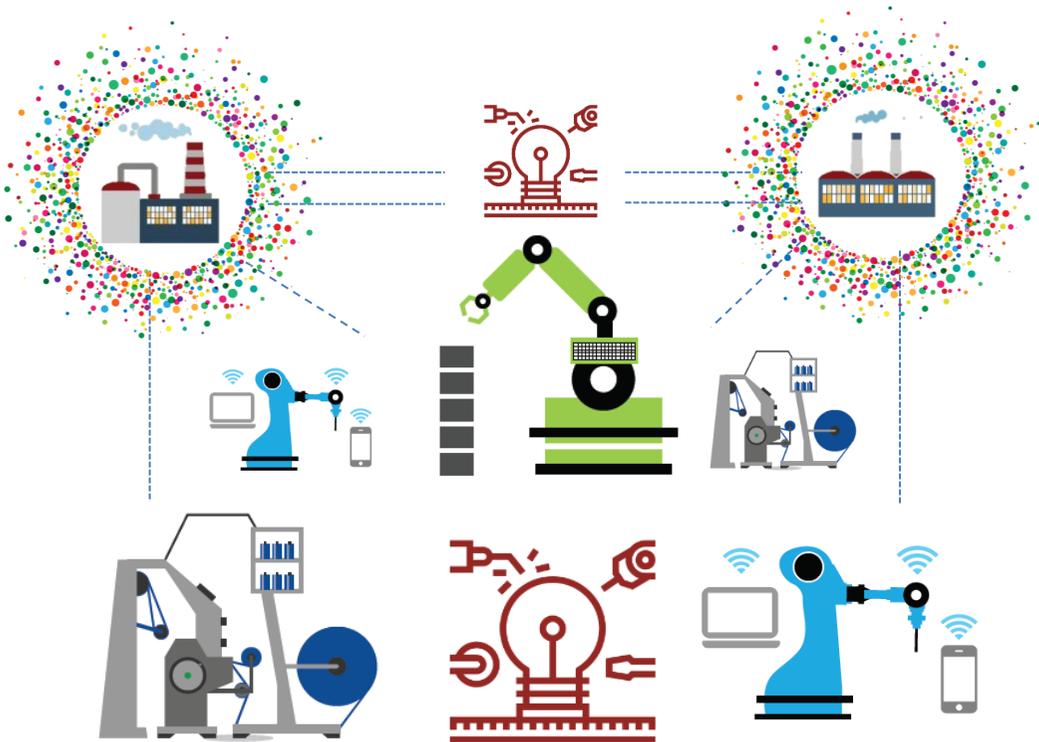




OIC ECONOMIC OUTLOOK 2017

Industrial Development for Structural Transformation



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Acronyms

ADB	Asian Development Bank
ADFIMI	Association of National Development Finance Institutions in Member Countries of the IDB
AfDB	African Development Bank
AiIB	Asian Infrastructure Investment Bank
CEE	Central and Eastern Europe
CIP	Competitive Industrial Performance
DOTS	Direction of Trade Statistics
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIB	European Investment Bank
EU	European Union
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GATT	General Agreement on Tariffs and Trade
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GNI	Gross National Income
GTAI	Germany Trade and Invest
GVC	Global Value Chain
HIPC	Heavily Indebted Poor Countries
IADB	Inter-American Development Bank
ICT	Information and Communication Technology
IDB	Islamic Development Bank
IFS	International Financial Statistics
ILO	International Labour Organisation
IMF	International Monetary Fund



IMP	Industrial Master Plan
IoT	Internet of Things
IPR	Intellectual Property Rights
ISI	Import Substitution Industrialization
ISIC	International Standard Industrial Classification
KILM	Key Indicators of Labour Market
LAC	Latin America and the Caribbean
LDC	Least Developed Countries
MDB	Multilateral Development Bank
MENA	Middle East and North Africa
MIT	Massachusetts Institute of Technology
MOOC	Massive Open Online Course
MVA	Manufacturing Value Added
NEP	New Economic Policy
ODA	Official Development Assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
OIC	Organisation of Islamic Cooperation
PPP	Purchasing Power Parity
R&D	Research and Development
RCA	Revealed Comparative Advantage
RER	Real Exchange Rate
RTA	Regional Trade Agreement
SAP	Structural Adjustment Programme
SDG	Sustainable Development Goal
SEZ	Special Economic Zone
SIDF	Saudi Industrial Development Fund
SIID	Strategy of Industrial and Innovation Development
SME	Small and Medium-sized Enterprise
SOE	State-Owned Enterprise
SPAIID	State Program of Accelerated Industrial-Innovative Development
SSA	Sub-Saharan Africa
STI	Science, Technology and Innovation
TOT	Terms of Trade
TPS-OIC	OIC Trade Preferential System

TSKB	Industrial Development Bank of Turkey
UAE	United Arab Emirates
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organization
UNSD	United Nations Statistics Division
USA	United States of America
USD	United States Dollar
WB	World Bank
WDI	World Development Indicators
WEF	World Economic Forum
WEO	World Economic Outlook



Foreword

Recent global economic developments and prospects show that world manufacturing and trade activities are strengthening with financing conditions remaining tranquil, and commodity prices being largely stabilized. Global economic growth rate is expected to be recorded at 3.5% by the end of 2017 and projected at 3.6% in 2018. The positive economic outlook for the USA and Euro area in 2017, supported by the strong domestic demand, seems to support the world economic growth. Economic activities in the group of developing countries remain vibrant and, on average, the group is expected to record an increase in economic growth rate that will climb up from 4.5% in 2017 to 4.8% in 2018.

However, though they constitute a substantial part of the group of developing countries, the average economic growth rates of the group of the OIC member countries appear to be negatively affected by declining commodity prices as well as ongoing regional conflicts. The average growth rate of the group of OIC countries is expected to be recorded at 3.2% in 2017, a rate which is slightly below the world average. This implies the need for more effective macroeconomic economic policies with a view to strengthening economic resilience through more coherent structural transformation and economic diversification.

Given such a state of affairs, this edition of the “OIC Economic Outlook” Report focuses on the aspects of industrial development for structural transformation in OIC countries. In fact, the industrial policies for structural transformation have been so far a controversial issue for many reasons. Today, however, there is a renewed interest in industrial policy to achieve greater competitiveness in the world economy. This interest is, interestingly, stronger in developed countries than in developing countries. In order to narrow the gap in economic development and reduce the level of economic concentration, OIC countries need to refocus their attention to economic diversification in manufacturing sector. While perusing and benefiting from the previous global and regional experiences, the OIC countries should address the hindering factors that prevent achieving successful industrialization levels. In this connection, the report highlights some policy measures for accelerating industrial development through designing appropriate industrial policies for structural transformation.

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Section 1 on Recent Economic Developments in the World and Section 2 on Production, Growth and Employment in OIC countries are prepared by Mazhar Hussain. Section 3 the report on Trade and Finance in OIC countries is prepared by Cem Tintin. Part III of the report, including Section 4 on Refocusing on Industrial Development for Structural Transformation, Section 5 on Industrial Development Trends and Opportunities in OIC Countries, Section 6 on Designing Industrial Policies for Structural Transformation, and Section 7 on Policy Measure for Accelerating Industrial Development, is prepared by Kenan Bağcı.



