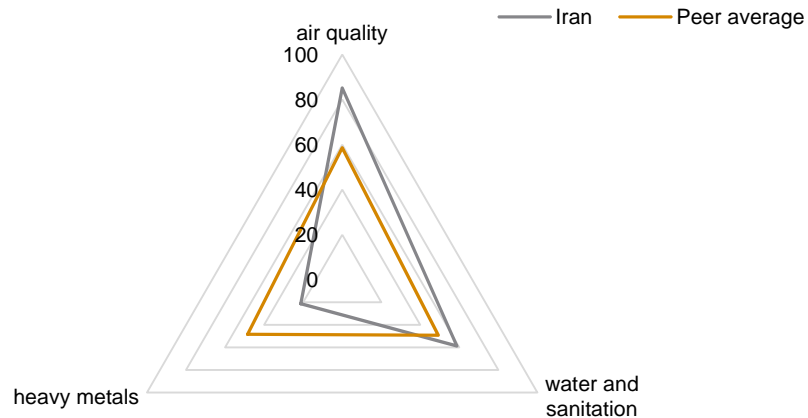
Source: Environmental Performance Index (EPI).

The EPI is split into two broad areas: environmental health and ecosystem vitality. Iran is quite strong versus the peer group on environmental health (second behind Russia), but much less good on ecosystem vitality. Within the environmental health indicator, Iran scores particularly strongly versus peers on air quality and water and sanitation, but is very weak on exposure to heavy metals (Figure 19).

³⁶ <https://www.weforum.org/agenda/2014/08/natural-capital-accounting-sustainability-growth/>

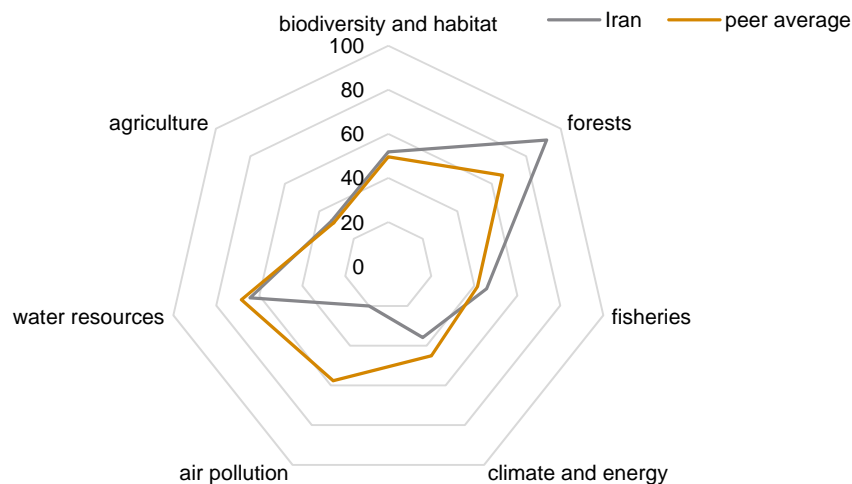
Within ecosystem vitality, Iran is good on forests, but bad on air pollution, and otherwise roughly in line (Figure 20).

Figure 19 / EPI environmental health indicator breakdown, 2018



Source: EPI.

Figure 20 / EPI ecosystem vitality breakdown, 2018



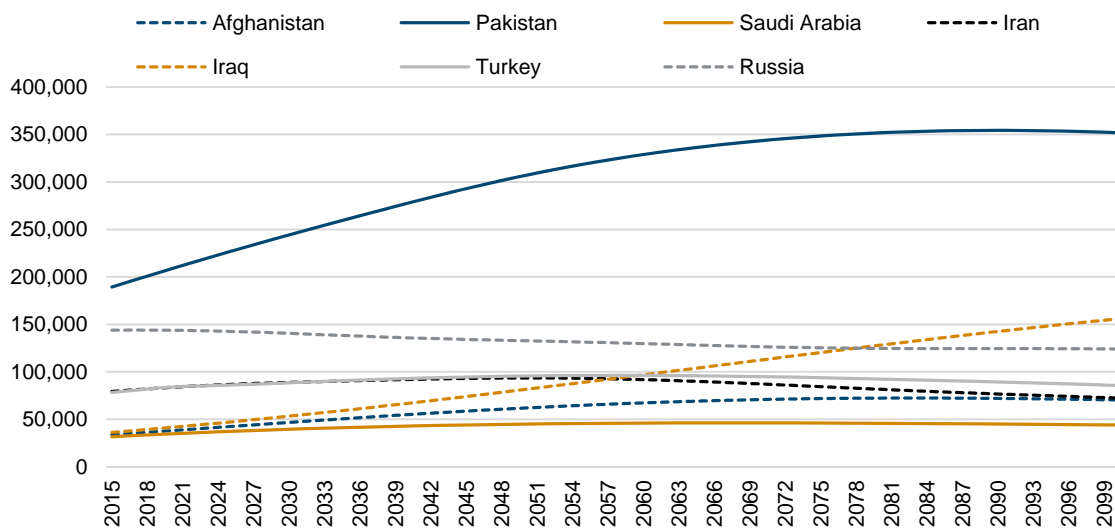
Source: EPI.

The fact that Iran scores well on air quality, but badly on air pollution, is potentially confusing. However, it is explained by the fact that influence on the air quality score of Iran's good rating for the 'household solid fuels' sub-indicator (which uses a measure of lives lost due to incomplete combustion of solid fuels). On this point, Iran ranks 37th in the world, only two places behind Germany. However, for the other two sub-indicators of the air quality indicator – particle pollution (PM) exposure and exceedance – Iran scores badly, at 104th and 112th in the world, respectively. The general picture from the indicators appears to be that Iran has a problem with pollution.

3.7. DEMOGRAPHICS

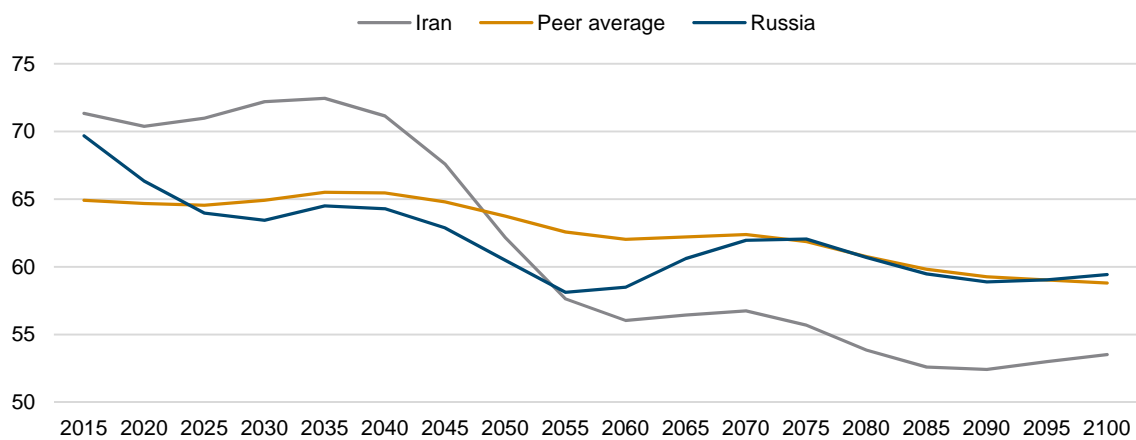
Iran's population is around 80 million, a very similar level to Turkey. It is considerably smaller than Pakistan (189m) and Russia (144m), but much bigger than other peers (Saudi Arabia, Iraq and Afghanistan are all in the 30-40m range). The population of Iran has grown very quickly in the past seven decades, having stood at 17m in 1950. This represents an increase of 364% over the period, compared with 266% for Turkey and 40% for Russia. According to UN projections, the Iranian population will peak at around 94m in 2050, and then gradually fall (Figure 21). It will be overtaken by Iraq around the same time. Of the big peer countries, only Russia will have a worse population trajectory during the 21st century according to the UN.

Figure 21 / Population projections, millions



Source: UN.

In terms of age structure, Iran currently has a clear advantage over the peer group (Figure 22). As of 2015, 71% of the Iranian population were aged between 15 and 64 (i.e. of working age), compared with 65% for a simple average of the peer group, and 56% in Iraq. This share will start to fall from around 2035, although Iran will continue to have an advantage versus peers until around 2050. However, thereafter the working age share will fall significantly. Starting from a similar position to Russia, the share of the working age population in Iran will actually fall more quickly up to 2100, which is notable considering that Russia is considered to be a country with a particularly problematic demographic outlook.

Figure 22 / Share of population aged 15-64

Source: UN.

4. Iran's macroeconomic environment and challenges

As discussed in Chapter 2, Iran's economic performance over the past several decades has been rather dismal: oil production and exports have been at best stagnant, real GDP per capita has never reached its historical peak of 1976, and the economy has been adversely affected by the Western sanctions in a number of ways. Although there have been a few instances of double-digit GDP growth (notably in 1990-1991 and most recently in 2016, following the JCPOA-related relief of sanctions), on several occasions the economy slid into recession. At least to some extent, economic problems have been also related to the demographic developments: population has grown strongly and faster than the labour market could absorb, resulting in unemployment rates in excess of 10%. Unemployment would probably have been even higher, had it not been for the low activity rate, hovering below 50%.

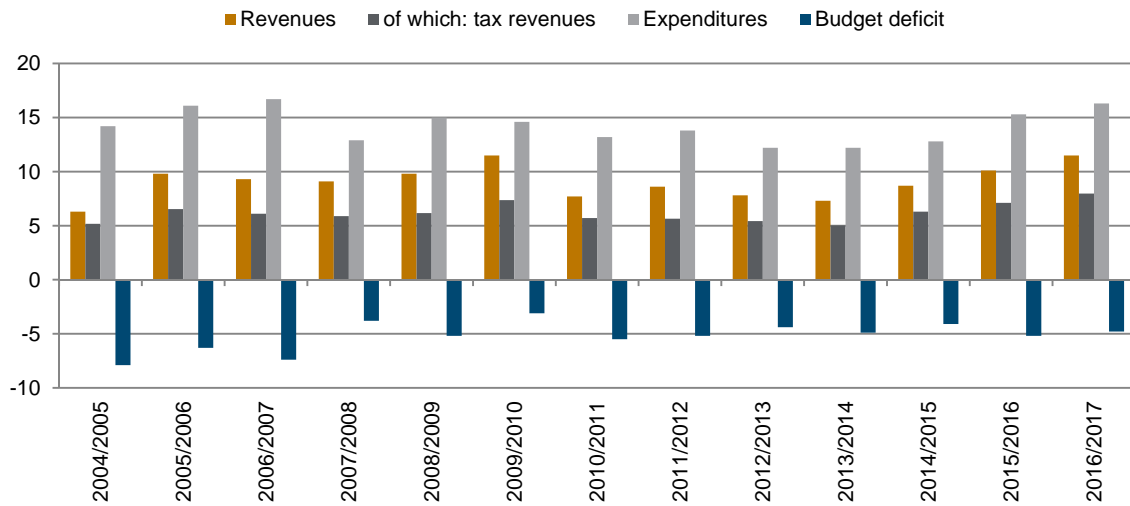
This chapter addresses the main macroeconomic issues facing the Iranian economy: fiscal policy and the role of the sovereign wealth fund(s), external balances and exchange rate management, as well as the monetary policy regime.

4.1. FISCAL POLICY

Iran has a history of high budget deficits, which often reached, and on several occasions exceeded, 5% of GDP – see Figure 23. The main reason for this lies arguably on the revenue side, specifically the low government ability to raise taxes. Tax revenues stand at only 8% of GDP, partly because of the numerous tax exemptions. Generally, the role of the government in the economy – at least when measured by the share of state expenditures in GDP (16.3% in 2016/17) – is low, lower than in the advanced countries and the former communist countries of Central and Eastern Europe. At the same time, the government directly controls large parts of the economy, including the crucial oil sector (for more on that see Section 4.6).

However, the history of high budget deficits has not translated into excessive public indebtedness in Iran. At the end of 2016/17, the public debt to GDP ratio in Iran stood at 49.1% – a reasonable level for a country at Iran's development level. In the short run, the planned bank recapitalisation could drive the public debt to GDP ratio to 54%, according to IMF estimations. The Sixth National Development Plan envisages a medium-term public debt ceiling of 40% of GDP.

The main reason why Iran's persistently high budget deficits have not resulted in a higher public debt to GDP ratio has been the strong growth of nominal GDP, mostly on account of high (mostly double-digit) inflation. The latter has been largely due to the policy of budget deficit 'monetisation' by the Central Bank of Iran (CBI), which is not entirely independent of the government. On the positive side, the policy of deficit monetisation has enabled to keep the burden of interest payments on public debt at negligibly low levels: in the range of 0.1-0.2% of GDP.

Figure 23 / Central government budget, % of GDP

Source: Central Bank of Iran (CBI).

The IMF advocates a 'securitisation' of public debt held by the CBI, emphasising the importance of a functioning debt market for monetary policy effectiveness. However, it also acknowledges that this would lead to a sharp rise in the interest rate paid on public debt, to 4.8% of GDP according to IMF projections.³⁷ This would divert a substantial share of government resources from other essential spending items, such as infrastructure investments and social spending.

4.2. SOVEREIGN WEALTH FUND

Following the examples of many other resource-dependent economies (among others Norway, Russia, Kazakhstan, Venezuela, Saudi Arabia, Oman, UAE, Nigeria, and Chile), Iran has established a Foreign Currency Reserve Account, also known as the Oil Stabilisation Fund (OSF). The respective decision was taken in 2000 within the framework of the third five-year Development Plan of Iran, with the declared OSF goals being fiscal stabilisation and saving a portion of oil revenues for the future generations in the form of productive investments into the non-oil sector of the economy.

After reaching its peak in terms of accumulated funds in 2007, the OSF was however gradually depleted over the next few years as the global oil price dropped sharply. By 2011, it was officially supplemented – and effectively replaced – by the National Development Fund of Iran (NDFI). The decision on setting up the NDFI was taken under the Fifth Development Plan. Unlike the OSF, its *sole* task is to save a portion of oil revenues for future generations through productive investments; fiscal stabilisation does not feature among its goals.³⁸ The NDFI is not part of the government budget but is held on the CBI accounts on behalf of the government. To facilitate productive investments, it provides preferential credit at a general rate of 6% p.a. (or even less, depending on the sector) to selected banks, which channel

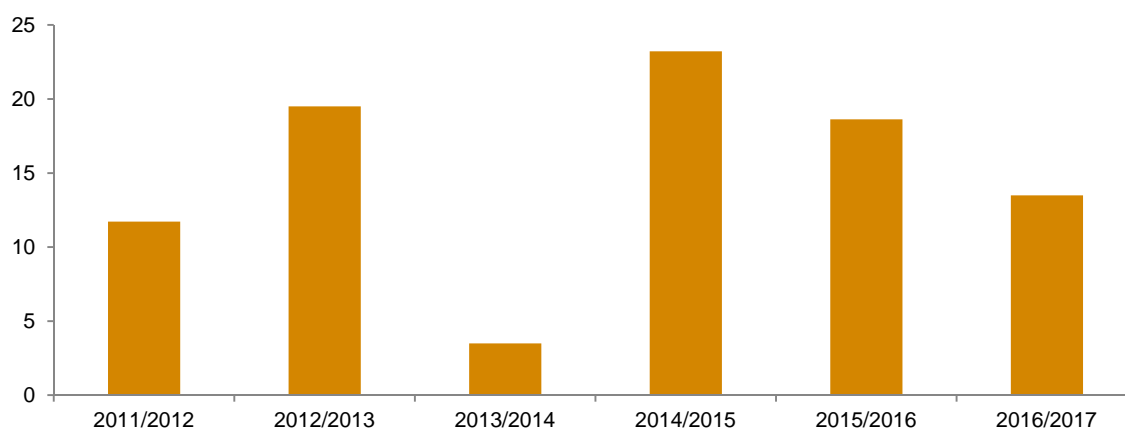
³⁷ IMF, 2018.