Executive Summary

RECENT ECONOMIC DEVELOPMENTS IN THE WORLD

World Economic Trends and Prospects

Growth

After bottoming out in 2009, global economy has since been experiencing positive growth rates. During the period 2012-2015, global growth has been oscillating at a narrow band between 3.4% and 3.5% before declining to 3.1% in 2016. This mix performance of the global economy is largely influenced by the macroeconomic conditions in emerging economies and historic sharp decline in commodity prices, especially for oil. After demonstrating signs of recovery since the second half of 2016, the growth rate of the world economy is predicted to reach 3.5% by the end of this year. The positive economic outlook for the USA and Euro area in 2017, supported by the strong domestic demand, seems to fuel the world economic growth. As a result, by following the positive momentum in 2017, it is predicted that the global economy will grow by 3.6% in 2018. Even though some signs of recovery have been seen in developed countries, developing countries still have been fuelling the world output growth. For instance, it is forecasted that the growth rate in China will be 6.6% in 2017. Collectively, developing countries in Asia will be the fastest growing region in the world in 2017.

Investment

Investment plays a critical role in restoring and sustaining economic growth. Studies show that countries with high investment rates can potentially sustain their positive economic growth momentum. By 2016, 35.9% of GDP goes to investment in developing countries and it constitutes only 20.8% of GDP in developed countries which partially explains the relatively higher momentum in developing countries. Investment shares are on the rise globally in 2017 and it is expected to continue in 2018. These figures also draw a more optimistic picture for the future growth rates.

Trade

International trade is a stimulus for growth both in developed and developing countries. Growth in export and import is likely to remain slow across the world. Among developing countries, the emerging and developing Asian economies outperform other sub-regions of the

world in the recent years especially in exporting. Growth rate of exports in 2017 is expected to exceed 3.5% in developed countries and 3.6% in developing countries. As in the case of their export performance, the developing countries have a higher growth in imports than in the developed countries. Growth rate of imports in 2017 is expected to exceed 4.0% in developed countries and 4.5% in developing countries.

Current Account Balance

With regard to current account balances, developed countries generate surpluses during the period of 2012-2016 and this will continue in 2017 and 2018. On the other hand, developing countries could not sustain the surplus and recorded deficit since 2015. However, among the developing regions, the emerging and developing Asian countries successfully generated current account surplus. In contrast, Middle East and North Africa countries, which recorded surplus during the first three years, were hard hit by the decline in oil prices in 2015 and 2016 and recorded huge deficits. In 2017, the surplus is expected to be 0.7% of developed countries' GDP whereas the deficit will constitute 0.3% of developing countries' GDP.

Fiscal Balance

Fiscal balances have started to improve systematically in the developed countries as the tightening policies have been implemented. Fiscal balances as a percentage of GDP continue to decrease in these economies in 2017 and it is projected to be -2.7% of GDP. This implies that the fiscal tightening policies especially in the Euro area started to pay. Developing countries also have negative fiscal balances but were in relatively better position than the developed countries until 2014. In 2016, the ratio was observed as -4.8% and is expected to be -4.4% in 2017. Oil producers, which have had a positive fiscal balance ratio in 2012-13, were hard hit by the declining oil prices. Their fiscal surpluses decrease sharply in accordance with the decline in the oil prices since 2015. The fiscal balance was recorded at -4.9% in 2016 compared to 1.6% in 2012.

Inflation

Because of the lower commodity prices, global inflation eased to 2.8% in 2016. With the mildly expansionary fiscal policies and rebound in commodity prices in accordance with the output growth seem to increase the consumer prices on average in the world in coming years. As a result, inflation rate will increase to 3.5% in 2017, and it is expected to be around 3.4% in 2018. It is also seen that the price volatility does not pose a threat both in developed and developing countries in the recovery period. In line with the inflation rate, commodity prices (energy, food and metals) have been slowing down since 2012. Afterwards, commodity prices started to stabilize in 2013 and 2014 before witnessing a sharp decline in 2015. For instance, the energy prices index decreased from 117 in 2014 to 82 in 2016.

Unemployment

Despite recovery in the economic activities, the global unemployment, measured as 5.7% on average in 2016, remains as an important challenge for countries. In particular, high youth unemployment is still a major concern worldwide. Unemployment in youth not only increases



the overall unemployment rate but also raises social tension in the societies. Moreover, it demotivates the young generation for education and skills upgrading. Youth unemployment rate was recorded as 12.8% in 2016 which is only 0.1 percentage points lower than in 2015.

RECENT ECONOMIC DEVELOPMENTS IN OIC COUNTRIES

Production, Growth and Employment

Production

OIC countries witnessed an increasing trend in economic activity and their GDP increased from US\$ 14.9 trillion in 2012 to US\$ 18.3 trillion in 2016. As a group, the OIC countries produced 15.3% of the world total output based on PPP and 26.3% of that of the developing countries in 2016. In current prices, the share of OIC countries in world total GDP is measured as only 8.4%. Considering the fact that the individual countries such as United States and China had higher shares than that of the OIC countries as a group (15.5% and 17.8%, respectively in 2016), it can be stated that the contribution of the OIC countries to the world output is below their potential.

The average GDP per capita in OIC countries has also increased continuously and reached US\$ 10,729 in 2016, compared to US\$ 9,430 in 2012. The gap between the average per capita GDP levels of the OIC member countries and those of non-OIC developing countries has widened over the years. The average per capita GDP differential between OIC countries and non-OIC developing countries was recorded at US\$ 612 in 2016.

Growth

The GDP growth of OIC countries has slowed down to 3.7% in real terms in 2016, as compared to 5.4% in 2012. Although this is in line with the persistent slowdown in across-the-board economic activity, which started to take hold in 2011, prospects for growth in OIC countries remained bleak amid the decline in oil prices and resulting macroeconomic distress and sharp downward revisions to growth forecasts for oil exporting countries like Saudi Arabia, Iraq, Iran, Nigeria and United Arab Emirates. The average rate of growth in the OIC countries will likely to halt further in 2017, with average growth rate forecasted to be around 3.2%. This slowdown is expected to be reversed in 2018 with an expected growth rate of 3.9%.

The average growth rate of the real per capita GDP in the OIC countries has been positive during the period 2012-2016. However, a similar downward trend, as in the case of real GDP growth, is also observed for real GDP per capita growth rates in OIC countries. The average real GDP per capita growth rate in OIC countries was recorded at 1.8% in 2016 and is forecasted to decrease further to 1.4% in 2017 before recovering to 2.2% in 2018.

Production by Sectors

The analysis of value-added by major sectors in the total GDP of the OIC countries and non-OIC developing countries shows a similar structure. In terms of the average shares of the value-added of the four major sectors in the OIC GDP in 2015, service sector recorded the largest

share with 52.8%, followed by the industrial sector (both manufacturing and non-manufacturing) with 36.7%, while the share of agriculture, fishing and forestry was relatively small (11.0%). While the share of services sector is expanding over the years, the shares of other sectors follow a declining trend.

GDP by Major Expenditure Items

When the shares of the major expenditure items in the total GDP are considered, final household and government consumption continued to be the highest in the total GDP over the years. In 2015, the OIC household consumption accounted for the lion share of 58.9% followed by gross capital formation (26.8%) and general government final consumption (15.2%). These figures marked an increase in the shares of both consumption types compared to the previous year. However, the share of net exports in the total GDP of the OIC member countries has decreased by 7.9 percentage points since 2000 whereas the share of gross capital formation has increased by 6 percentage points over the same period.

Unemployment

OIC countries recorded significantly higher average unemployment rates compared to the world and non-OIC developing countries during the period 2000-2016. During this period, total unemployment rates in OIC countries changed between 7.4% and 9.1%. Average unemployment rate in non-OIC developing countries remained significantly lower (around 2-3%) than the OIC average throughout period under consideration, which is expected to remain at 5.1% in 2016. Unemployment rates for male labour force are typically lower than the rates for female in all country groups. Despite significant improvement since 2005, female unemployment in OIC countries remains highest with 9.3% in 2016. Meanwhile, male unemployment in OIC countries is expected to decrease to 6.6% in 2016. The figures on youth unemployment in OIC countries are even less promising. As of 2017, youth unemployment in OIC countries is expected to remain at 16.2%, while it will decline to 13.3% in developed countries and remain at 11.5% in non-OIC developing countries.

Labour Productivity

Globally, labour productivity has witnessed an increasing trend during the period 2010-2015. The output per worker in OIC countries has increased from US\$ 19,400 in 2000 to US\$ 26,500 in 2016. This upward trend was only affected by financial crisis in 2008 during the whole period under consideration. The labour productivity gap between the developed and developing countries remained substantial throughout this period as an average worker in the group of non-OIC developing countries produces only 24.0% of the output produced by an average worker in the developed countries and an average worker in OIC countries produces only 28.8% of the output produced by an average worker in the developed countries.

Inflation

During the period under consideration, inflation was on the decline across the globe reflecting primarily the impact of decline in prices for oil and other commodities, and weakening demand in some advanced economies. In the OIC countries, average inflation rate for 2016 was higher



than the world average. Unlike the global trends, inflation in the OIC countries remained stable around 6.0%. The average consumer price index marked an increase of 27.8% in the OIC countries during 2012-2016. This is well above the average increase recorded in non-OIC developing countries (22.5%) as well as in the world (11.4%) during the same period.

Fiscal Balance

In the wake of tightening policies implemented especially in the developed countries and sharp decline in commodity prices especially for oil, fiscal balances are showing a mix trend across the world. During the period under consideration, the OIC member countries as a group witnessed sharp decline in their fiscal balance after 2013. In 2016, OIC countries recorded fiscal balance of -6.0% of GDP. This sharp increase in fiscal deficit in OIC countries is largely triggered by the sharp decline in oil prices and consequently deteriorating fiscal position of oil exporting OIC countries. The fiscal deficit is, however, expected to improve to -4.0% in 2017 before declining further to -3.0% in 2017.

Trade and Finance

Merchandise Trade

Total merchandise exports from OIC countries have been falling since 2014. In 2016, total exports of OIC countries continued to fall and reached its lowest level since 2009 with US\$ 1.4 trillion. As a result, the share of OIC countries in total exports of developing countries plunged to 22.4% in the same year, compared to 30.1% in 2012, and continued to remain below its pre-crisis level of 32.1% observed in 2008. OIC countries' collective share in total world merchandise exports also followed a similar trend between 2012 and 2016, and decreased to 8.8% in 2016, which is the lowest ratio observed since 2005.

Total merchandise imports of OIC countries experienced a stronger post-crisis bounce-back and increased from \$1.2 trillion in 2009 to \$1.9 trillion in 2014. However, OIC countries also witnessed a fall in imports over the period 2015-2016, which was measured at US\$ 1.6 trillion in 2016. The share of OIC countries in global merchandise imports reached 10% in 2016, compared to 7.3% in 2006. Similarly, their share in total developing country merchandise imports was recorded at 26.7% in 2016, dropping from 27.4% in the previous year.

Services Trade

The OIC countries as a group continued to be net importer of services. They collectively exported US\$ 324 billion worth of services in 2016 and imported US\$ 491 billion in the same year. Between 2009 and 2014, services trade volume of OIC countries exhibited a constant increase, but the years 2015 and 2016 witnessed a fall in both exports and imports of services. Accordingly, OIC shares in developing country services exports and imports dropped to 21.0% and 25.3% in 2016. While the collective share of OIC member countries in the total world services exports increased from 6.1% in 2005 to 6.6% in 2016 and their share in the total world imports increased from 8.7% to 10.3% during the same period.

Intra-OIC Merchandise Trade

OIC countries registered a total of US\$ 540 billion intra-OIC merchandise trade in 2016. In the post-crisis period, intra-OIC trade registered a relatively stronger upturn compared to the OIC countries' trade with the rest of the world. Accordingly, as of 2016, intra-OIC trade accounted for 19.4% of OIC countries' total merchandise trade. Intra-OIC exports were recorded at US\$ 263 billion in 2016, as compared to US\$ 287 billion in 2015. Intra-OIC imports, on the other hand, were recorded at US\$ 276 billion in 2016, registering a major decrease compared to its value of US\$ 352 billion observed in 2013.

FDI Flows and Stocks

World total FDI inflows amounted to US\$ 1.75 trillion in 2016, of which 35.9% was attracted by developing countries. FDI flows to OIC countries, on the other hand, continue to remain below its potential. In 2016, OIC countries were able to attract only US\$ 96.3 billion FDI, compared to US\$ 103.8 billion in 2015. The shares of OIC countries in both developing countries and global FDI inflows were recorded at 15.4% and 5.6% in 2016, respectively. Of US\$ 26.7 trillion global inward FDI stock in 2016, OIC countries hosted only 6.6%. In a similar vein, in 2015 intra-OIC FDI inflows continued to remain under its potential and a few OIC countries including Egypt, Turkey, Mozambique and Morocco attracted more than US\$ 1 billion FDI from other OIC countries.

Financial Sector Development

The level of financial sector development in OIC countries remains shallow. As a sign of low financial deepening, the average volume of broad money relative to the GDP in OIC countries was 68.2% in 2016, compared to 112.7% in non-OIC developing countries and 116.4% in the world. In the same year, the domestic credit provided by the financial sector in OIC countries was on average equivalent to 62.7% of the GDP whereas this figure was 120.5% in non-OIC developing countries and 176.9% in the world.

External Debt and Reserves

The total external debt stock of OIC countries continued to increase and it reached US\$ 1.52 trillion in 2015. Average debt-to-GDP for the indebted OIC countries increased to 23.7% in 2015 compared to 20.8% in 2010. During the same period, total external debt stock of OIC countries as percentage of total developing countries debt decreased slightly from 25.0% to 22.9%. Reserves are usually considered as an important instrument to safeguard the economy against abrupt external shocks. World total monetary reserves, including gold, reached US\$ 11.6 trillion in 2016, of which US\$ 1.5 trillion are owned by OIC countries. The share of OIC countries in total reserves of the developing countries declined from 23.5% in 2013 to 22.4% in 2016.

ODA and Remittances

In 2015, net ODA flows from all donors to developing countries reached US\$ 97.4 billion. In the same year, OIC countries, with US\$ 49.4 billion, accounted for 50.7% of the total ODA flows to developing countries. In 2015, the top 5 member countries received 36.4% of total ODA flows



to OIC countries whereas the top 10 received 57.5% of them. The inflows of personal remittances to OIC member countries increased from US\$ 92.7 billion in 2009 to US\$ 140.6 billion in 2014, but declined to US\$ 134.9 billion in 2015. Remittances flows to non-OIC developing countries followed a positive pattern during the 2009-2015 period, which increased from US\$ 196 billion in 2009 to US\$ 305 billion in 2015.

INDUSTRIAL DEVELOPMENT FOR STRUCTURAL TRANSFORMATION

Refocusing on Industrial Development for Structural Transformation

Economies of a significant number of OIC countries are characterized by high dependence on primary commodities. Prices of primary commodities have been quite volatile, which deteriorate macroeconomic management and economic development perspectives. For such economies, it is particularly important diversify manufacturing production base in order to reduce the macroeconomic risks associated with dependence on primary commodities.

In some other countries, there is an issue of ‘premature deindustrialization’, under which the share of manufacturing in GDP and total employment starts to decline much earlier than seen in today’s advanced economies. This may be a serious threat to growth in some OIC countries, restricting the growth potential of manufacturing industries for technological learning and innovation, economic development, job creation, and the creation of a middle class.