³⁸ <http://en.ndfi.ir/About-NDF/History>

them to private and semi-public (non-government) companies. Besides, the NDFI can also extend trade credits to buyers of Iran's products and foreign investors planning to invest in Iran.³⁹

The data situation on the operations of the NDFI is not ideal, and transparency seems to be an issue. For example, it is difficult to find data on the total balances of the NDFI, its residual savings which are not invested in projects within Iran, as well as the rate of return. Still, the NDFI website provides some statistics on the amount of funds allocated to various investment projects (Figure 24). All in all, between 2011/12 and 2016/17, some USD 90 billion was accumulated by the NDFI, which corresponds to some 20% of GDP in 2016/17.

Figure 24 / Reserves accumulated by the NDFI since its inception, in USD billion



Source: National Development Fund of Iran (NDFI).

There are several features which suggest that the NDFI is far from being a 'classical' sovereign wealth fund (akin to those implemented in many other oil-dependent economies).

First, according to the Fifth Development Plan, the NDFI receives at least 20% of the government revenues from exporting oil (including crude oil, gas condensates, as well as gas and oil products), with the share supposed to increase by 3 pp each year.⁴⁰ At present, the share of oil revenues transferred to the NDFI stands at 22.7%; 62.8% goes directly to the (central) government budget, and the remaining 14.5% stays with the National Iranian Oil Company.⁴¹ Thus, unlike in a 'classical' sovereign wealth fund, the share of oil revenues assigned to the NDFI does *not* positively correlate with the oil price, so that the distribution of oil revenues between the government budget and the NDFI during the periods of high and low oil prices is roughly the same. Clearly, given its design, the NDFI cannot perform the function of fiscal stabilisation – neither is this its official goal, for that matter.⁴²

³⁹ <http://en.ndfi.ir/About-NDF/Articles-of-Association#111628-i---the-funds--spending>

⁴⁰ <http://en.ndfi.ir/About-NDF/Articles-of-Association#111627-h---resources-of-the-fund>

⁴¹ IMF, 2018.

⁴² The function of fiscal stabilisation typically assigned to sovereign wealth funds is as follows: in good times (when commodity prices are high) the fund accumulates reserves which can be tapped during the bad periods (when commodity prices are low). In this way, the fund has a counter-cyclical impact on the economy: it helps contain an 'overheating' of the economy during the good times and provides economic stimulus during the bad times.

Second, while the NDFI may be conducive to economic development in general, its role as a vehicle of diversification away from the excessive reliance on the energy sector appears to be questionable. The energy sector (upstream and downstream sectors taken together) has accounted for the bulk of credit facilities extended from the NDFI since its inception (Table 1). Overall, since its establishment in 2011, around USD 36 billion (out of around USD 90 billion) has been allocated to investment projects via banking facilities. Until December 2017, non-energy sectors received only 20% of allocated facilities by the NDFI.

Table 1 / Announced investment facilities by economic activities financed through NDFI until third quarter of 2017/2018

Activity	USD million	Share of investment	Number of projects	Share in total numbers	Average capital investment, USD million
Oil & gas (upstream)	16,776	46.3%	11	3.4%	1,525
Power plants	4,722	13.0%	47	14.5%	100
Refineries	3,956	10.9%	5	1.5%	791
Petrochemicals (downstream)	3,213	8.9%	11	3.4%	292
Industry and mining	2,763	7.6%	158	48.6%	17
Steel	2,589	7.1%	32	9.8%	81
others	1,251	3.4%	21	6.5%	60
Cement, tile, stone, etc.	353	1.0%	32	9.8%	11
Transportation	330	0.9%	5	1.5%	66
Oil & gas (downstream)	316	0.9%	3	0.9%	105
Total	36,269	100%	325	100%	

Source: NDFI 2017/2018.

On the positive note, the function of monetary sterilisation – another ‘classical’ task typically assigned to sovereign funds, along with fiscal stabilisation – seems to be provided for by the NDFI regulations, which explicitly stipulate that ‘financial facilities ... shall be paid only in foreign currencies. Recipients of facilities are not allowed to convert the foreign currency into rial in the domestic market.’ The exceptional use of foreign exchange and the ban on converting NDFI funds into domestic currency may be the main reason for the separation of the Fund from the government budget. By keeping funds entirely in foreign exchange and prohibiting its borrowers to convert them into Iranian rial (IRR), the NDFI reduces the appreciation pressure and thus arguably mitigates the ‘Dutch disease’. However, this also means that Iranian companies which obtain preferential credits from the NDFI can only use them for transactions with abroad, such as imports and foreign debt service.

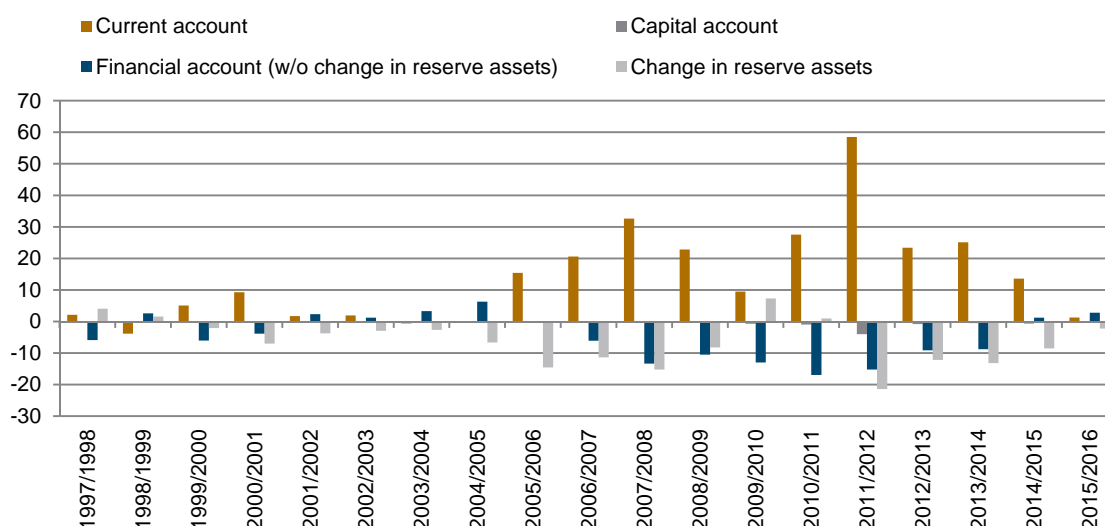
4.3. EXTERNAL BALANCES

Historically, Iran’s external position has been fairly strong (Figure 23): over the past twenty years the country has almost invariably recorded current account surpluses of the balance of payments. Most recently, the current account surplus increased from 0.3% of GDP in 2015/16 to 4% in 2016/17, helped by the lifting of nuclear sanctions, and is projected to stay at a similar level in 2017/18.

Besides, due to Iran’s long period of isolation from global financial markets, FDI and portfolio inflows have been very low over a protracted period of time. As a result, Iran’s gross foreign debt, at just 2% of

GDP, is negligibly low. Quite on the contrary, due to persistent current account surpluses, Iran has accumulated sizeable claims against the rest of the world. The financial account of the balance of payments has been mostly negative (Figure 25), implying persistent capital outflows. On top of that, foreign exchange reserves of the CBI have been generally on the rise. As a result, foreign assets of Iran's banking system, including the CBI, stand now at 50% of GDP. The foreign exchange reserves of the CBI alone reached USD 120.7 billion at the end of 2016/17, corresponding to 16 months of imports, although reportedly not all these funds can be accessed. This is because of the remaining US sanctions that have been waived since the implementation of the JCPOA in 2016 but have not been completely removed.

Figure 25 / Balance of payments, in USD billion



Note: A negative change in reserve assets corresponds to their accumulation, and vice versa.

Source: CBI.

Taken together, and in conjunction with the broader economic trends (for more on that see Section 4.6), these developments suggest that the observed strong external position of Iran is less an expression of export strength, but rather of its limited success in attracting foreign investments which has also contained import demand (i.e. mainly for capital and intermediate goods, which usually follows FDI inflows) for a protracted period of time. The progressive accumulation of foreign exchange reserves by the CBI, while increasing the country's resilience to external shocks (such as oil price collapse or new Western sanctions), has been just another form of capital flight. That is, Iran remains a net creditor of the rest of the world – despite the fact that its own development needs are huge.

4.4. EXCHANGE RATE: IS THE RIAL OVERVALUED?

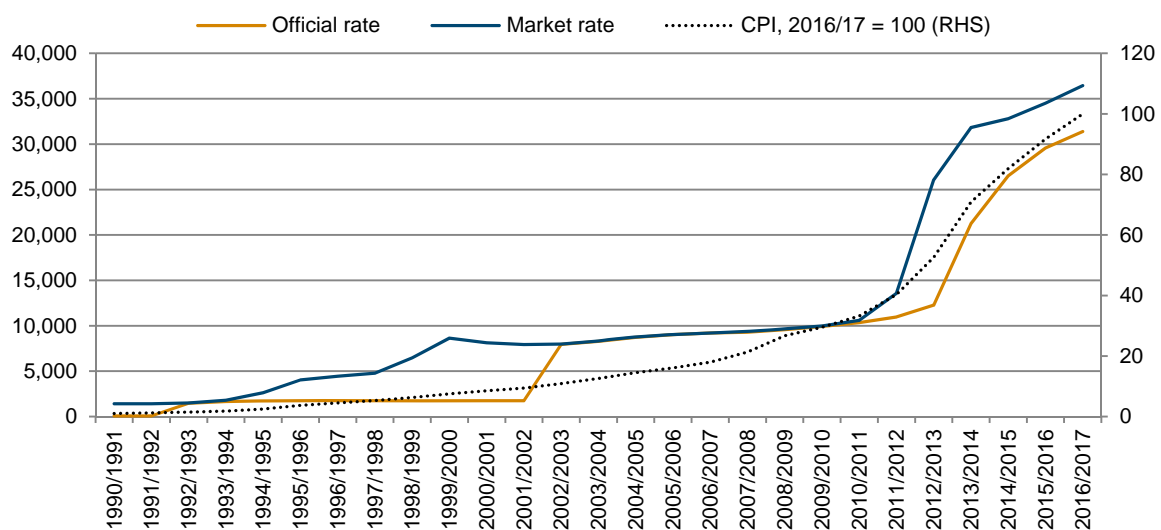
Iran used to run a system of multiple exchange rates. The official exchange rate was set administratively and was used for imports of selected goods and the conversion of oil export earnings into rial. It was stronger than the market exchange rate used for all remaining transactions: for instance, in 2016/17 the gap between the two reached on average 15.5% (Figure 26). Importing critical consumer goods at an

exchange rate stronger than the 'market' one was tantamount to effective subsidies to the tune of 1.4% of GDP, according to IMF calculations.⁴³

At the beginning of 2018, the gap between the official and the market exchange rate even climbed to 30% on the back of political instability (not least reflecting the market expectations of a looming US withdrawal from the Iran nuclear deal) and Iran's persistent inability to access export earnings from some countries. Although international sanctions against Iran were largely waived back in 2016, it still does not have full access to its international reserves, the international financial system, and SWIFT transactions via US dollars. This has resulted in effective accumulation of trade credit claims (i.e. capital outflows) financed from foreign exchange reserves of the CBI: during the two years prior to March 2018, the latter declined from 19 to 16 months of imports.⁴⁴

At the same time, the authorities have recently been undertaking steps aimed at a gradual abolition of the dual exchange rate system. As a first step, the number of goods eligible to be imported at the official exchange rate has been reduced. As of September 2017, 78% of goods categories were already imported at the market exchange rate, compared to 52% at the end of 2016/17 (although in value terms the share hardly changed and stood at around 44%). Over the past few months, further items have been removed from the priority list, such as tourism-related goods, rice, airline fuels and airplanes.

Figure 26 / Nominal exchange rate USD/IRR and CPI (2016/17=100)



Source: CBI.

In a next step, exchange rates have been unified. Initially, the unification was scheduled for February 2018, but has been delayed because of the difficulties in repatriating trade proceeds; it finally took place in early April 2018. However, the new single exchange rate – 42,000 IRR per 1 USD – has been clearly set at an artificially high level, with foreign exchange restrictions in place and the 'black market' rate approaching 70,000 IRR per 1 USD.

⁴³ IMF, 2018.

⁴⁴ To solve the problem, Iran has been increasingly switching from US dollars to euros in its oil sales contracts; since April 2018, all exports invoicing in US dollars has been officially stopped.

Given the past experience of other countries which abandoned multiple exchange rates and liberalised their markets for foreign exchange in the wake of their transition to market economy (such as the Soviet Union and other countries of the former Soviet bloc during the 1990s), any abolition of foreign exchange rate restrictions in Iran would result in a new exchange rate settling at the 'black market' rate. This would effectively imply currency depreciation – also in real terms, since the devaluation-driven spike in inflation is typically not strong enough to fully offset the impact of nominal depreciation on the real exchange rate.

The IMF supports these plans, arguing that Iran's exchange rate is overvalued, and depreciation would represent a welcome correction of this distortion. This is however questionable. As indicated above, Iran is already recording persistent current account surpluses; this implies that external competitiveness is not much of a problem – even with the presently moderate oil prices. Should oil prices pick up over the next few years, Iran's external surplus will rise further – even without exchange rate unification. Clearly, should the exchange rates be unified and the rial depreciate as a result, the external surplus would rise further on the back of reduced import demand. (On the export side, the growth of energy exports in response to exchange rate depreciation will likely be much less 'elastic'.)

Of course, one could argue that it is the external competitiveness of Iran's *non-energy* products – rather than of the economy as a whole – which is low. Indeed, the trade data provide plenty of evidence that Iran's trade balances in most product groups are negative (for more on that see Section 5). For instance, while Iran is among the top ten world's producers of passenger cars, virtually none of them are exported.⁴⁵ If the low competitiveness of Iran's non-energy products is a reflection of poor price competitiveness, for instance due to the overvalued exchange rate (the infamous 'Dutch disease'),⁴⁶ this could be an argument in favour of depreciation. However, it is questionable whether this is really the case: rather, it may be primarily a problem of poor *non-price* competitiveness and the low quality of Iranian non-energy products. That would point to the problems of competitiveness of Iran's non-energy sector being more fundamental than a mere matter of exchange rate overvaluation. Their resolution would require above all sustained investments, including most likely increased inflows of FDI and imports of investment goods. The latter might be more difficult to attain with a weaker exchange rate, which would help little in reaching the goals of modernisation and diversification of the economy away from excessive reliance on the energy sector.

4.5. MONETARY POLICY

Another standard argument put forward by the IMF in advocating exchange rate unification is that a single ('market') exchange rate could provide the badly needed credibility to monetary policy. Besides, a flexible exchange rate would be instrumental for a subsequent switch to 'inflation targeting'. Full-fledged inflation targeting essentially boils down to the manipulation of the central bank's policy interest rates with the aim of achieving a well-defined level of inflation ('inflation target').

Historically, inflation has indeed been relatively high in Iran, albeit over the past few years it has declined to its four-decade low of around 10% on an annual basis. One reason behind the persistently high

⁴⁵ <http://www.acea.be/statistics/article/top-10-car-producing-countries-worldwide-and-eu>

⁴⁶ Another reason for the low price competitiveness could be the high trade barriers facing Iran's products in its export markets: 8.9% tariffs applied on Iran's exports (compared with the world average of 2.4% – IMF, 2018) (see Box 1 on p. 51).

inflation has been the long-standing policy of monetisation of public debt by the CBI (for more on that see above). Besides, Figure 26 shows that the level of consumer prices has also had a high correlation with the level of the nominal exchange rate, not least because the bulk of food and other consumer goods are imported.

Although such levels of inflation are very high by the standards of advanced countries, they are relatively common among emerging markets and can be observed in countries such as Turkey, Ukraine or – until recently – Russia. Very often, relatively high inflation results from the shifts in relative prices (for instance, when the prices of non-tradables/services rise faster than those of tradable goods), which are natural in a growing economy. (This could be a manifestation of the so-called ‘Balassa-Samuelson effect’, reflecting the diverging productivity developments across sectors, or driven by demand-side factors, such as a secular shift of consumer preferences towards services.) Importantly, empirical evidence suggests that inflation around 10% does not represent an obstacle to economic growth – at least not in emerging economies. Empirical research on the link between inflation and economic growth, which was conducted for 80 medium- and low-income countries over the period 1961-2000, showed that higher inflation was associated with *gains* in GDP growth up to an inflation threshold of 14-16%.⁴⁷ Against this background, adopting a single-digit inflation target in Iran in the present circumstances may be overly ambitious a goal. Attempts at reaching this target may result in over-restrictive monetary policy which will unduly suppress economic growth.