In this connection, there is a need for refocusing on industrial development for structural transformation in OIC countries. Structural transformation entails movement of labour and other productive resources from less productive economic activities to high productive ones and characterized by a decline in the relative share of the primary sector in GDP and a rise in the share of industry, which comprises manufacturing, but also mining and quarrying, construction, and utilities.

It is documented that economic activities in manufacturing sector have been linked to higher productivity growth compared to those in agriculture sector. It is also shown that over the last two centuries, economic growth has been associated with falling employment and value added shares of agriculture. Even after 1991, it is observed that share of agriculture in total value added constantly falls in developing countries, including OIC countries.

Implementing industrial policies for structural transformation has been a controversial issue for many reasons. In practice, there are successful examples of countries, particularly in East Asia, where industrial policy is associated with successful structural transformation and economic diversification. There are also plenty of cases where government interventions failed to yield the desired outcomes in terms of industrial development. Overall, international experience has decisively indicated that excessive inward-looking policies inhibit development in the long run because domestic economies were denied a great source of information, technology and, most importantly, competition.

Today, there is a renewed interest in industrial policy to achieve greater competitiveness in the world economy. Astonishingly, this interest is stronger in developed countries than in developing countries. In order to narrow the gap in economic development and reduce the level of economic concentration, OIC countries need to refocus their attention to economic diversification in manufacturing sector. They should target to become competitive in a variety of products at the highest feasible levels of quality. They should also implement policies to rapidly spread these capacities to build clusters of firms that generate new jobs to utilize the productive capacity of youth and skilled labour force.

Industrial Development Trends and Opportunities in OIC Countries

OIC member countries have been characterized with high heterogeneity in terms of level of development, resources and growth potentials. While there are enormous potentials in certain aspects in enhancing multilateral cooperation and development, there are also often serious challenges in fostering economic relations among the OIC member countries.

Over the last several decades, industrial development process in OIC countries, as a group, has been rather sluggish. The share of OIC countries in global manufacturing value added (MVA) is constantly rising along with the rise in the share of global GDP. The share of OIC countries in total MVA was only 4.9% in 1990, which increased to 5.8% in 2000 and 7.7% in 2016. Despite the steady increase and given the existing potentials in terms of human capital, energy resources, and market potential, the current level of contribution to global MVA is far from being satisfactory.

Notwithstanding the varying growth performances across OIC countries, total MVA in all OIC countries continued to be dominated by few member countries. With a share of 23.8%, Indonesia alone accounts almost one fourth of all MVA in OIC countries, followed by Turkey (15.6%), Saudi Arabia (8.6%), Malaysia (8.4%) and Iran (6.4%). Top five OIC countries account for 62.8% of total MVA in OIC countries.

With regard to the contribution of major manufacturing sectors to total employment, food and beverages sector employs the largest share of labour force in manufacturing with a share of 16.9% and its share has been increasing since 2004. In terms of total output, top three sectors (Food and beverages; coke, refined petroleum products and nuclear fuel; and chemical products) account for 47.7% of all output in manufacturing and their shares are increasing over time. The same sectors collectively account for 44.4% of total MVA in OIC countries as of 2014.

Evidently, there is a strong growth in manufacturing activities in OIC countries since more than two decades, but the share of manufacturing sector in total employment and value added is still low. There is a strong growth in trade deficit in manufacturing products, reflecting the inadequate manufacturing production capacity in OIC countries. However, a well-diversified economy requires a strong and sophisticated manufacturing industry in order to enhance and retain its competitiveness in the global economy. Moreover, according to UNIDO's Competitive



Industrial Performance (CIP) index, OIC countries continue to remain less competitive than other country groups in industrial performance.

Designing Industrial Policies for Structural Transformation

An important step in achieving economic diversification and industrial development is a well-designed industrial policy. While designing the policy, it is critical to understand the issues behind the successful and failed experiences of previous industrialization attempts, identification of sectors and industries where individual countries can invest with existing resources, capacities and prevailing multilateral agreements and other external conditions. It is also important to utilize other economic policy instruments in order to complement and support the industrial development process.

Industrial policies can be designed to support specific sectors only (selective policies) or improve overall business and investment climate by supporting the operation of markets in general (horizontal policies). If the focus is selective policies, governments need to be very careful in identifying priority sectors for support. These sectors should be closely related to existing areas of production and make use of the economy's existing set of capabilities and skills. Governments may also facilitate 'product discovery' by the private sector and the emergence of new competitive products.

A closer look at the existing patterns of comparative advantages in OIC countries reveals that most of the OIC countries have comparative advantage at sectors and products that are less suitable for product development and diversification. These sectors are largely agricultural, mineral and primary products with little processing and technological content, if any. Therefore, industrial policy should support countries in discovering and realizing their dynamic comparative advantage. While recognizing the importance of horizontal industrial policies, the selective policies are important in the process of developing dynamic comparative advantage.

In addition to policies that favour specific industries and firms, there are also industrial policy measures that are generic to most of the sectors and firms in the national economy and there is no special treatment at sector or firm level. Trade policy options diminished after the formation of the WTO, but there are still some alternatives for developing countries. A pre-condition for trade policy to foster industrialization is that it must be highly selective. However, selective industrial policy is typically at odds with competitive policy, while functional industrial policy instruments are more likely to complement with competition policy. Therefore, industrial policy should not favour incumbents but rather promote entry into markets for facilitating the discovery of productive advantages. Moreover, a competitive exchange rate and an active industrial policy will favour economic diversification and productivity growth. Policymakers also need to understand global trade and constraints by multilateral agreements with many complicated rules.

Whatever strategy is adopted, implementation process should be carefully managed. A common issue is that industrial policies are too easily captured by politically powerful groups

who then manipulate it for their own purposes rather than for structural transformation. Effective implementation of selective industrial policy requires having monitoring and evaluation mechanism in place.

Policy Measures for Accelerating Industrial Development

Industrial development requires inclusive strategies that bring in all potential actors who can contribute to the development process. Starting from individuals to finance institutions, probably most segments of a society can be supportive part of this process. However, in all cases, governments will have facilitator role, because they will have the oversight on capacities, resources and requirements for successful transformation. They are in a position to raise people's spirit to engage in entrepreneurial activity, innovative SMEs to enter foreign markets, identify the gaps in human capital, infrastructure and institutions and bridge those gaps, establish special finance institutions and financial mechanisms to finance industrial development projects, build the technology and innovation capacity of their countries and engage in regional partnership to make use of potentials of greater markets.

Innovation is a critical dimension of industrial competitiveness and it requires risk taking behaviour. The tolerance of entrepreneurs is particularly high in risk taking. They engage in a 'cost-discovery' process to find out whether new goods can be produced at lower cost and sold at competitive prices. Therefore, it is important to integrate entrepreneurship development into their industrialisation strategies. Similarly, small firms can also be a source of dynamism. However, they face challenges and constraints in multiple fronts. Since these challenges differ across countries, it is important to identify them before designing policies and integrate the solutions into industrial development programmes. It is also key to support innovative SMEs to become exports.

Many governments have ambitious industrial development plans that target a number of strategic industries. Realizing these goals requires the allocation of adequate financial resources to these industries and providing credits at favourable rates. In such cases, development banks play a key role in allocating the resources to strategic industries. Many countries are also facing challenges in terms of human capital, infrastructure and institutional capacity. It will be impossible to achieve industrial development without addressing the gaps in these areas.

In order to achieve industrial development, it is fundamental to build technological capacities to be able to utilize latest technologies, design innovation policies to promote in-house innovation activities, and get prepared for the future opportunities and challenges, including those related to Industry 4.0. Finally, there is a need to create a synergy between trade and investment policies of the member countries, with particular attention given to the measures that stimulate product value chains in industrial development.



PART I: RECENT DEVELOPMENTS IN THE WORLD ECONOMY





CHAPTER ONE

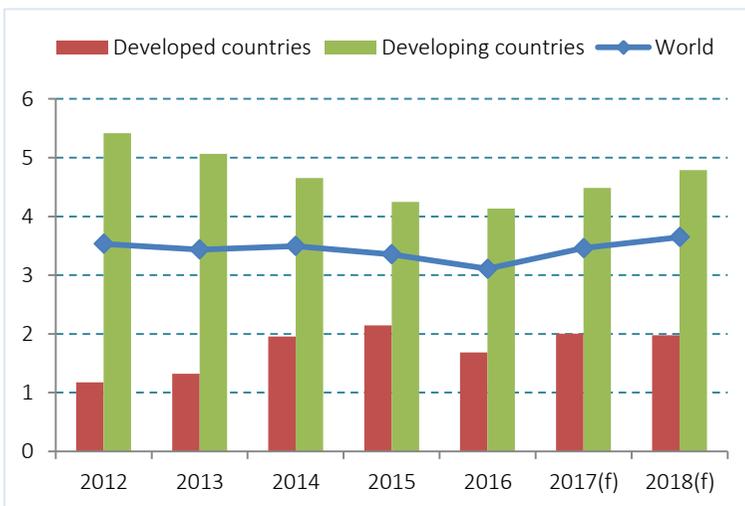
World Economic Trends and Prospects



After bottoming out in 2009, global economy has since been experiencing positive growth rates. So far, recovery in global economy has mainly stemmed from positive economic growth rates occurred in developing countries. Though the global economic recovery continued since 2009, growth rate has decelerated in the recent years (Figure 1.1). During the period under consideration, global growth has been oscillating in a narrow band between 3.4% and 3.5% before declining to 3.1% in 2016. This mix performance of the global economy is largely influenced by the macroeconomic conditions in emerging economies and historic sharp decline in commodity prices, especially for oil. Nevertheless, global economic activity is gaining momentum as the growth picked up especially in advanced economies and subsequent strengthening of commodity prices (IMF, 2017). After demonstrating signs of recovery since the second half of 2016, the growth rate of the world economy is predicted to reach 3.5% by the end of this year. The positive economic outlook for the USA and Euro area in 2017, supported by the strong domestic demand, seems to fuel the world economic growth. As a result, by following the positive momentum in 2017, it is predicted that the global economy will grow by 3.6% in 2018 (Figure 1.1).

In general, developing countries have fuelled the world output growth rate since 2012, but the growth rates in these countries are steadily declining. While major developed economies remained sluggish, their overall growth performance started to improve. Nevertheless,

Figure 1.1: GDP Growth in the World



Source: IMF, World Economic Outlook, April 2017, (f:forecast).

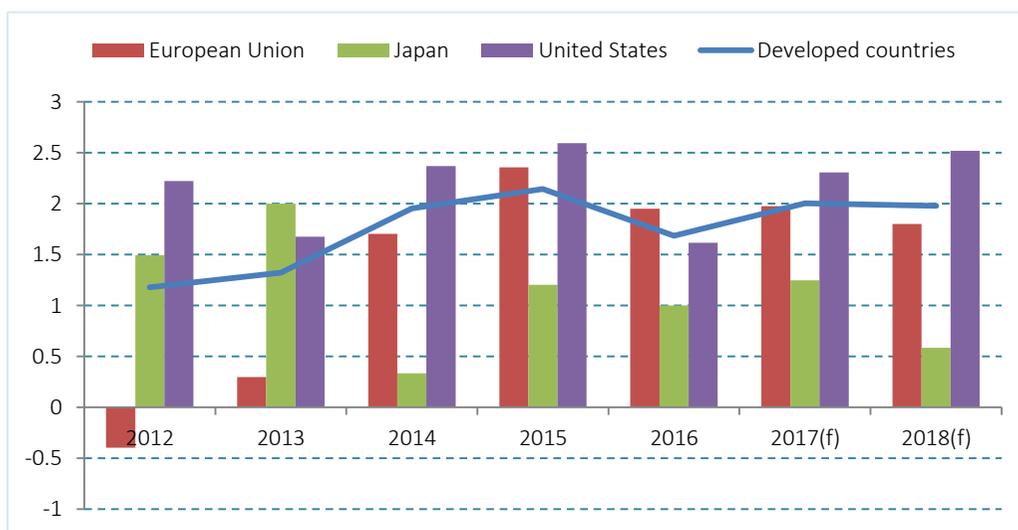
developing countries are expected to grow by 4.1% in 2016, which is almost 2.5 percentage points higher than the developed countries, and will continue to support the growth in the world economy. Developing countries are expected to see an increase in the average growth rate that will climb up from 4.5% in 2017 to 4.8% in 2018.

▪ Growth is picking up in developed countries

Output growth in developed countries has witnessed an upward trend since 2012 and it is expected to be around 1.7% in 2016. Though this rate is still 0.5 percentage point lower than the growth rate in 2015, it is projected that developed countries will start to grow in 2017 with an increased growth rate of 2.0%. In most of the developed economies, the pace of economic activity is expected to accelerate in 2017 and 2018.

Figure 1.2 shows that the European Union has witnessed positive growth rates after registering a negative growth rate of 0.4% in 2012. Supported mainly by the mild expansionary fiscal stance and positive financial situation, economic activity will solidify in European Union with a growth rate of 2.0% in 2017. The positive outlook for 2017 will help building up the confidence in the European Union and expected to have a positive effect on the world economic output growth. Nevertheless, growth is forecast to soften in some European economies like Germany, Italy and Spain. Therefore, the medium term outlook for the euro area as a whole remained dim (IMF, 2017). The stronger-than-expected net exports are supposed to support the output growth of over 1.0% in Japan in 2017. However, the economy is expected to contract by 0.7% in 2018.

Figure 1.12 GDP Growth in Developed Countries



Source: IMF, World Economic Outlook, April 2017, (f:forecast).

The US economy has witnessed positive growth trends over the years. The US economy recovered rapidly by growing at a rate of 2.4% and 2.6% in 2014 and 2015, respectively. In 2016, however, the growth rate dwindled substantially to 1.6%. In 2017, the US economy is expected to grow by 2.3%, and in 2018, the US economy will speed up and the output growth will reach to 2.5%. This positive growth trend will not only nurture the world economic output but also will help recovery in the European Union, the main trade partner of the US.

▪ Developing economies continue to lead global growth

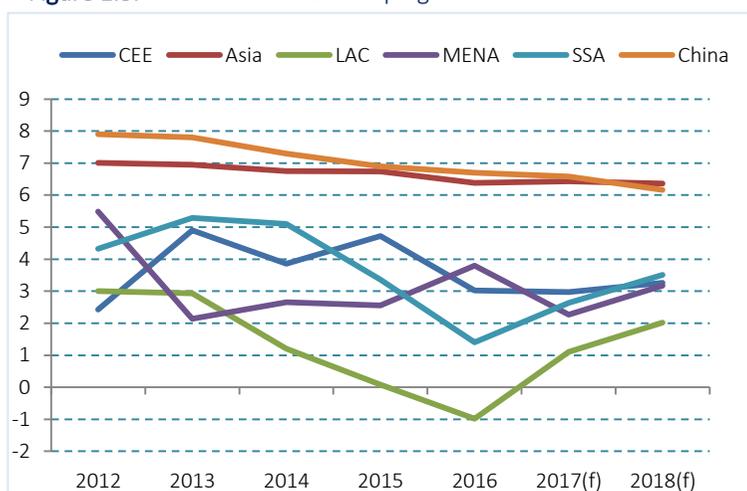
Unlike developed countries, developing countries has been growing more robustly since 2012. Although developing countries are still open to the economic woes in developed countries through trade and financial channels, the recovery in developed countries makes growth in developing countries less volatile. Growth rates in China and developing Asia were 6.7% and 6.4%, respectively in 2016 (Figure 1.3). It is forecasted that the growth rate in China will slow down slightly to 6.6% in 2017. Developing Asia will also grow with the same pace where the growth rate is expected to be about 6.4%.