A unified and flexible exchange rate may aggravate these problems still further. Currency depreciation, which will almost certainly result from exchange rate unification, will act as a ‘cost-push factor’ because of the increased price of imported goods, and thus add to inflationary pressures in the short run. In the medium term, further currency depreciation (and the resulting inflationary pressures) may be driven by the large geopolitical uncertainties, making the rial a likely target for speculative attacks, once its value is unified and determined by market forces. Besides, depreciation will likely have an effect not only on inflation but, because of the prevalence of so-called ‘balance-sheet effects’ of high dollarisation (a high share of credits and bank deposits in Iran denominated in US dollars), also on real incomes. If many credits are denominated in foreign exchange, exchange rate depreciation results in a higher credit burden for households and businesses. This may result in surging non-performing loans and thus have potentially negative consequences for the financial stability, which weighs on domestic demand (see e.g. Leiderman et al., 2006).

Dollarisation is a prominent phenomenon in Iran, especially at the times of sudden exchange rate depreciations. There have been two recent episodes when Iranians have rushed to move their savings into foreign currencies, which resulted in a reduction in investment in the productive sector. One of the episodes was in 2012 when international sanctions were intensified and the Central Bank of Iran was completely cut off from SWIFT transactions. The other and more recent episode was in January 2018 with the emerging unrest and protests across cities in Iran, mainly triggered by popular discontent with the country’s social and economic prospects.

Trying to use classical monetary policy tools, such as hiking the policy interest rate, or potentially a buy-back of government bonds from the open market (in case government debt held by the CBI is

⁴⁷ Pollin and Zhu (2006).

securitised – for more on that, see above) in response to such depreciation-induced inflationary pressures would bear the risk of suppressing economic growth still further.

All in all, a switch to full-fledged inflation targeting in Iran's current circumstances would be at best premature. Of high relevance in this context are the findings by Ötker-Robe et al. (2007) who report that even countries such as Israel, Poland and Chile – more advanced than Iran in nearly all respects – needed 10-20 years for a switch to a full-fledged floating and inflation targeting regime.

4.6. STRUCTURE OF THE ECONOMY

Table 2 presents a breakdown of gross value added in Iran by economic activity. As can be observed, oil and gas has been playing a major role in the Iranian economy, particularly when the price of oil was at its peak during the period 2006-2008. By removing oil from the GDP (see Figure 27), the major component of economic activity is derived from the services sector. Services and manufacturing employ the largest portion of the population in Iran according to Figure 28, while the share of employment in agriculture is relatively larger than the share of its value added in total GDP.

Table 2 / Breakdown of gross value added in Iran by economic activity, 1991-2017, % of total

Year	1991/1992	1996/1997	2001/2002	2006/2007	2011/2012	2016/2017
Agriculture	14.2	14.8	11.2	8.8	8.0	13.1
› Agriculture, hunting and forestry	13.8	14.4	10.9	8.6	7.7	12.7
› Fishing and fish farming	0.5	0.4	0.3	0.2	0.3	0.5
Industry	35.9	37.5	36.5	41.8	42.7	33.5
› Mining & quarrying	7.5	14.7	15.8	21.4	16.4	9.1
○ Oil and gas	6.8	14.2	15.2	20.7	15.6	8.2
○ Other mining	0.7	0.5	0.6	0.7	0.8	0.9
› Manufacturing	19.9	14.6	13.9	13.0	14.0	14.3
› Production & distribution of electricity, gas, water	1.3	1.8	2.0	2.4	6.9	7.3
› Construction	7.3	6.4	4.9	5.0	5.4	2.9
Services	48.3	48.5	51.9	49.5	48.3	52.6
› Trade, repair, hotels, and restaurants	17.3	15.9	16.0	14.2	14.2	15.5
› Transport and communications	6.6	5.4	7.4	7.1	7.1	8.6
› Financial activities	1.0	1.0	2.0	2.8	2.7	1.5
› Real state and business	11.4	13.0	12.0	11.1	11.0	12.5
› Public administration, health care, social services	11.1	12.2	13.0	12.8	11.5	12.4
› Social, personal, and household services	0.9	1.0	1.5	1.6	1.6	2.1

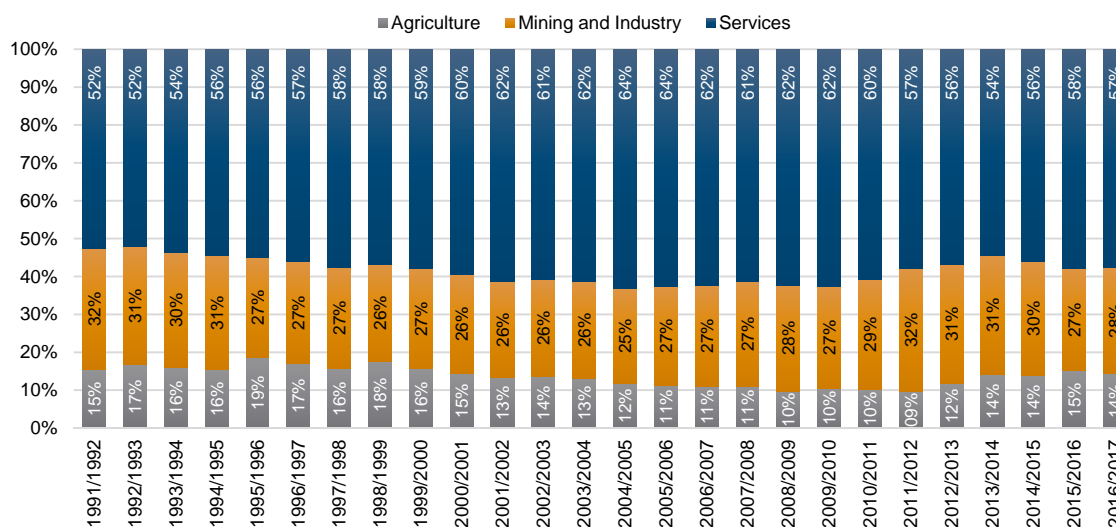
Source: Statistical Center of Iran (SCI).

4.6.1. Agriculture

Agriculture has a relatively small role in Iran's economy, accounting for around 12% of total gross value added since 1991 (annual average), though with some fluctuations. From 1991 to 2001 agriculture made up around 14% of Iran's economy in annual average terms, but declined thereafter to around 9% for about one decade. Since 2013/2014 the share of agriculture in Iran's total gross value added has been slightly above 12% and gradually increasing. If we exclude oil from the calculations (Figure 27), in the period 1991/92-2016/17 agriculture accounts for around 14% of the annual average of non-oil value

added in the economy. From 2004 to 2012, during the presidency of Mr Ahmadinejad, agriculture had its lowest share in non-oil value added, about 10.7% on average. In other years since 1991, that share was standing above 13%.

Figure 27 / Main economic activities in non-oil GDP, 1991-2017



Source: Statistical Center of Iran (SCI).

Compared to the peer countries chosen in Chapter 3, Iran is close to Turkey with respect to the share of agriculture in the whole economy. Over the entire period 1991-2016 Turkey's average annual share of agriculture in total GDP was around 11.4%, but the share of agriculture was continuously decreasing to 7% in 2016. Armenia and Pakistan, with average annual shares of 27% and 24.7%, respectively, in the same period and Afghanistan with an average annual share of 28% during 2002-2016 are the most agriculture-dependent countries among the peers. Saudi Arabia, with an average annual share of agriculture in GDP of 4%, Russia with 5.9%, and Iraq with 8.9% are the least dependent on agriculture.

According to the input-output tables provided once a decade by the Statistics Centre of Iran, crops made up the largest share in agricultural value added of around 38.7% in 2011/2012, of which wheat accounted for above 14.5%, industrial crops for 3.8%, beet sugar and sugarcane for 2.5%, and rice for 2.4%. According to the Ministry of Agriculture of Iran⁴⁸ in 2016, 14.5 million tonnes of wheat was produced. This is the largest item in total crops (in tonnes) accounting for 17.5%. The next most important crops are barley (3.7 million tonnes) with a share of 4.5% in total crops, and rice (2.9 million tonnes) with a share of 3.5%. Since 2004 Iran has reached self-sufficiency in wheat consumption.

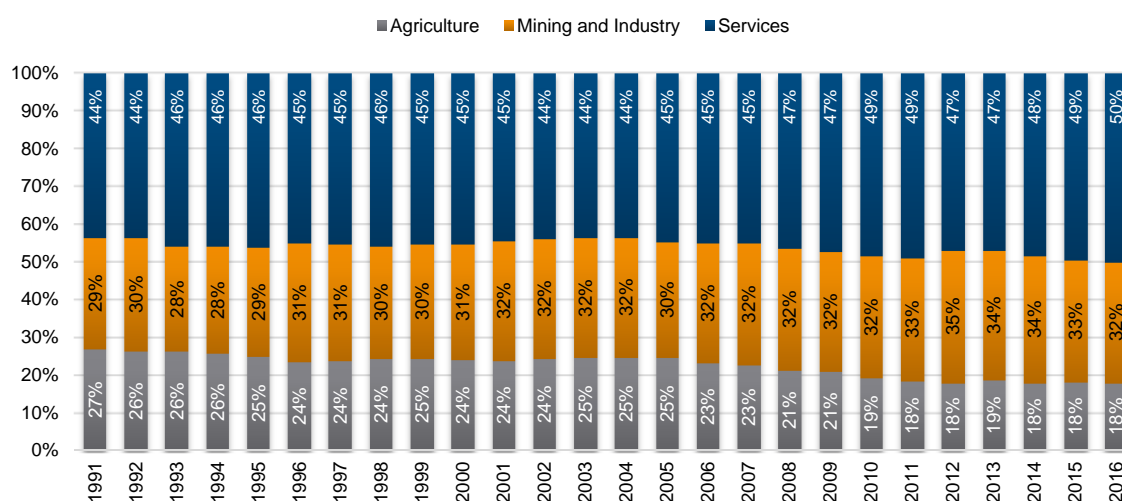
Live animals account for the second largest share in agricultural value added of around 38.5% in 2011/2012, of which poultry for 12%. Animal products make up 14.2%, horticultural products 6% and fisheries 1.5%.

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<http://www.maj.ir/Index.aspx?page=form&lang=1&PageID=11583&tempname=amar&sub=65&methodName=ShowModuleContent>

It is worth mentioning that employment in agriculture relative to total employment, as estimated by the ILO, has been decreasing continuously from 27% in 1991 to 18% in 2016 (see Figure 28). The average annual ratio during the period is around 22.7%, which is much larger than the share of agriculture in GDP. This firstly indicates that the agricultural sector employs a large share of the population. Secondly, with an average annual ratio of 0.4 of its value-added share to its employment share, it is inefficient relative to other sectors. However, its productivity has been improving over the years thanks to mechanising the sector.

Figure 28 / Employment share by economic activity, 1991-2016



Source: World Development Indicators (WDI) of the World Bank, International Labour Organisation (ILO).

4.6.2. Services

Iran's economy is characterised by a sizeable non-tradable sector. Since 1991 the average share of the services sector in the gross value added of the total economy has hovered around 50% (Table 2). Among the peer group countries, Pakistan, with an average annual share of 52%, and Afghanistan with 48% are closest to Iran in this respect. By contrast, the lowest average annual shares of services in GDP are observed for Iraq (29%), Azerbaijan (34%), Armenia (37%), and Saudi Arabia (42%). Advanced economies such as the EU have been continuously increasing their share of services value added from 66% in 1991 to 74% in 2016. This is partly because of a large share of value added being produced by knowledge-intensive upstream sectors (or business-related services) such as design and R&D or downstream such as financial and retail sectors. Moreover, the share of public services in the EU reaches up to around 30% of the GDP, while that share is comparatively small in Iran despite its large government. This may be due to the large share of Iran's economy being owned by state-owned enterprises (see Section 2.1.3 on the ownership structure of Iran), which are not reflected in the public services but in other services sectors of the economy. Turkey and Russia have also been improving their services value added over the years, to above 60% in 2016.

According to the most recent available data, during 2016/2017 (the Persian calendar year 1395, which starts on 20 March 2016), the largest contribution to the services sector came from trade, repair, hotels

and restaurants, making up 15.5% of the total value added in the economy. Real estate and business services account for the second largest share in the services sector. This sizeable non-tradable sector in Iran is driven by the important role of business brokers and intermediary businesses. This could be, on the one hand, an indication of the well-known 'Dutch disease' where the tradable sector is mainly fuelled by the income from extraction and sale of natural resources. On the other hand, Iran is characterised by very high annual inflation and interest rates. This encourages the retail sector and business transfer agents of the economy to be more active. In other words, instead of investing in tradable sectors of the economy such as the manufacturing or other tradable services like transport and communications where the economy produces real output, investors invest in retail and real estate where the inflation automatically generates large profits.

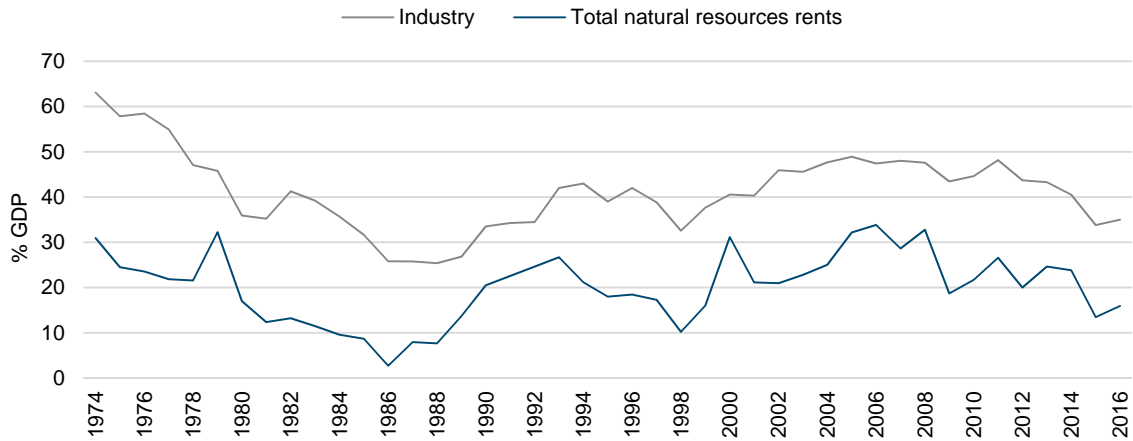
Employment in services relative to total employment has usually been above but close to its value added share relative to GDP (Figure 28). This holds for the entire period except for a few years with very large production of oil (such as in 2007 and 2008) that increases the share of industry in GDP. This indicates that the services sector is in general more productive than the agricultural sector, with an average annual ratio of 1.06 of its value-added share to its employment share in the economy.

4.6.3. Industry

The second largest contributor to gross domestic product is industry, which accounts for around 38% of Iran's economy on an annual average since 1991. However, a very large part of it comes from mining and quarrying. Value added in oil and gas production has been around 14% of annual gross total value added in the same period. In 2004-2009 value added generated by oil and gas was above 21% of total value added. In general, as Figure 29 indicates, a very large share of value added in the Iranian industry comes directly from the rent of natural resources, which includes the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. Forest rents are usually categorised within the agricultural sector. However, as the data provided by the Statistical Centre of Iran (SCI) suggest, in the past few years only around 0.08% of total GDP was the value added produced by forestry. The very large share of natural resources rents in the economy points to a 'Dutch disease phenomenon' in Iran (see Section 4.2 on sovereign welfare fund).

The share of construction in the Iranian economy has recently been declining. The peak of construction activities was after the period of the Iraq-Iran war (1980-1988) and during the presidency of Akbar Hashemi Rafsanjani (1989-1997). This period is known as the 'construction period', in which the economy was recovering and war-torn areas were being reconstructed and new infrastructure such as power plants, wind and water mills were being established across the country. The investment in and the construction of power plants, power distribution, natural gas refineries, and gas distribution pipelines resulted in larger value added in the production and distribution of electricity, gas, and water, improving the living conditions in the country for decades. This is evident from the figures presented in Table 2.