Economic growth in Latin American and the Caribbean slowed down from 0.1% in 2015 to -1.0% in 2016. However, the negative trend line comes to a halt and the growth rate starts climbing in 2017 and is projected to reach 1.1% in 2017. Middle Eastern and North African countries show a similar pattern. After some upside down fluctuations, the output growth rate in this region is projected to decrease from 3.8% in 2016 to 2.3% in 2017 before climbing back to 3.2% in 2018.

The robust growth in Sub-Saharan Africa witnessed substantial decline since 2012. Usually, due to less openness of the region to the world economic network, the countries in this region are less prone to external shocks. However, steep decline in commodity prices in previous year shrank the economic growth to a rate of 1.4% in 2016. The projections for 2017 and 2018 indicate that Sub-Saharan African countries will record growth rates around 2.6% and 3.5%, respectively.

Figure 1.3: GDP Growth in Developing Countries



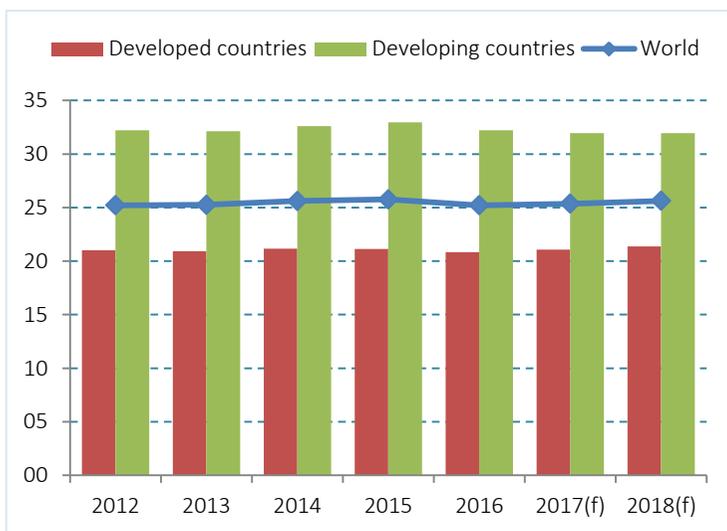
Source: IMF, World Economic Outlook, April 2017, (f:forecast). CEE: Central and Eastern Europe; Asia: Developing Asia; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; SSA: Sub-Saharan Africa.

The Central and Eastern Europe countries seem to be affected by the mixed performance of global economic activity. Their output grew by 3.0% in 2016 compared to 4.7% in 2015. For the year 2017 and 2018, growth in economic activity is expected to remain around 3.0% to 3.3% in these countries.

■ Developing countries are investing more

Investment is one of the most important components in restoring and sustaining economic growth. In particular, many developing countries need to invest more to sustain their positive economic growth momentum. Investment in research and development, education and infrastructure has long term economic growth impact in the economy. Figure 1.4 demonstrates the share of investment in GDP in developed and developing countries and the world average.

Since 2012, the share of investment in GDP has remained stable around 25%. Meanwhile, developing countries recorded comparatively very high rates of investment. In 2016, developing countries investment accounted for nearly one third of their total GDP. This ratio is expected to remain around this number for 2017-18. As the countries which have functioning companies, institutions and infrastructure, the developed countries spend less on investment and the share of investment in output in these countries constituted only 20.8% of GDP in 2016. In 2017 and

Figure 1.4: Share of investment in GDP

Source: IMF, World Economic Outlook, April 2017, (f:forecast).

3.9% in 2014 and 3.7% in 2015 (Figure 1.5). Growth in exports is 2.5% in developing countries whereas in developed countries it is 2.1%. In particular, Middle East and North Africa countries performed well and registered a growth rate of 6.6% in 2016 which is highest among the other groups. On the other hand, Sub-Saharan Africa countries registered the highest drop in exports growth compared to the previous year.

The forecasts show that in 2017 and 2018, the growth of world exports will continue to grow by 3.5 and 3.6% respectively. In particular, with the expected re-emergence of developed countries' growth in 2017, growth in exports in these countries is expected to reach 3.5% compared to 2.1% in 2016. Among developing countries, the emerging and developing Asian economies, which have large shares in the trade of manufactured goods, and Latin American and the Caribbean economies are expected to perform relatively better in 2017 with 3.6% and 4.3% growth in exports, respectively. Projections show that growth of export volume of Middle East and North Africa countries will decline sharply to 0.1% in 2017, before rebounding to 3.6% in 2018. These figures indicate that all regions in the world will experience significant growth in the volume of exports in 2018.

Similar patterns are also observed in imports of goods and services (Figure 1.6). After witnessing a rate of 3.9% in 2014, the growth in volume of world imports of goods and services decelerated to 2.5% in 2015. In 2016, a further decrease is experienced and the growth in imports was only 2.2% mainly due to significant decline witnessed by the developing countries in Africa. With the start of recovery across the world in 2017, the growth in the volume of world imports of goods and services is expected to reach 4.1% in 2017 and 2018.

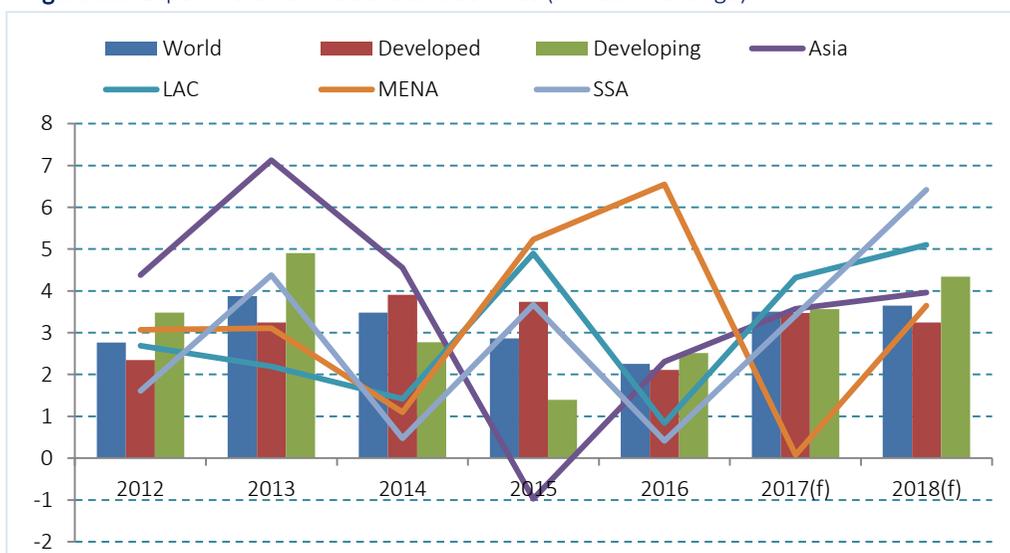
2018, it is expected to reach to 21.1% and 21.4%, respectively. The share of investment in the world output is expected to increase slightly to 25.4% and 25.6% in 2017 and 2018, respectively.

▪ Growth in export and imports decelerated

The growth of world exports in goods and services decelerated to 2.3% in 2016 after higher growth rates of



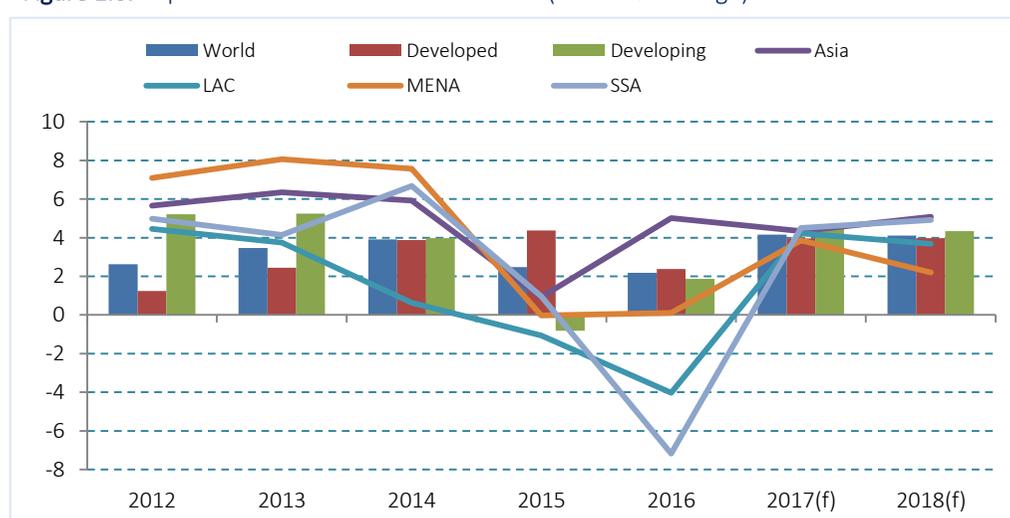
Figure 1.5: Export Volume of Goods and Services (Annual % Change)



Source: IMF, World Economic Outlook, April 2017, (f:forecast). Asia: Emerging and developing Asia; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; SSA: Sub-Saharan Africa

As in the case of their export performance, the developing countries outperform the developed countries in importing until 2015. Afterwards, their import growth rate plunged to negative (-0.8%) before accelerating back to positive growth in 2016. In particular, countries in the Sub-Saharan Africa and Latin America and Caribbean regions witnessed the sharpest decline in terms of importing in 2016. As one of the fastest growing region in the world, the emerging and developing Asian economies will continue to be a leading region in terms of imports in 2017 and 2018. The share of these regional country groups in total import has been rising up after

Figure 1.6: Import Volume of Goods and Services (Annual % Change)



Source: IMF, World Economic Outlook, April 2017, (f:forecast). Asia: Emerging and developing Asia; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; SSA: Sub-Saharan Africa.

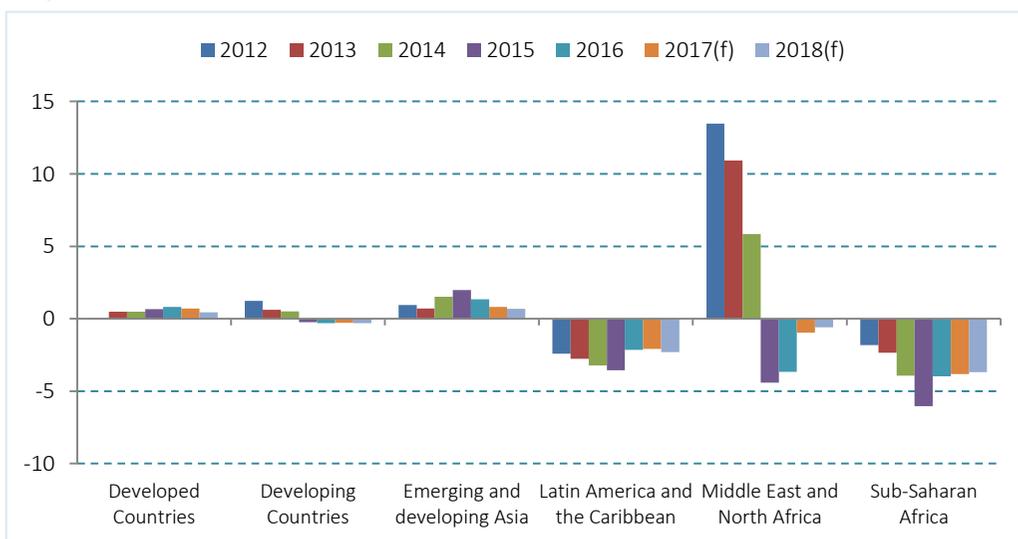
2016, and it is projected that the import growth of these three regions will be well-above to that of the other country groups in the world. Middle East and North Africa countries seem to converge in terms of the growth rate in imports in 2017.

▪ **Current account surplus is foreseen to remain stable in developed countries**

Current account balances can simply be thought of as savings minus investment of a country. Figure 1.7 demonstrates that current account balances have been changing in all the regions and country groups during the period under consideration. The emerging and developing Asian countries systematically recorded current account surpluses. Latin America and the Caribbean and Sub-Saharan Africa countries recorded current account deficits in the period of 2012-2016. It is also expected that these countries will not be able to turn their current account deficits into surpluses in 2017 and 2018. On the other hand, Middle East and North Africa countries, which recorded surplus during the first three years, were hard hit by the decline in oil prices in 2015 and 2016. Overall, developed countries recorded a small current account surplus while developing countries recorded small current account deficits and this trend will continue in 2017.

Improvement in current account deficit is foreseen for Sub-Saharan Africa, and Middle East and North Africa region regions in 2017 and 2018. The Middle East and North Africa region, which includes major oil producer countries, enjoyed the increase in the oil prices during the early years, and thus their current account surplus inflated. However, with the decline in the oil prices, and increasing exposure to imports, the current account surpluses of these countries as a percentage of their GDP have been continuously decreasing since 2013. The surplus was totally vanished in 2015 when their deficit hit the figure of 4.4%. Nevertheless, there is an improvement since then and current account deficit in these countries will improve to 0.6% in

Figure 1.7: Current Account Balance (% of GDP)



Source: IMF, World Economic Outlook, April 2017, (f:forecast).

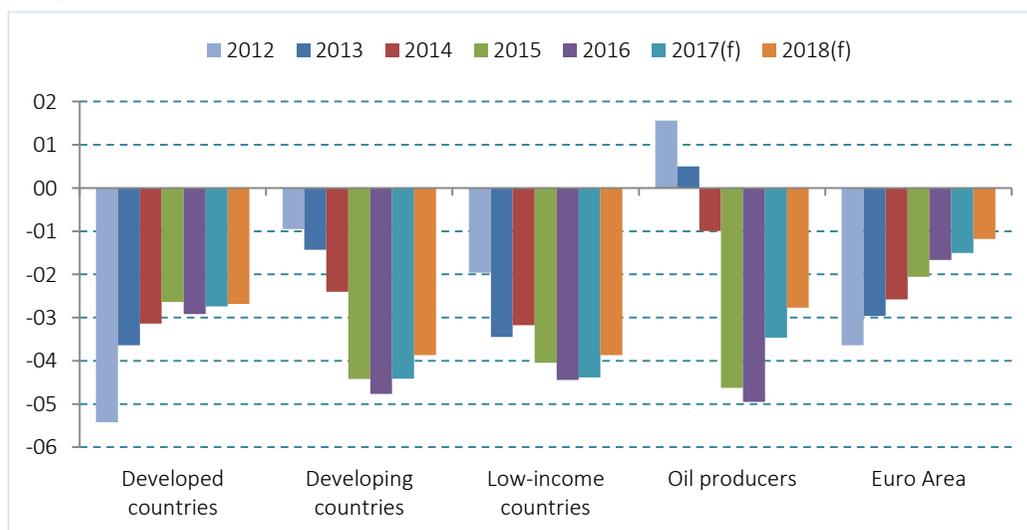


2018. Developed countries, on the other hand, are foreseen to retain a current account surplus at around 0.7% and 0.4% in 2017 and 2018, respectively.