Figure 29 / Gross value added of industry versus natural resource rents, 1974-2016, % of GDP



Source: World Development Indicators (World Bank).

During the presidency of Mahmoud Ahmadinejad (2005-2013), the government initiated a new plan called 'Maskan-e-Mehr', which was supposed to construct 4.5 million apartments for individuals and families. The project was substantially financed through government loans from the CBI, which through printing money contributed to increased liquidity and a very high inflation rate. The project had a considerable impact in discouraging the private sector from housing constructions. When the economy went into recession after the intensified international sanctions in 2012, the construction sector – lacking private investment – also slipped into recession. Now a very small share of the total gross value added in the economy is generated by construction.

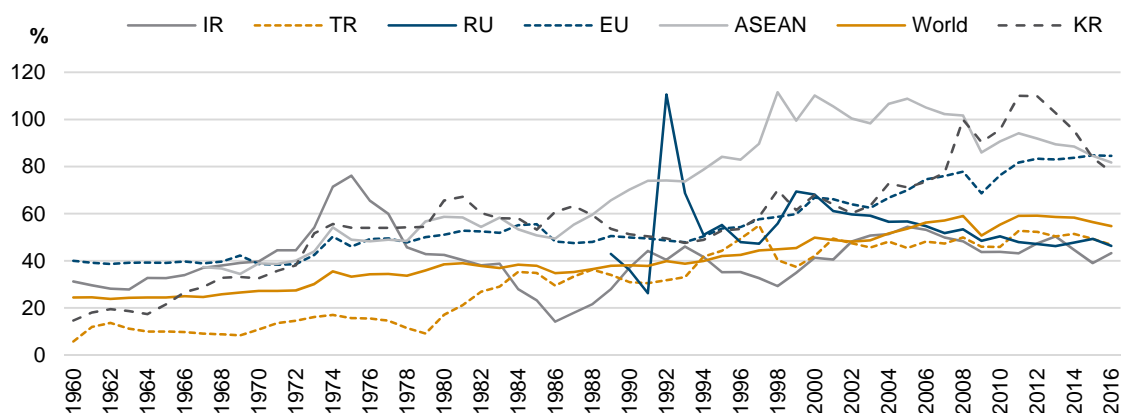
5. Openness, trade and FDI

5.1. IRAN'S OPENNESS

Iran's economy is very much dependent on trade as its growth is mainly derived from oil exports. However, its current openness measured as total trade, i.e. imports plus exports, to GDP is relatively low, hovering around 40% of GDP. Compared to the peer countries listed in Chapter 3, Iran has had the lowest trade to GDP ratio in the recent years, except for Pakistan with an average annual openness of 32% in the past two decades. In the past ten years the average annual openness of Saudi Arabia stood at 83%, Azerbaijan at 82%, Iraq at 77%, Armenia at 68%, Afghanistan at 62%, and Turkey and Russia at 49%. Iran's low openness seems to reflect its weak economic relations with the world, which could be due to both the international sanctions and lack of competitiveness.

During the 1970s, Iran's openness was very high, reaching its historical peak of 76% in 1975, which was due to very large exports of oil and petroleum. Iran's openness during the last decade of the Imperial Pahlavi State of Iran (1925-1979) was actually higher than the world average, and above the two economic areas of the time, namely the European Union (EU) and the Association of Southeast Asian Nations (ASEAN) (see Figure 30). After the Islamic Revolution on 21 February 1979, and during the eight years of the Iraq-Iran war, Iran's openness deteriorated and reached its historical low of 14% in 1986. This was because the nominal GDP was increasing due to high inflation, while real GDP was much lower than its peak in 1976; at the same time Iran had difficulties selling its petroleum which resulted in lower exports. Since the end of the war in 1988, the average trade openness of Iran stands at around 42%, with its peak of 53% in 2006 due to surging oil prices. In 2016, Iran's trade to GDP ratio was around 43 (Figure 30).

Figure 30 / Trade (imports + exports) to GDP ratio (openness) of selected regions, 1960-2016

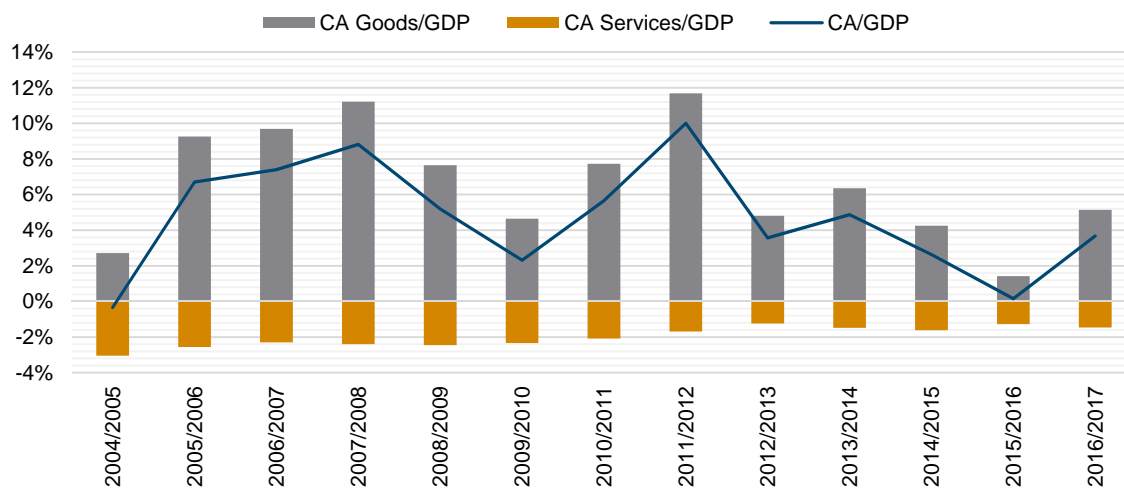


Note: IR – Iran, TR – Turkey, RU – Russia, EU – European Union, ASEAN – Association of Southeast Asian Nations, KR – South Korea.

Source: World Development Indicators of the World Bank, wiiw calculation.

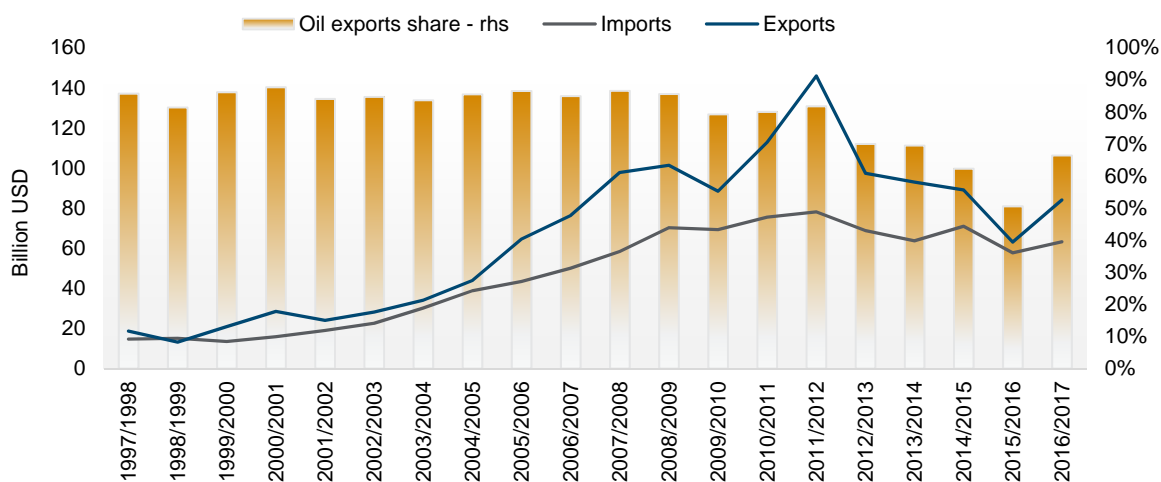
Iran has been running current account (CA) surplus since the 1990s with few exceptions (Figure 31). Because international sources (such as the WDI of the World Bank) do not provide data on the CA balance of Iran since 2000, data provided by the Central Bank of Iran (CBI) are used. Gross domestic product (GDP) is not reported by the CBI prior to 2004/2005. Nevertheless, since 2005/2006, Iran has run CA surplus, resulting from a strong CA surplus in goods relative to a CA deficit in services. The CA surplus was at its peak before the international sanctions intensified in 2012. The enormous CA surplus in 2011/2012 was due to exports of USD 120 billion of oil and petroleum according to the CBI. This sale could have possibly led to an appreciation of the Iranian rial. However, the international alliance to impose sanctions on Iran did not allow the Iranian government to retrieve its revenues in USD. This put pressure on the currency reserves which at the end of 2012 led to the depreciation of the rial against the US dollar by more than 200% (see Section 4.4 in the macroeconomic chapter).

Figure 31 / Current account of Iran, % of GDP, 2004-2017



Source: Balance of payment by Central Bank of Iran, wiiw calculation.

Figure 32 / Goods exports and imports of Iran, 1997-2017



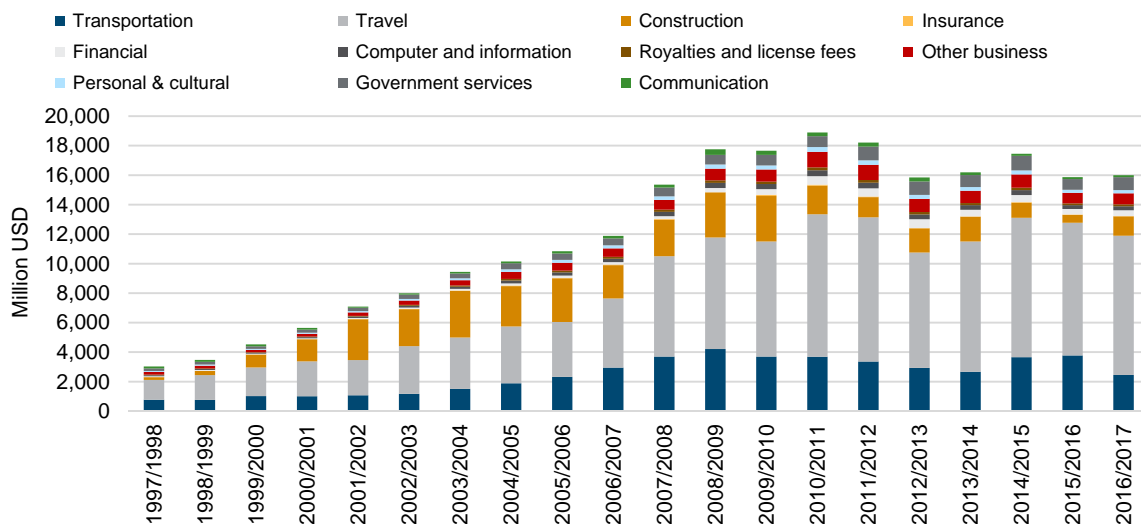
Source: Balance of payment by Central Bank of Iran.

According to the CBI, until 2013/2014, oil exports comprised above 70% of Iranian exports, peaking at 86% in 2007/2008 due to historically high prices of oil. Comparing these statistics with mirror import flows reported by trading partners indicates that this figure must comprise not only crude oil but also any other petroleum products. The second top panel to the left of Figure 32 indicates that strict international sanctions prohibited oil exports substantially, which led to their lowest value of 50% of total Iranian exports in 2015/2016. This may have been due to the restrictions on purchasing crude oil from Iran in addition to cutting the money transfer channels through SWIFT transactions. However, production and exports of other petroleum products were also deteriorating owing to lack of maintenance and supply of intermediate parts to Iranian refineries by European investors.

5.2. TRADE IN SERVICES

The Iranian CA balance in services has usually been in deficit (Figure 31). A large share of the deficit comes from tourism imports (Figure 33). In 2016/2017, travel imports to Iran comprised USD 9.5 billion, which is around 60% of total imports of services. According to Iranian sources more than 9 million Iranians (around 12% of the total population) travelled abroad in the same year.⁴⁹ The top destination of Iranian tourists is Turkey without any visa requirements for Iranians. In 2013 1.2 million Iranians visited Turkey.⁵⁰ Iraq, with 0.8 million Iranian visitors in 2013, was the second top destination for Iranians; the country is mostly visited by pilgrims. Other neighbouring countries such as Armenia, Azerbaijan, the United Arab Emirates, as well as Saudi Arabia and Georgia and the European Union are the next most favourite destinations of Iranian visitors.

Figure 33 / Structure of services imports of Iran, 1997-2017



Source: Balance of payment by Central Bank of Iran.

Despite its ancient history and many historical sites listed by the UNESCO World Heritage Committee⁵¹, Iran is not counted as one of the top tourist destinations in the world. Islamic restrictions such as obliging

⁴⁹ [Donyaye Eghtesad Newspaper, No. 4142, 12 September 2017.](#)

⁵⁰ Iranian Students' News Agency, 22 May 2015: <https://goo.gl/7P4TmK>

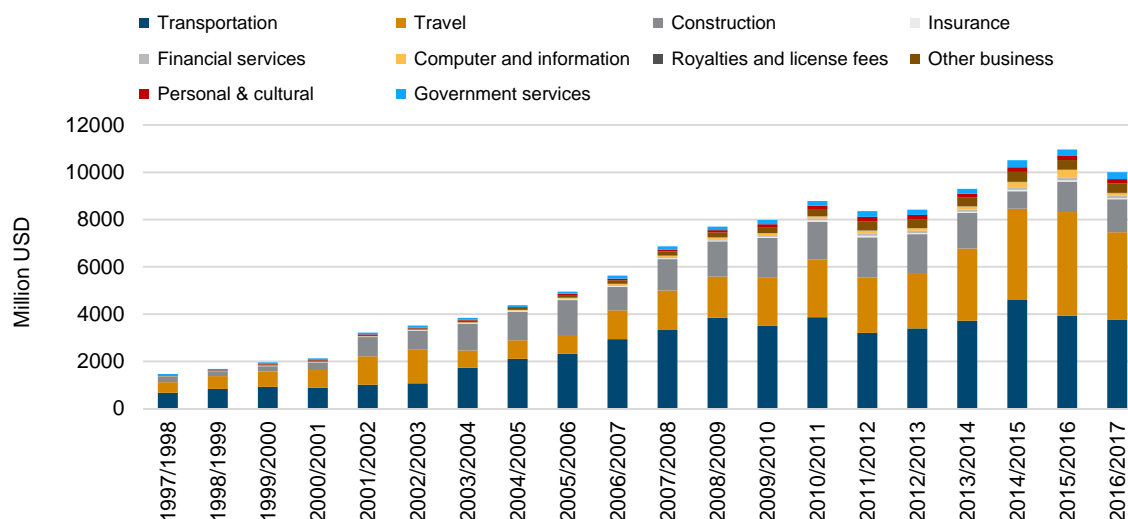
⁵¹ <http://whc.unesco.org/en/statesparties/IR>

women to wear scarves (hijab) and fearing penalties accordingly could be one of the reasons for the lacking attractiveness for international tourism. However, Iran's tourism exports in 2016/2017 amounted to USD 3.7 billion, which is around 37% of its total services exports. The major driver is that Iran hosts many Muslim pilgrims every year, mostly from Shiite countries. According to the above Iranian source, in 2016/2017 around 1.4 million tourists from Iraq, 1 million from Azerbaijan, 0.7 million from Afghanistan, and 0.4 million from Turkey among other countries travelled to Iran. One of the most important destinations is the Imam Reza Shrine of the eighth Shiite Imam – Ali al-Ridha, who was the eighth generation descendent of the Prophet Muhammad – in Mashhad, the second largest city of Iran with more than 3 million inhabitants. The city hosts around 20 million pilgrims from all over Iran and the Shiite world.

Exports of transportation services are the main contributors to a reduction in the CA deficit in services trade (Figure 34). Since 1997/98 transportation has contributed to 42% of Iranian services exports on average; a peak of USD 4.6 billion was reached in 2014/15. On the import side, during the same period, around 20% of services imports comprised transportation, which amounted to USD 3.6 billion in 2014/15. Large exports of petroleum also account for a considerable share of transportation services.

Another large source of the CA deficit in services was construction services, which however has changed to a surplus in recent years. This could be due to a decrease in construction services imports since the intensification of international sanctions that led to lower inflows of foreign direct investment projects.

Figure 34 / Structure of services exports of Iran, 1997-2017



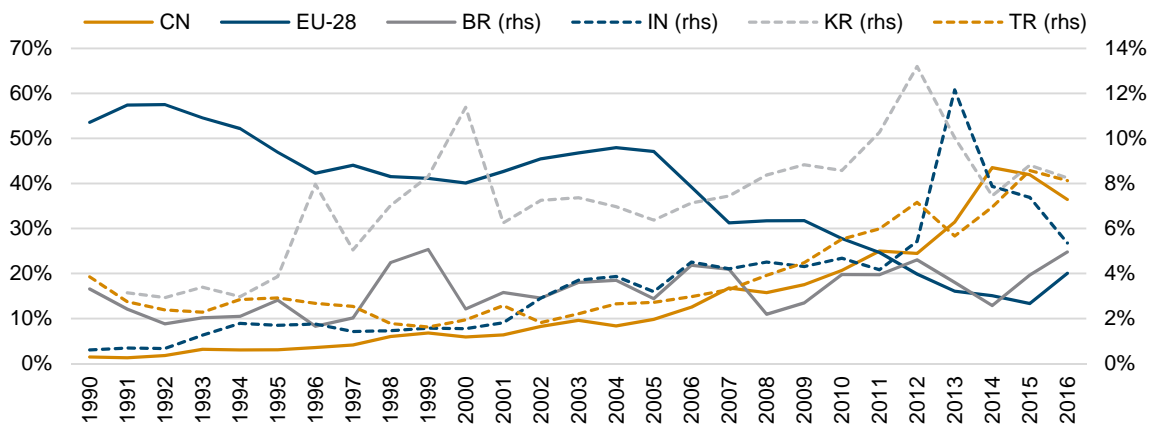
Source: Balance of payment by Central Bank of Iran.

5.3. TRADE IN GOODS

The EU-28 had been the dominant trading partner of Iran until the sanctions intensified (Figures 35 and 36). In fact, during the period from 1962 to 2011, the EU-28 imported an average 45% of Iran's total exports of goods. Meanwhile, the share of Iranian goods exports (in CIF values reported by the trading

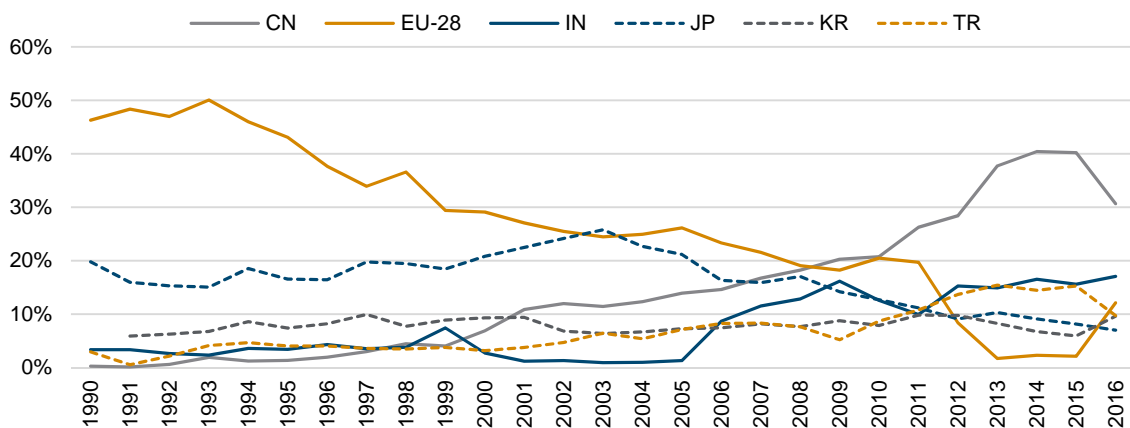
partners⁵²) to the EU-28 has dropped from its historic high of 48% in 2004 to 13% in 2015. With the EU-28 as its major trading partner, Iran was particularly vulnerable to the nuclear sanctions imposed by the EU in 2012 along with the US, Canada, and Australia. However, Iran has been able to replace the EU-28 as an export destination by other countries such as China, South Korea, Turkey, India, and Brazil, which currently have better diplomatic relations with the Iranian government. Iran's exports to China (i.e. China's imports from Iran) had been less than 10% of Iran's total exports in 2005; in 2016 they stood at 42%, and China has become the main trading partner of Iran.

Figure 35 / Share of top 6 importers of Iran in Iranian exports, 1990-2016



Source: UN COMTRADE, total CIF trade values in SITC classification, wiiw calculations.

Figure 36 / Share of top 6 exporters to Iran in Iranian imports, 1990-2016



Source: UN COMTRADE, total FOB trade values in SITC classification, wiiw calculations.

⁵² Iran is suffering from lack of transparency, and reliable detailed trade statistics have not been provided by Iranian sources. The Tehran Chamber of Commerce offers some detailed trade statistics whose aggregation does not correspond to the aggregated trade reported by the CBI. Our requests to obtain access to such a database was not responded by the Tehran Chamber of Commerce, the Customs Administration of Iran, or the CBI. Iran has not reported detailed trade statistics to international organisations collecting worldwide databases such as that of the UN COMTRADE for many years. In this report, therefore, all trade flows on goods are reported by the trading partners. Only recently, the government has announced that soon the data on trade will become available to improve transparency and decrease corruption and smuggling.

Due to the intensified sanctions implemented by the European Parliament in March 2012, the EU-28 accounted only for around 42% of Iran's total imports of goods in the period 2013-2015. This is to be compared with the period 1990-2011, in which 32% of Iranian import of goods originated from the EU-28. This indicates that EU firms suffered a revenue loss of around USD 22 billion, equivalent to around 30% of total Iranian imports of goods in 2011. Part of this shortfall was gradually replaced by imports from China, reaching a share of close to 40% in total Iranian imports in 2014. Exports of the EU-28 slightly bounced back in 2016 after the effective implementation of the JCPOA, which removed the nuclear-related sanctions against Iran. In fact, exports of the EU-28 to Iran increased from USD 5.7 billion in 2015 to 9 billion in 2016, which is still very low compared to the USD 14.6 billion exports to Iran in 2011. The accord led to a reduction in the share of Chinese exports in Iran's total goods imports from 40% in 2015 to 31% in 2016.

5.3.1. Composition of goods trade

Figure 37 illustrates the trade composition of Iran in several categories. Trade data have been downloaded at the 6-digit level of the Harmonised System (HS) from the UN COMTRADE Database and then corresponded to other classifications. The upper panels in Figure 37 represent the structure of trade according to HS sections; in the middle panels trade is categorised in different technology intensities according to the definition proposed by the Organisation for Economic Co-operation and Development (OECD)⁵³; the lower panels represent the trade data corresponded to the Broad Economic Category that categorises goods according to their end-use.

5.3.1.1. Exports

It is not surprising that Iran's top export is mineral products, which comprise 68% of total exports in 2012-2016. Mineral fuels and petroleum (HS 27) make up the most important share. This sector mostly corresponds to the 'mining and quarrying' sectors in ISIC classification while a smaller fraction of it goes to medium-high-technology (MHT) and medium-low-technology (MLT) sectors producing refined petroleum products. During 2012-2014 China, India, Japan, and South Korea were the largest importers in this sector, with a total value of USD 36.5 billion, which represents 85% of total Iranian exports of the sector. These countries had already been the major importers of this sector before the sanctions intensified during 2007-2011 but with a lower total share of 63%, worth USD 47 billion. While the trade value was reduced by around 23%, the volume of trade was only reduced by 11% due to higher price of oil and petroleum in the earlier period. In 2012 the respective volume of Japan's imports from Iran decreased by 42% and that of South Korea's by 30%, two close allies of the United States, while for China the volume of imports remained more or less stable. India's imports in this sector slightly decreased but in 2016 bounced back to their level in 2009. The reasons, for India in particular, were – as mentioned above – first, not being able to transfer the money of exports⁵⁴, and second, lower foreign investment in the field reducing the exports capacities.

A large bulk of Iran's exports is categorised in HS group 99, which comprises commodities 'not elsewhere specified', sometimes also referred to as confidential; these exports made up 12% of Iranian

⁵³ Can be found here: <https://www.oecd.org/sti/ind/48350231.pdf>

⁵⁴ <https://economictimes.indiatimes.com/news/economy/finance/india-seeks-to-pay-6-5-billion-to-iran-for-oil-imports/articleshow/52285579.cms>

total exports in 2012-2016, worth around USD 8 billion. Since 2002, Turkey has been the country reporting the highest imports from Iran in this category, worth USD 710 million in 2002-2006; this is around 53% of total Iranian confidential exports. This amount increased dramatically in the subsequent periods. In 2007-2011, Turkey reported respective imports worth USD 6 billion, around 87% of Iran's total exports of confidential products, and in 2006-2012 USD 7.2 billion, around 92% of Iran's total exports of these products. Afghanistan account for the second largest share in Iranian exports of unclassified products, reporting imports worth USD 554 million, i.e. more than 7% of Iran's total exports of these products.

About 94% of Iran's exports comprise intermediate and end-use products.⁵⁵ This indicates that exports from Iran, as very upstream sources of the supply chain, are crucial for the global value chains. Chemical products (covering 6% of total Iranian exports), rubber and plastics (5%), metal (3%), and vegetable products (3%) are the major categories of products that Iran exports to the world, after petroleum and commodities 'not elsewhere specified'. Apart from vegetable products (i.e. HS categories 6 through 14), other categories are mostly MLT and MHT products according to their technology intensity. The vegetable exports are mostly derived from specific products that Iran is specialised in and have a large global market share, such as saffron, pistachios and other nuts, dried fruits like grapes (raisins), etc.

While Iran is among the top 10 car producers in the world (taking the EU as a whole)⁵⁶, its industry is not competitive enough to enjoy a large global market share. In 2012-2016 less than 0.09% of Iran's exports were comprised of passenger cars and parts. In the same period, Iranian exports of passenger cars were only around 1.2% of its imports of cars, resulting in a very large trade deficit in the industry. Before the international sanctions intensified, Iran was exporting more passenger cars than thereafter, and the share of exports to imports was around 6% during 2006-2010. During pre-sanctions period, Russia, Syria, and Turkey were the major importers of Iranian passenger cars. However, after 2012, the three major importers of Iranian passenger cars were Iraq, the United Arab Emirates, and Turkey.

5.3.1.2. Imports

Iran's major import is machinery, with around 24% of average imports during 2012-2016. Part of this is also reflected in gross fixed capital formation (GFCF) as around 20% of imports in the same period are based on BEC classification. The share of GFCF imports was at its lowest with 18% in 2012-2013 after the sanctions intensified, while its peak was around 26% during 2002-2005. The reduced share of machinery and capital products imports is the results of the sanctions that hindered foreign investment in Iran. These reduced capital product flows had also contributed to lower aggregate gross fixed capital formation, which resulted in a deterioration of the economy and in recession. Machinery corresponds mostly to parts of the MHT and to some extent to HT (high-technology) industries in the right-hand part of Figure 37.

Iran is endowed with 37 billion tonnes of proven metal and ores resources and is ranked as the 15th richest country in the world in this respect⁵⁷. Nevertheless, metals (HS categories 72 through 83) are the second most important import item, worth around USD 6 billion in 2012-2016. These sectors

⁵⁵ Excluding oil from exports, around 85% of Iran's exports covers intermediate end-use products.

⁵⁶ <http://www.acea.be/statistics/article/top-10-car-producing-countries-worldwide-and-eu>

⁵⁷ According to a study by Arthur D Little (2018): http://www.adlittle.com/sites/default/files/viewpoints/adl_iranian_metals_mining_industry-web.pdf

correspond mostly to parts of the MLT industries in the right-hand part of Figure 37. By contrast, Iran's exports of metals are worth around USD 1.8 billion, accounting for less than 3% of total exports during the same period. This indicates lack of sufficient investment in the heavy metals industry.

The third most important import item of Iran in 2012-2016 was transport equipment, covering railways (MHT industry), aircrafts (HT), ships (MLT) and vehicles (MHT). Iran imports USD 5.7 billion of these products, covering around 9% of its total imports. Around 7% of Iranian imports, i.e. around USD 4.2 billion on average, were comprised of passenger cars over the period 2012-2016. This indicates that only the remaining 2% of Iran's imports during the period corresponds to other transport equipment. Iranian airlines suffer from an obsolete aviation system due to the sanctions. The large deals negotiated after the JCPOA to purchase aircrafts from Boeing, Airbus, and other international producers have not yet fully materialised. Accounting for these large imports of aircrafts expected in the near future, the trade deficit of the sector will increase even further. In 2014, with a total of 8,560 km of rail lines, Iran transported 24.5 billion tonnes of goods and 16.3 billion passengers per km. For comparison, Turkey, had 10,087 km of railroads, but a lower transportation intensity of 11.2 billion tonnes of goods and 4.4 billion passengers per km. Thus, despite a 15% shorter railway network in a double-sized land area, Iran's more than two-fold higher goods transport and about four-fold passenger transport intensities with respect to Turkey show the important role of rail transportation in Iran. Iran is aiming to extend its railway network to 25,000 km by 2025 and has signed several memoranda of understating (MOUs) on investment projects with different companies and countries after the JCPOA. This will additionally increase the trade deficit in this sector in the near future.

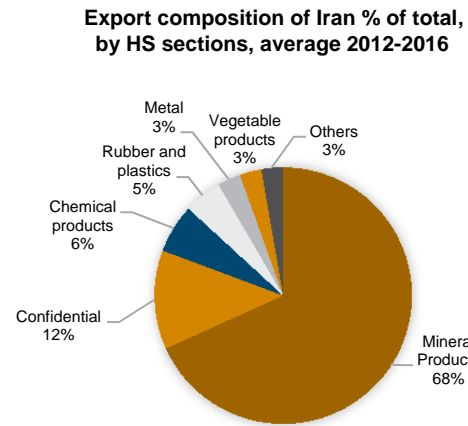
The fourth top import category to Iran refers to vegetable products, covering 9% of its total imports in 2012-2016. Excluding the eight-year period of the Iraq-Iran war, Iran's arable land area is at its lowest share of about 9% of total land area in the past few years. This has been mainly a result of the nationwide drought, mismanagement of water resources, and river closures from neighbouring countries. Lack of irrigation modernisation and advanced investment are additional factors that lead to low capacities of agricultural production in Iran. Despite labour productivity gains in agriculture during past years (see Section 4.6.1), Iran is still relying on imports of vegetable categories. Iran's trade deficit in the sector amounts to around USD 4 billion.

The fifth largest category of imports during 2012-2016 refers to precious metals and stones, comprising USD 5.3 billion. The imports in this category were between USD 125 million in the period 2007-2011 and USD 180 million during 1997-2001. The historic peak of USD 11.4 billion imports of this sector to Iran was in 2012, covering above 16% of total imports of goods. In 2012, 59% of imports in the sector corresponded to 'Non-monetary, other unwrought forms of gold (including gold plated with platinum)' (HS code '710812'), worth of USD 6.7 billion, 98% of which was imported from Turkey. In the same year, 40% of the sector worth USD 4.6 billion covered imports of precious metals (HS code '711319'); close to 100% of it was imported from the United Arab Emirates. This phenomenon coincides with Iran being disconnected from SWIFT. It seems that Iranian exports to these major trading partners could not be compensated with foreign currency but with gold and precious metals. This barter trading system helped Iran to export its oil to other major trading partners such as China⁵⁸ and India⁵⁹ in exchange for goods. This had also dramatic consequences in terms of deteriorating Iran's CA deficit, reducing the country's foreign exchange reserves, and pushing its currency to depreciate further.

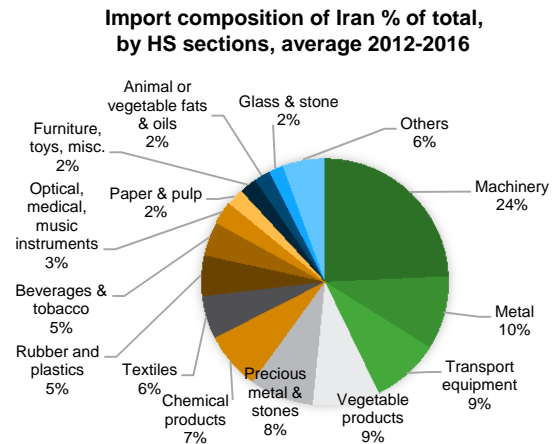
⁵⁸ <https://www.ft.com/content/2082e954-b604-11e0-8bed-00144feabdc0>

⁵⁹ <https://theiranproject.com/blog/2013/05/23/iran-india-reach-basic-barter-trade-agreement/>

Figure 37 / Iran goods trade composition

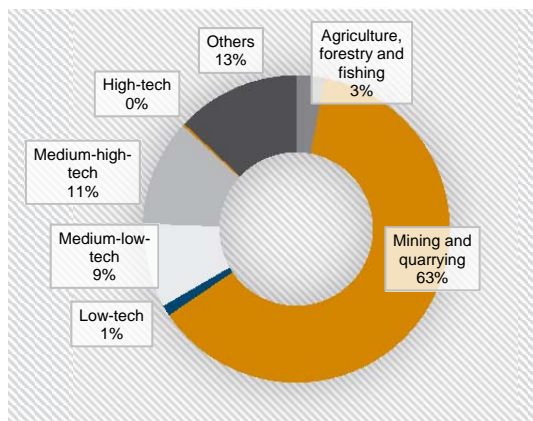


Source: UN COMTRADE, FOB trade values by trading partners in HS 1996 classification, wiiw calculations.



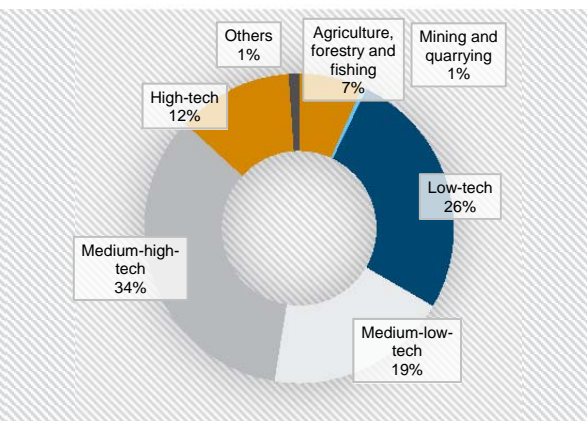
Source: UN COMTRADE, CIF trade values by trading partners in HS 1996 classification, wiiw calculations.

Iran's exports structure, technology intensity, average 2012-2016



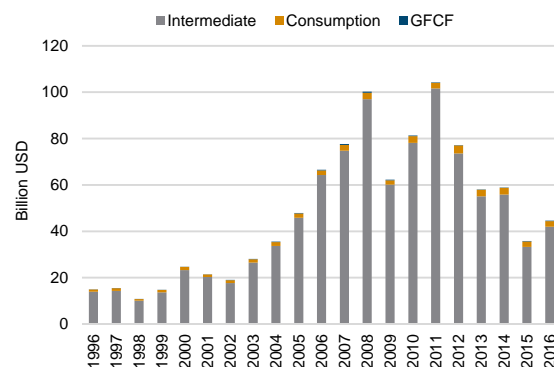
Source: UN COMTRADE, FOB trade values by trading partners in HS 1996 classification, technology intensity definition by the OECD, wiiw calculations.

Iran's imports structure, technology intensity, average 2012-2016



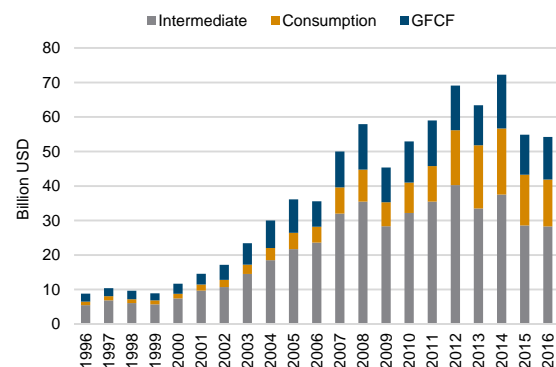
Source: UN COMTRADE, CIF trade values by trading partners in HS 1996 classification, technology intensity definition by the OECD, wiiw calculations.

Iran's export structure in BEC, 1996-2016



Source: UN COMTRADE, FOB trade values by trading partners in HS 1996 classification, Broad Economic Category (BEC), wiiw calculations.

Iran's Import structure in BEC, 1996-2016



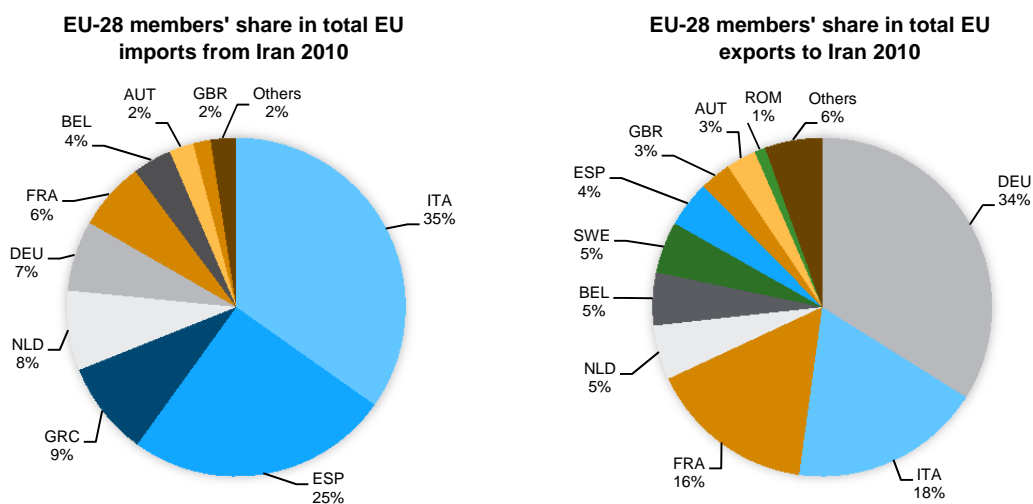
Source: UN COMTRADE, CIF trade values by trading partners in HS 1996 classification, Broad Economic Category (BEC), wiiw calculations.

5.4. TRADE RELATIONS WITH THE EU-28

The trade relations of the EU-28 with Iran deteriorated from 48% of Iran exports worth USD 9 billion in 2004 to 16% worth USD 1.1 billion in 2013. The sanctions led to a further deterioration of trade relations with Iran, lowering EU imports from Iran to less than USD 1 billion in 2015, about 13% of Iran's total exports.

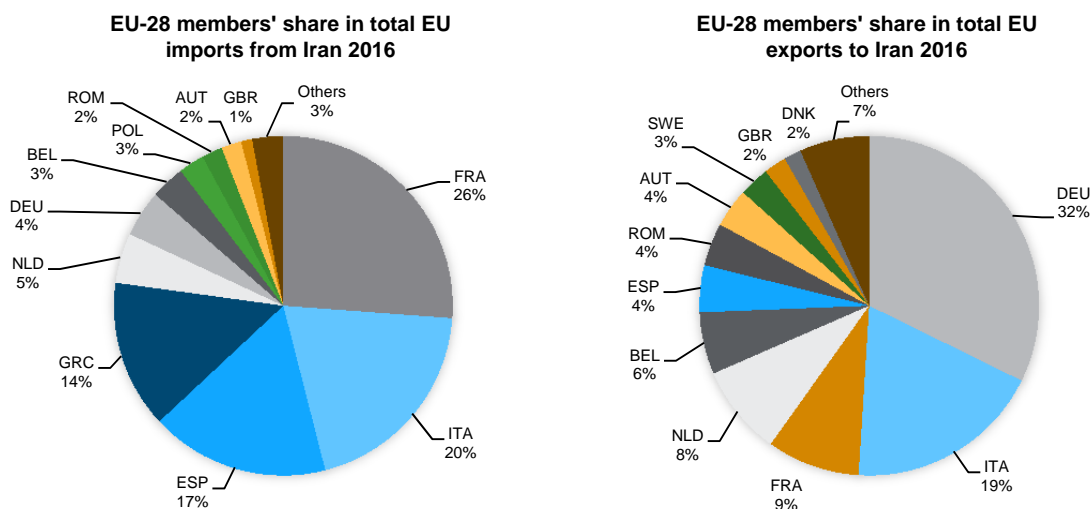
5.4.1. Top EU trading partners of Iran

Figure 38 / EU member top trading partners of Iran, before and after nuclear sanctions



Source: UN COMTRADE, CIF trade values reported by EU-28, wiiw calculations.

Source: UN COMTRADE, FOB trade values reported by EU-28, wiiw calculations.



Source: UN COMTRADE, CIF trade values reported by EU-28, wiiw calculations.

Source: UN COMTRADE, FOB trade values reported by EU-28, wiiw calculations.

Figure 38 presents the share of the top EU trading partners of Iran before the sanctions in 2010 and after the implementation of the JCPOA in 2016. The share of individual EU-28 countries in total EU

exports to Iran has not changed dramatically due to the sanctions. Germany is the top EU exporter to Iran, with an above 30% share in total EU exports to Iran. Italy, France, the Netherlands, and Belgium are the next top exporters from the EU to Iran in both 2010 and 2016. However, Germany's total exports to Iran in 2010 were more than double its exports in 2015 during the sanction period. Germany was exporting more than USD 5 billion in 2010 while exporting around USD 3 billion in 2016. In 2010, total EU-28 exports to Iran stood at around USD 15 billion; they dropped to USD 9 billion after the JCPOA was implemented.

As for EU imports from Iran, the share of individual EU-28 countries in total EU imports has changed over time. Prior to the sanctions, in 2010, Italy was importing USD 6.3 billion from Iran, accounting for 35% (i.e. the largest share) of total EU imports from Iran. After implementation of the JCPOA in 2016, Italy imported only USD 1.2 billion from Iran, ranking second after France. The latter country had been the seventh top EU importer from Iran in 2010, with a share of 16% of total EU imports from Iran and imports worth USD 1.2 billion. In 2016, however, France was the EU's top importer from Iran with imports worth USD 1.5 billion. It is important to note that in 2015 French imports from Iran were only USD 73 million, while Italy did not report any trade with Iran in 2015.

5.4.2. Composition

Figure 39 illustrates the composition of trade between the EU-28 and Iran before the intensified sanctions during 2009-2010 and at the time of the JCPOA being implemented during 2015-2016. European sanctions effectively prohibited EU petroleum imports from Iran; imports of HS section 27, mineral products as part of petroleum products, dropped sharply from an average annual USD 13 billion during the period 2009-2012 (accounting for 87% of EU imports from Iran) to USD 160 million during the sanctions period 2013-2014 (12% of total EU imports from Iran), and then slightly increased to USD 2.2 billion (62% of total EU imports from Iran) in 2015-2016.

In fact, since the implementation of the JCPOA Iran has not managed to reach its pre-sanctions petroleum sale to the EU. One important reason is that the sanctions expelled large European investors from this sector in Iran that is dependent on foreign investment for the required technological advancement. Refineries and exploitation sites abandoned by foreign investors reduced the production capacities. Another reason is that the output of the remaining and the revived capacities in production of petroleum were directed to other destinations. The European sanctions and the high trade costs associated with them deflected parts of Iranian trade to other countries such as China. Iran's exports to Asia and the regained EU market after the JCPOA indicate a diversification of Iran's export markets, which would make the country less vulnerable to future sanctions.

In total Iranian exports to the EU, a number of sectors have been gaining shares. Exports of 'live animals and products', 'vegetable products', 'animal or vegetable fats & oils', 'beverages & tobacco', 'wood', 'leather and skins', 'metal', and 'furniture, toys, misc.' slightly increased from USD 835 million in 2009-2010, accounting only for 5.5% of Iran's total exports to the EU, to USD 971 million in 2015-2016, a share of 27% of total exports to the EU. These sectors are mostly owned by the private sector in Iran, and despite Iran's disconnection from SWIFT during the sanctions period 2013-2014, total exports of these sectors to the EU remained at around USD 860 million. Owners of small businesses in these sectors found ways to bypass the sanctions through money transactions from external currency bureaus. Small retail stores operating in these sectors across different cities in the EU with a substantial number of Iranian inhabitants were still doing business at the time of the sanctions. In these sectors, Iran

has a large market share in external EU imports in a few specific products such as Saffron, pistachios and other nuts, dried grapes (raisins), sheep and lamb skins, and carpets and rugs.

As for EU-28 exports to Iran, machinery is the major sector: it shrank from USD 6.4 billion, 45% of Iran's imports from the EU-28 in 2009-2010, to USD 2.9 billion, 37% of EU-28 total exports to Iran in 2015-2016. The reduction in EU exports of these products substantially affected inflows of capital and intermediate inputs of production to Iran's petroleum industry. For instance, while this sector includes several 6-digit products, the top export from the EU-28 to Iran in this sector in 2010 was 'parts of turbo-jets, turbo-propellers and other gas turbines' with USD 390 million; this fell dramatically, to USD 38 million in 2012, and in 2016 only increased to USD 82 million. The second top exported product in 2010 was 'air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters', worth USD 370 million; in 2015 this fell to USD 70 million, while it rose slightly, to USD 167 million, in 2016. Lack of these parts and machinery in Iran resulted in reduced petroleum production and lower government revenues.

The second most important sector in EU exports to Iran refers to chemical products, which have not been much affected by the sanctions. EU exports of chemical products to Iran amounted to USD 1.7 billion in 2009-2010, accounting for around 12% of total exports, and remained at a similar level for several years, but its share in exports increased to 21% in 2015-2016. Among EU exports of the chemical products sector, exports of 'pharmaceuticals, medicinal chemicals and botanical products' (ISIC sector code 2423, a very high-tech industry) are the most important ones, worth more than USD 900 million. In 2010 the EU-28 was exporting pharmaceuticals, medicinal chemicals worth USD 800 million to Iran, and this figure slightly increased during and after the sanctions. The reason was that medicines and primary products were excluded from the sanctions as mandated by the Council of the European Union. However, the media in Iran covered the issue in a different way, emphasising that there was also an embargo on medicines.⁶⁰ The reasoning was that sanctions on financial transactions make it very hard to import medicine from Europe. Nevertheless, trade statistics indicate that pharmaceutical products exported from the EU-28 to Iran did not decrease and remained above 57% of total imports of Iran in this sector.⁶¹

The third major exporting sector from the EU-28 to Iran during 2015-2016 was 'optical, medical, and music instruments', which covered around 10% of total EU exports to Iran and was worth USD 750 million. Exports of this sector did not change much from the levels in 2009-2010 but dropped to USD 600 million during the intensified sanctions period 2012-2013. Major exports of products in this sector are related to medical and surgical instruments, which are generally high-technology products; similar to medicines, those exports were not much affected by the sanctions.

Transport equipment was the third major exporting sector in 2009-2010 but lost significantly during the sanction period. In 2010, EU-28 exports of this sector to Iran were above USD 1.6 billion (of which

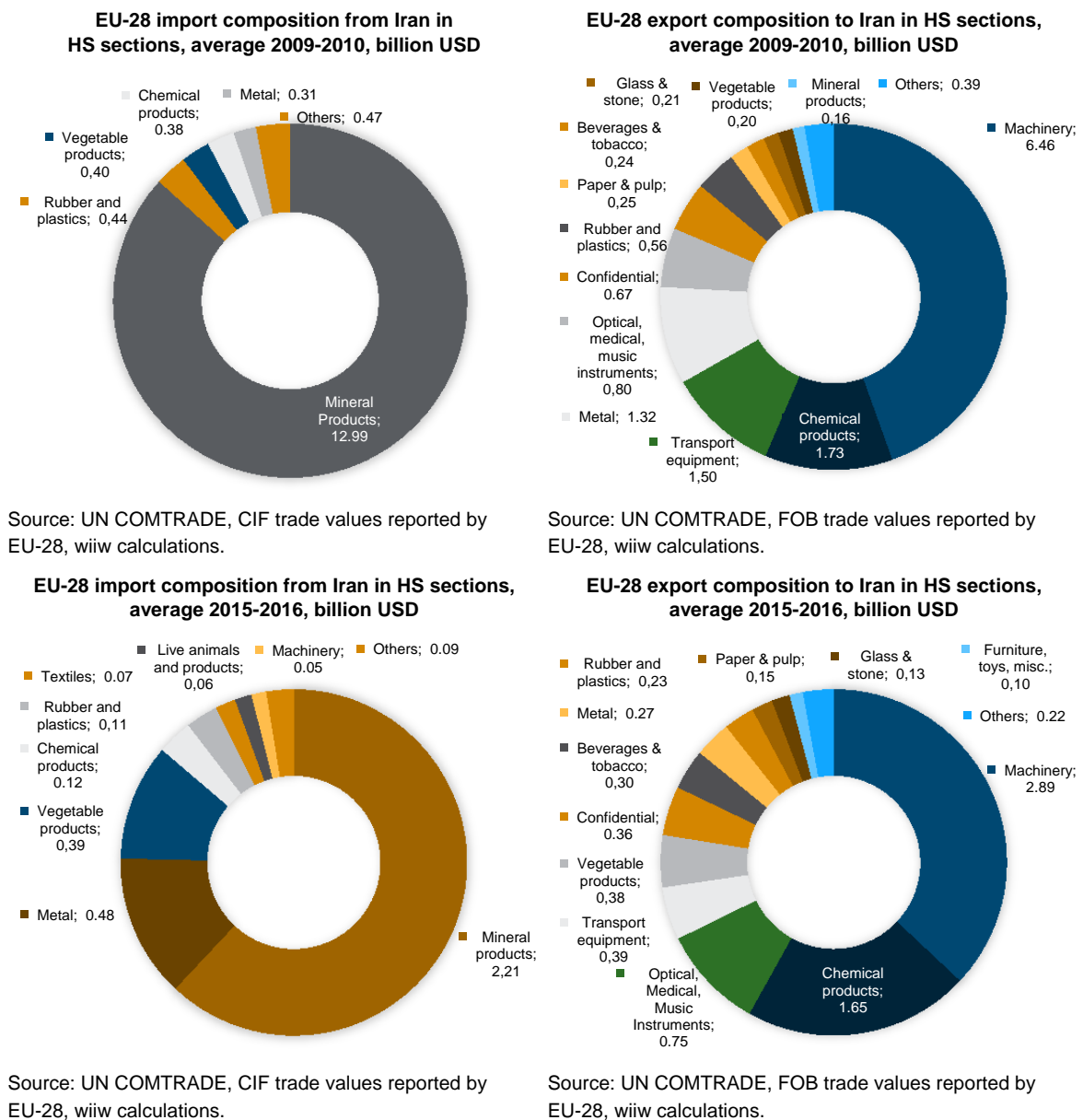
⁶⁰ <http://www.hamshahrionline.ir/details/323292/Lifeskills/heathsubpage>

⁶¹ According to a personal interaction with one of the business managers of the pharmaceutical companies in Iran who was involved with imported European medicine, corruption at the managerial level of Iranian importers (semi-public enterprises) was an effective obstacle to trade. Some medicine companies in the EU were cooperating with their counterparts (importers) in Iran on a regular basis. The Iranian importer was responsible for importing the product and for packaging it in its factories under the licence of the European provider with regular monitoring of the packaging procedure, in exchange for periodic money transfers which were initially provided by the Iranian government through public procurements. This procedure, however, was disturbed as the Iranian managers decided to increase their profits by cheaper imports from other countries such as India, while the price of the subsidised medicine was procured before.

vehicles accounted for 94%), covering 11% of total EU exports to Iran. In 2012 these exports dropped dramatically, to less than USD 300 million; in 2016, they slightly recovered to close to USD 500 million (with an 84% share for vehicles).

Only two small sectors had larger exports during the sanctions period than in 2009-2010. 'Vegetable products' exports increased from USD 200 million in 2009-2010 to above USD 1 billion in 2013-2014, but then dropped again to USD 380 million in 2015-2016. EU exports of 'art & antiques' to Iran amounted to around USD 1.1 million in 2009-2010, increased to USD 2.7 million during the intensified sanctions and then stood at USD 1.4 million USD in 2015-2016.

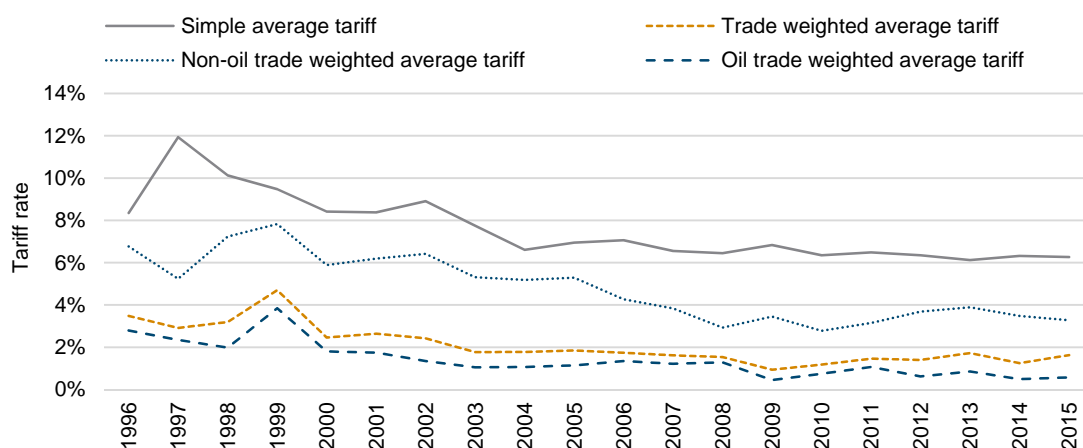
Figure 39 / Composition of trade between the EU-28 and Iran, before and after nuclear sanctions



BOX 1 / THE IMPACT OF SANCTIONS ON IRAN'S EXPORTS

In a gravity estimation including all countries importing goods from Iran during the period 1996-2015, we estimated the impact of sanctions, and tariffs against the aggregate imports from Iran, using a gravity model. The EU imposed several sanctions against Iran’s nuclear activity from February 2007 to 2014.⁶² The econometrics results suggest that an additional sanction against Iran by the EU is related to around 9% lower imports from Iran to any of the EU Member States in comparison to all other importing countries. This shows the effectiveness of the EU sanctions against Iran. The US sanctions against Iran, however, were much stronger, resulting in an 18% reduction of Iranian imports, despite the very low level of trade with the US.

Figure 40 / World tariffs on Iranian exports



Source: WITS, wiiw calculation.

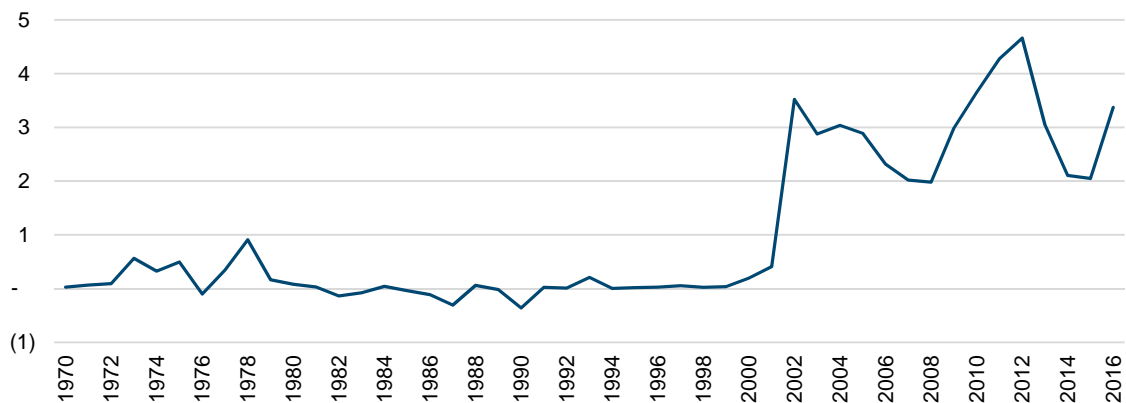
Figure 40 indicates that effectively applied tariff rates against Iranian exports of goods have been decreasing over time. However, simple average tariffs are larger than the trade-weighted average tariffs. This indicates that importers from Iran impose lower tariffs on the Iranian imports with larger trade values. And lower trade-weighted average tariffs on oil indicate that this is mostly due to very low tariffs on oil, which is a crucial intermediate input of production in many sectors. The gravity estimation also indicates that a one percentage point lower tariff against the imports from Iran could result in a 2.5% larger import value. Because Iran is not a member of the WTO, it is facing high tariffs against its exports. By initiating a trade agreement with other countries on lowering the level of tariffs Iran faces, Iran could substantially increase its exports of its non-oil products.

⁶² <https://www.nonproliferation.eu/activities/online-publishing/focus/archives/2014/2014-09-01.php>

5.4.3. Foreign direct investment

Iran is not an attractive host for foreign direct investment (FDI). In 1978 Iran's net inflow of FDI⁶³ stood at above USD 900 million, which was around 1.2% of its total GDP (Figure 41). In 1979, net inflows of FDI suddenly dropped to USD 165 million, less than 0.2% of GDP. Over the course of the following years, due to divestment, especially during the eight-year period of the Iraq-Iran war, net inflows of Iran FDI were turning negative. Not only were new foreign investors no longer interested in making new investments in Iran, but also the capital and assets of older investors were divested to a very high extent.

Figure 41 / Net FDI inflows to Iran, billion USD, 1970-2016



Source: WDI of the World Bank.

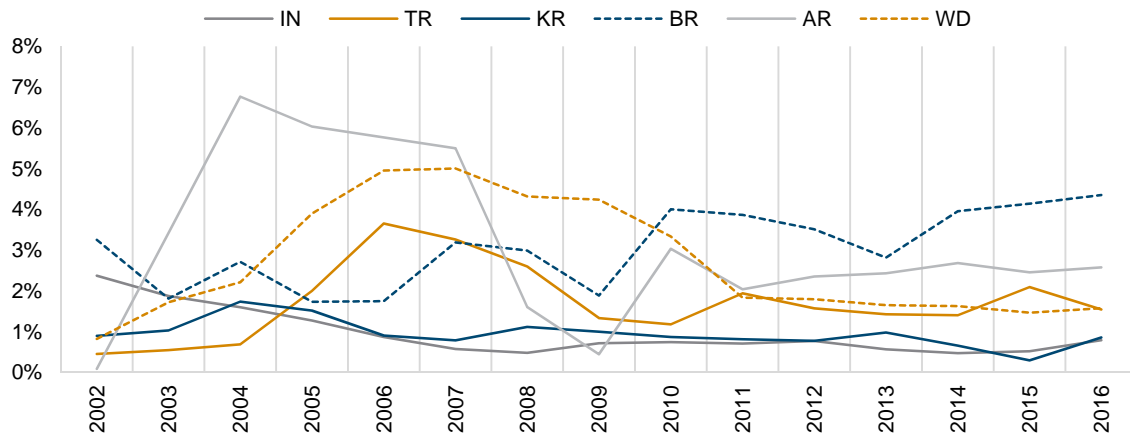
Until 2002 and for 23 years, net inflows of FDI in Iran stood below their former level in 1978. In 2002, with the legislation of the Foreign Investment Promotion and Protection Act (FIPPA) by the Iranian parliament, Iran started attracting FDI. Then, net inflows of FDI stood at their so far highest level of USD 3.5 billion or 2.4% of GDP (Figure 42). Thereafter, the level of FDI inflows was decreasing gradually to USD 2 billion in 2008, only to jump to its highest historic level of USD 4.7 billion in 2012. However, due to an increase in oil revenues and GDP growth, the economy was growing faster than the FDI. Thus, in 2012, the share of net inflows of FDI to GDP only stood at 0.8%. After the international sanctions intensified in 2012, net inflows of FDI to Iran were decreasing again and stood at only USD 2 billion or 0.5% of GDP in 2015. In 2016, after the JCPOA was implemented, net FDI inflows slightly bounced back to USD 3.4 billion, or 0.8% of GDP.

Iran's FDI inflows to GDP ratio is much lower than in many other countries in the world, such as neighbouring Turkey, the United Arab Emirates (ARE), and Brazil (Figure 42). While during 2005-2009, FDI inflows to the GDP of the whole world stood at around 4.5% on average, Iran's share of net FDI inflows was around 0.8% of its GDP. South Korea could be considered a similar country to Iran in terms of its net inflows of FDI to its GDP. However, South Korea has been implementing domestic industrial

⁶³ According to the World Bank definition, FDI net inflows are 'the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.'

policies to encourage its technological advancement in various industrial sectors, without attracting large investment from abroad.

Figure 42 / Net FDI inflow % of GDP, selected countries, 2002-2016



Source: WDI of the World Bank.

5.4.4. Investment composition

For a breakdown of FDI into different sectors and for the source countries, one can use the database provided by fDi markets⁶⁴ which collects data on cross-border greenfield investments that are announced by multinational enterprises (MNEs) across the globe. Therefore, these investments are pledged investments that are not yet necessarily realised but show the decisions made by the MNEs. According to these data, 235 investment projects with total capital investment of EUR 45 billion were announced in the period 2003-2017. These projects are mostly capital intensive and they could possibly generate around 56,000 jobs in Iran (Figure 43).

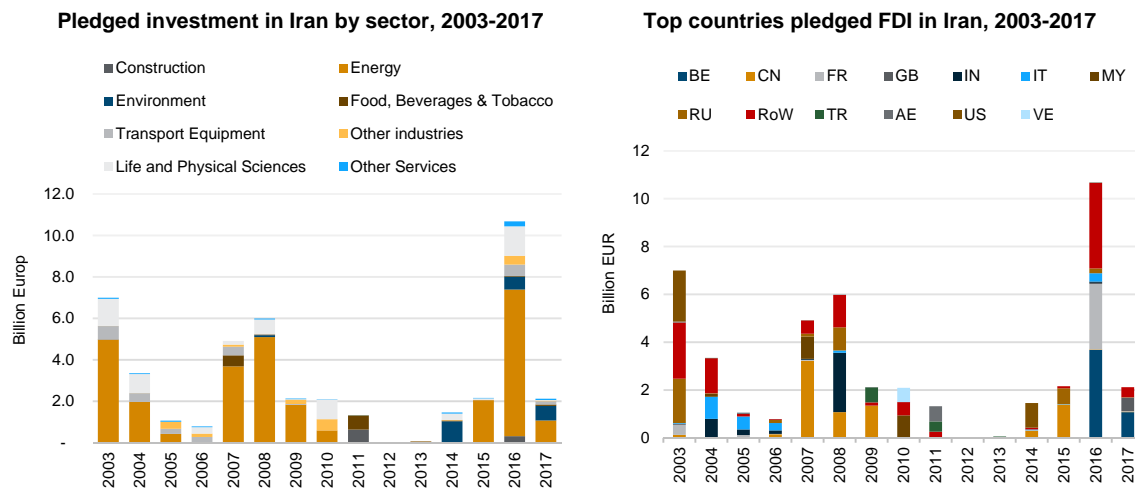
The net FDI inflows presented above were based on the balance of payments, which indicates the realised investment net of divestment. Based on the fDi markets database, EUR 32.3 billion (equivalent to USD 42 billion using yearly average EUR/USD exchange rates) was pledged to be invested in Iran in the period 2003-2015. Given that it takes time until the announced investments are realised in terms of capital flows, this could be close to a total USD 38.4 billion net inflow of FDI to Iran based on the balance of payment source.

Indeed, sanctions are the most important impediment to FDI in Iran. When international sanctions intensified in 2012, no investment project was announced. This was the time when foreign investors were completely avoiding doing business with Iran, fearing large penalties by the countries imposing the sanctions. In 2013, when the sanctions were still in force, the Iraqi Al Iraqiaa broadcasting television network, Zarubezhneftegaz of Russian Gazprom, and Turkish Ugur Cooling announced total investments of only EUR 60 million altogether in their respective sectors of activity. In 2016, after the JCPOA was implemented, foreign investors rushed in to make announcements on new investment projects in Iran. 59 investment projects worth EUR 10.7 billion were announced in 2016 in various

⁶⁴ <https://www.fdimarkets.com/>

sectors of activity. However, after Donald Trump was elected president of the United States, this atmosphere significantly deteriorated. During his election campaign Mr Trump had been referring to the JCPOA as a bad deal and he was threatening to rip it apart after becoming US president. Due to this, the announced capital investment dropped to less than 20% in 2017. Hence, despite the implementation of the JCPOA in 2016, only 19 projects worth EUR 2.1 billion were announced since Mr Trump took office, indicating severe uncertainty.

Figure 43 / Composition of FDI in Iran, by sector, by main origin countries, 2003-2017



Source: fDi markets.

The majority of FDI in Iran goes to the energy sector. In the period 2003-2017, there were 38 investment projects in energy with a total capital investment of around EUR 28.7 billion, of which 35 projects are on coal, oil and natural gas worth EUR 28 billion. 19 investment projects are mainly on extraction sites requiring EUR 18.3 billion. Russian Gazprom (2003), China National Oil & Gas Exploration & Development (2007), and Indian Oil and Natural Gas Corporation (2008) are the only 3 investment projects (worth EUR 6 billion) that are not new projects but extending their previous projects. The largest announced investment since 2003 refers to EUR 3.7 billion by Unit International to build natural gas combined cycle power plants in Iran; this was one of the first large announcements after the JCPOA was signed.⁶⁵

Investment in physical and life sciences is the second largest item, worth EUR 6.2 billion of the pledged investment since 2003. The largest respective capital investment was announced by the Korean Pohang Iron & Steel (POSCO) in 2016, which pledged to invest EUR 1.4 billion in the manufacturing of iron, steel mills, and ferroalloy in the south-eastern poor province of Sistan and Baluchestan, which has some mineral resources. The second largest project was announced in 2003 by the South African Sasol Nitro to invest EUR 700 million in the production of basic chemicals in Assalouyeh, in the South Pars/North Dome Gas-Condensate field where the world's largest natural gas field lies. The total announced investment in this natural gas field stays only at EUR 3.6 billion, covering physical sciences, energy and chemical clusters. While Iran holds the largest gas reserves in the world, due to lack of investment only 5% of its production is exported. However, around 90% of domestic power is generated by natural gas.

⁶⁵ <https://www.reuters.com/article/us-turkey-iran-energy-idUSKCN0YQ0BV>

Further investment in this sector is needed to reach a higher level of exports of natural gas and the refined downstream products.

Investment in transport equipment is the third most important sector attracting FDI to Iran, which is one of the top 10 producers of vehicles in the world. During 2003-2017 around EUR 2.8 billion was pledged to be invested in this sector. In 2016, French Renault, German Daimler AG, and Russian Kamaz each pledged EUR 176 million investment in this sector, with the latter two planning to invest in heavy duty trucks and the French company in the production of automobiles.

The fourth largest investment since 2003 goes to environmental technology and contains only eight investment projects. All these projects were announced after 2008, indicating environmental concerns in Iran. These new projects cover in total EUR 2.5 billion capital investment mostly in renewable energies. Only one project, announced by the Italian Water Treatment and Desalination in 2008 with around EUR 100 million investment, refers to real environmental quality concerns and recycling of water and sewage. Four projects are to build solar power plants with a total investment of EUR 1.1 billion, which were all announced in 2016-2017. In 2016, the German SCHMID Group announced a EUR 50 million investment project to establish a manufacturing plant for photovoltaic electronic components.⁶⁶

Despite about four decades of imposed sanctions, the origin of four projects is the United States with EUR 3.1 billion total capital investment. Three of these were announced in 2003 and the last one in 2014. Nexant pledged to invest EUR 2 billion in the manufacturing of petroleum and coal products in 2003. General Motors pledged to invest EUR 124 million in automobiles manufacturing in 2003. Western Union pledged an investment of only EUR 11.5 million in financial services in 2003. These investments seem to have been ended or abandoned after the intensified sanctions. Finally, in 2014, Eco Energy World pledged a EUR 1 billion investment in a biomass power plant, which seems to have been abandoned after the US withdrawal from the JCPOA on 4 May 2018. Since the US is the home of the largest MNEs and the largest source of FDI to the entire globe, easing sanctions and an Iran-US rapprochement would definitely boost FDI to Iran and hence its economy, something that has been completely missing for four decades.

⁶⁶ <https://schmid-group.com/en/schmid-group/news-events/press-releases/integrated-pv-manufacturing-facility-in-iran/>

6. Summary, conclusions, and challenges ahead

Iran's economy is yet to return to its 1976 peak (in real per capita GDP terms), reflecting the numerous challenges it has faced in recent decades. First, several other suppliers of oil emerged since the 1970s after the Yom Kippur War, which resulted in a decrease in OPEC market power and subsequently Iran's oil revenues. While oil prices increased from an average of USD 4.75 per barrel in 1973 to USD 37.42 per barrel in 1980, Iran's share in OPEC fell from 20% to 6% in the same period. The Islamic Revolution in 1979, the Hostage Crisis, and the war with Iraq all contributed to this. Second, since the Iranian Revolution in 1979, Iran has faced many rounds of sanctions imposed by the United States, which were intensified in 2012 by a coalition of US allies including the EU. Third, mismanagement of the economy has caused periods of recession, high inflation, and currency depreciation during the past forty years. This report has outlined these developments and their effects.

The US-Iran animosity has had strong negative impacts on the Iranian economy for four decades, and has recently damaged Iran's business environment again. Despite very high real GDP growth of 12.5% in 2016/2017, the sanctions relief which had been brought about by the Joint Comprehensive Plan of Action (JCPOA) has not yet been fully felt by the Iranian population. The most important challenge currently facing the Iranian economy is the impact of secondary sanctions that will be imposed by the US after its withdrawal from the JCPOA in May 2018.

As demonstrated in this report, despite positive trends in some areas, Iran has clear shortcomings in terms of its global competitiveness. The economy is run by large state-owned enterprises that have easy access to credits through an inefficient banking system, and through the government budget and also the sovereign funds. These state-owned enterprises are exempted from profit and income taxes which further weakens the fiscal capacity of the central government. The domestic economy is protected by high import tariffs and also by its self-imposed isolation against foreign suppliers, which does not allow Iranian industries to develop via competition in the global markets. This is an important impediment to a dynamic and innovative environment in which domestic firms could evolve. In this context, Iran's external surpluses should be seen as a manifestation of weakness rather than strength, since they reflect above all the low levels of investments and low demand for imported investment goods.

The imprudent policies of Iran at the time of President Mahmoud Ahmadinejad (2005-2013) had significant and negative implications for the economy. On the one hand, his offensive and careless rhetoric made the international community more fearful of Iran, which resulted in intensified sanctions. --- On the other, his foreign policies distracted the public attention from ill-conceived domestic policies. The latter were accompanied by giving extraordinary concessions to hardliners and the Islamic Revolutionary Guard Corps (IRGC). In the process of a failed privatisation, the ownership of some public companies was transferred to a consortium of state-owned enterprises close to the circle of power in Iran. This era was also marked by increased embezzlement, smuggling, and general corruption. Some of this occurred especially at the time of intensified sanctions, which disconnected Iran from transparent international financial transactions. At the same time, proliferation of illegal financial entities as subsidiaries of the large state-owned holding companies gave easy credits to other subsidiaries. Despite strong revenue growth on the back of higher oil prices, money printing was ramped up to finance subsidies to all Iranian households in order to reduce poverty. These subsidies were supposed to be financed through reduction

of subsidies on gasoline, a policy to reduce excessive energy consumption. The policy of budget deficit monetisation led to 40% inflation. At the same time the economy went into recession because of the sanctions.

President Hassan Rouhani (in office since 2013) and his technocratic government have managed to stabilise the economy, with a better diplomatic and foreign policy presence leading to a removal of the sanctions, and with a prudent economic reform agenda at the time of sanctions covering the following five issues:

First, the Rouhani government managed to reduce inflation to less than 10%. If sustained further, this could strengthen the monetary framework and would be a major achievement in the context of the past four decades, although the steep currency depreciation over the past few months, and the imposition of drastic currency controls in response (and the emergence of a 'black market' for foreign exchange), suggest that these achievements are unlikely to be sustained.

Second, the government recapitalised and restructured banks to further safeguard financial stability.

Third, the administration attempted to connect Iran to international financial and currency markets. While sanctions are the major impediments to this, reforms in the banking system were also required, including by addressing Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) frameworks, which are part of the Financial Action Task Force (FATF). While the government asked legislators to adopt the respective law, a lack of political will still hinders the process.^{67,68}

Fourth, around 500,000 new jobs have been created each year since 2013, which is almost seven times the annual job creation during the period 2005-2013 according to the Iranian Statistics Centre.⁶⁹

Fifth, by increasing transparency of domestic policies, Mr Rouhani has been trying to decrease the role of state-owned enterprises as well as that of the IRGC in the economy, which still seems to be one of the big impediments of the whole reform process. As a result of these measures, Iran's economy enjoyed growth in the past few years.

Following the implementation of the JCPOA, economic growth rose. However, this was mostly due to higher production and exports of oil, a capital-intensive sector, which has therefore not translated into similar employment gains. In 2016/17, as oil production reached its capacity, growth slowed down. Meanwhile other (non-oil) sectors have not yet received enough investment to boost the economy further. This is generally evident in the construction sector, which has historically been a good bellwether of the wider performance of the Iranian economy.

Investment has also struggled because Multinational Enterprises (MNEs) and many Western firms feared uncertainties regarding the future relationship between the US and Iran. Although these firms initially showed their interest by rushing in after the JCPOA to sign memoranda of understanding (MOUs) with Iranian delegates and companies, they now fear penalties and punishments from secondary sanctions by the US government. It will be also difficult for other signatories of the JCPOA

⁶⁷ <https://en.mehrnews.com/news/134691/Iranian-lawmakers-suspend-reviewing-FATF-related-bill-for-two>

⁶⁸ https://wapo.st/2ytCQN2?tid=ss_mail&utm_term=.153fd394c8aa

⁶⁹ <https://goo.gl/u9PKku>

(e.g. the EU) to incentivise companies to stay in Iran. For example, it would be costly for other governments to compensate companies for the penalties enforced by the US government.

After the US withdrawal from the JCPOA, the Iranian authorities urged European countries to find strategies to counteract American secondary sanctions. The Supreme Leader of Iran, Ayatollah Ali Khameni, asked that major European countries give guarantees so that Iran stays in the atomic deal.⁷⁰ According to statements by other Iranian officials, it seems that the government is mostly focused on guarantees to allow it to maintain sales of oil, and less on ensuring further foreign direct investment (FDI) from European MNEs. With its relatively high level of human capital, know-how, and access to natural resources, what the economy needs most is the technology to boost its industrial capacities. This could be better achieved through FDI of MNEs from advanced economies which have advantages in high-technology sectors such as chemicals, optics, IT, automobiles, and other manufacturing machineries. However, at present that data show that Iran has stronger trade and FDI links with China and Russia, both of which also lag behind the West in technological advancements.

The best strategy to address these issues, which has been also recently recommended by some domestic political activists⁷¹ in Iran, would be to conduct further negotiations and find a rapprochement with the US. This would also improve expectations with regard to Iran's near economic prospects and help stabilise the exchange rate, thereby setting up prerequisites for a gradual ease of the currency controls in the medium term.

However, there are serious obstacles to a possible new deal between Iran and the US. First, the abrupt change in US policy after President Trump took office calls into question the credibility of a possible future deal with the US from the Iranian perspective. Second, finding a better deal with the US that can fully satisfy the demands of the US government – recently announced by US Secretary of State Mike Pompeo⁷² – would require a lot of concessions on the Iranian side, many of which may be unpalatable (especially in the current economic context).

Although it is not Iran that pulled out of the deal, Iran could still find ways to compromise with the US, especially with Mr Trump, who would like to leave his own legacy behind. Iran has potentially a lot to offer in terms of cooperation with other countries in the region and the fight against terrorism, and this could serve as a basis for any future negotiations with the US. In fact, 7 out of 12 demands by Mr Pompeo that are related to Iran's regional endeavours. However, the chances of serious progress here are extremely small.

Iran also faces many structural and medium-term challenges. First, environmental and climate issues are a serious concern for both Iran and other countries in the region, and could impact the long-term development of the economy. Drought and rationing water in some Iranian cities during the hot summer days have become a regular phenomenon in the past decade. Mismanagement of water resources⁷³ (e.g. construction of dams on Iranian rivers, bridge over Lake Urmia) could be an important cause of drought. The closure of rivers coming from neighbouring countries (e.g. Helmand River from Afghanistan, or Tigris River from Turkey to Iraq) has not only caused further drought in the region, but also increased the occurrence of intense haze. Strong haze and air pollution first affected western and

⁷⁰ <http://english.khamenei.ir/news/5654/Without-definite-guarantee-of-3-EU-countries-we-won-t-stick>

⁷¹ <https://goo.gl/gdxDCJ>

⁷² <https://www.aljazeera.com/news/2018/05/mike-pompeo-speech-12-demands-iran-180521151737787.html>

⁷³ http://wapo.st/TNFPWY?tid=ss_mail&utm_term=.515df2dc52a5

west-southern cities in Iran in the past few years, but now they have reached other cities throughout the Iranian Plateau. Solving Iran's environmental challenges and water crisis requires not only regional cooperation but also global support, especially with technological assistance from advanced economies.

Second, Iran is facing electricity shortages as its dams and hydroelectricity power plants become less productive⁷⁴, which can cause stoppages in industry during the summer. Solving this problem requires substantial investment in other sources of power production such as solar and wind fields, for which Iran is a very good geographic location. While a number of greenfield investments have been announced by some European firms and some have also materialised⁷⁵, they might not continue with secondary US sanctions. However, Chinese companies in these industries might be willing to stay in Iran as their exports of solar panels to the US face protectionist tariff hikes.⁷⁶

Third, according to a survey by the Center for Strategic Studies of the Presidency, the increased poverty and unemployment of the youth were crucial factors behind the protests across many cities in Iran during the first days of 2018. Reducing poverty is an important issue in Iran. From 2009 to 2013, with the aforementioned universal cash transfers to all Iranians, poverty is estimated to have been reduced from 13.1% to 8.1%. However, in 2014/15 it rose again to 10.5% due to inflation. Income equality and eradication of poverty have been major slogans of the Islamic Revolution, which was perceived to be simply achieved through oil revenues. However, it has turned out to be rather symbolic and populist because Iranian domestic policies have never managed to achieve these goals facing the above-mentioned challenges.

Finally, given the demographic changes, and a large young population, Iran currently needs the creation of jobs more than before. With a very low labour participation rate of 47%, Iran's rate of employment in 2017 stood at 13%. Besides, the pension system in Iran is in trouble as 17 of 18 pension funds are allegedly bankrupt.⁷⁷ The largest pension fund is managed by the Social Security Organisation of Iran, which is also reported to be on the verge of bankruptcy. Furthermore, the government owes about USD 36 billion debt to this public Organisation.⁷⁸ The pension system, which is already facing a number of problems, needs further to respond to the increasing number of elderly Iranians in the longer term, which represents a noticeable long-term challenge of the Iran economy. This shows that Iran needs to solve the poverty problem by investment and creating jobs, and a better fiscal framework, which is a more sustainable approach than poverty reduction by offering cash transfers.

To conclude, Iran faces a number of challenges, most of which will be exacerbated by increased international isolation. What Iran would need most now is a constructive relationship with the West in order to improve its economy and the living conditions of its citizens through not only larger oil revenues but also FDI and technological transfers, as well as to obtain international support in fighting regional challenges such as the fight against extremism and terrorism and the environmental crisis that threatens the future generations in the region.

⁷⁴ <https://goo.gl/wyuwrz>

⁷⁵ <http://www.euronews.com/2017/07/31/largest-solar-power-plant-in-iran-opens>

⁷⁶ <https://www.vox.com/world/2018/1/23/16920984/solar-panel-china-trump-tariff-washers-south-korea>

⁷⁷ <https://goo.gl/UfztL5>

⁷⁸ <http://www.iranobserver.org/irans-social-security-in-trouble-as-government-owes-36-billion-to-fund/>

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Herausgeber, Verleger, Eigentümer und Hersteller:

Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Nachdruck nur auszugsweise und mit genauer Quellenangabe gestattet.

Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.



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