▪ Fiscal balances improved significantly in the Euro Area

Projections show that the fiscal tightening policies achieved the expected effect in the developed countries (Figure 1.8). Fiscal balances as a percentage of GDP continue to decrease in these economies in 2016; projected at -2.9% of GDP. In 2017, a further decrease is expected where the ratio is projected at -2.7% of GDP. Developing countries also have negative fiscal balances but were in relatively better position than the developed countries until 2014. In 2016, the ratio was observed as -4.8% and is expected to be -4.4% in 2017. Oil producers which have had a positive fiscal balance ratio in 2012-13 were hard hit by the declining oil prices. Their fiscal surpluses decrease sharply in accordance with the decline in the oil prices since 2015. The fiscal surpluses decrease sharply in accordance with the decline in the oil prices since 2015. The fiscal surplus was recorded at -4.9% in 2016 compared to 1.6% in 2012. The European countries still suffer from the fiscal imbalances and the fiscal tightening seems to erode the deficits slowly. However, their fiscal situation has been consistently improving since 2012 as the ratio rebound from -3.6% in 2012 to -1.7% in 2016. In 2017, a further improvement is expected where the fiscal deficit is projected at 1.5% of GDP. The low-income countries are expected to continue recording systematic fiscal deficits. During 2017-18, the deficit will shrink slightly from 4.4% to 3.9%.

Figure 1.8: Fiscal Balances (% of GDP)



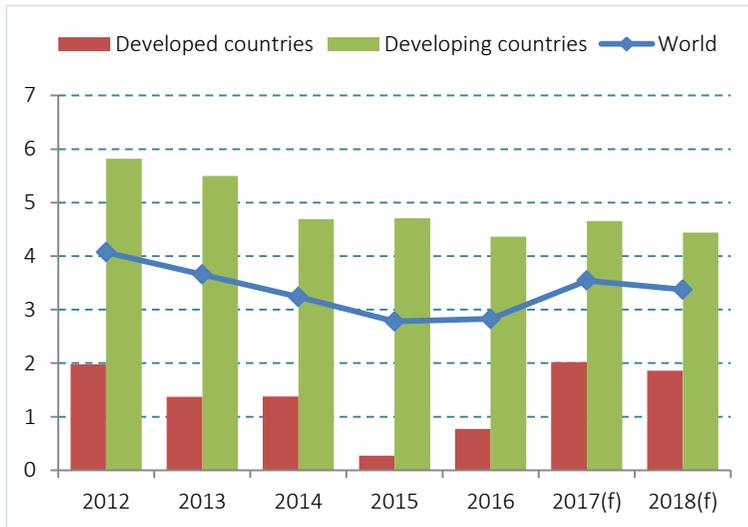
Source: IMF Fiscal Monitor 2017, (f:forecast).

▪ Inflation slows down across the world

Because of the lower commodity prices, global inflation eased to 2.8% in 2016. With the mildly expansionary fiscal policies and rebound in commodity prices in accordance with the output growth seem to increase the consumer prices on average in the world in coming years. As a result, inflation rate will increase 3.5% in 2017, and it is expected to be around 3.4% in 2018.

As seen in Figure 1.9, price volatility is not foreseen to be a major concern for developing countries. Meanwhile, in nearly all advanced economies, inflation rates are expected to be higher in 2017 than in 2016. As a result, inflation rate is expected to be 2.0% and 1.9% in 2017 and 2018, respectively. In developing countries, the inflation rate decreased from 5.8% in 2012 to 4.4% in 2016. The expected inflation is 4.7% and 4.4% for 2017 and 2018, respectively.

Figure 1.9: Inflation, average consumer prices (% change)

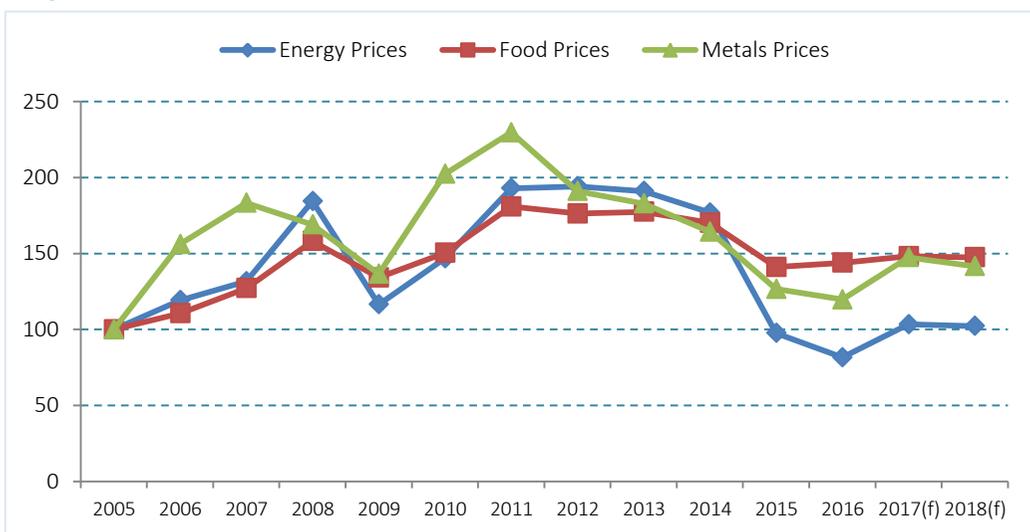


Source: IMF, World Economic Outlook, April 2017, (f:forecast).

▪ **Commodity prices declined substantially**

Prices of most commodities were on the rise between 2009 and 2011 due to increased demand. In 2011, the positive trend in commodity prices was broken and the prices started to decrease gradually. Afterwards, commodity prices started to stabilize in 2013 and 2014 before witnessing a sharp decline in 2015.

Figure 1.10: Commodity Prices (Index, 2005=100)



Source: IMF, World Economic Outlook, April 2017, (f:forecast).



The energy prices index decreased from 117 in 2014 to 82 in 2016. In 2017, it is foreseen that the energy prices index will be around 103. Metal prices also rocketed up between 2009 and 2011. Afterwards, the index of metal prices went back from 230 in 2011 to 120 in 2016. In 2017-18, the negative trend will be reversed and the index will climb up to 147 in 2017. Food prices (including agricultural food) followed a similar pattern of energy and metal prices. The increasing trend in food prices index stopped in 2011. Afterwards, the index plunged sharply from 181 to 144 in 2016. During 2017-18, it is forecasted that the index will continue to rebound slightly. Given the positive growth in developed economies and the decrease in the commodity prices, the period of 2017-18 will be smoother for consumers and producers both in developed and developing countries.

▪ Global unemployment remained stable

According to the ILO Global Employment Trends 2017 report, the total global unemployment rate averaged 5.7% in 2016 (Figure 1.11). Overall, the ILO projects global unemployment rate at 5.8% in 2017, which is equivalent to 200 million unemployed. Adult unemployment rate was 4.4% in 2016 and is expected to remain at the same level in 2017. However, high youth unemployment is still a major concern worldwide. Unemployment in youth not only increases the overall unemployment rate but also raises social tension in the societies. Moreover, it demotivates the young generation for education and skills upgrading. Youth unemployment rate was recorded as 12.8% in 2016 which is only 0.1 percentage points lower than in 2015.

For the gender groups, the number of male unemployed has increased from 112 million in 2010 to 114 million in 2016. Female unemployment shows a stable pattern during 2010-16. The number of unemployed female was 83.7 million in 2016 compared to 83.1 million in 2010.

Figure 1.11a: Unemployment in the world (%)

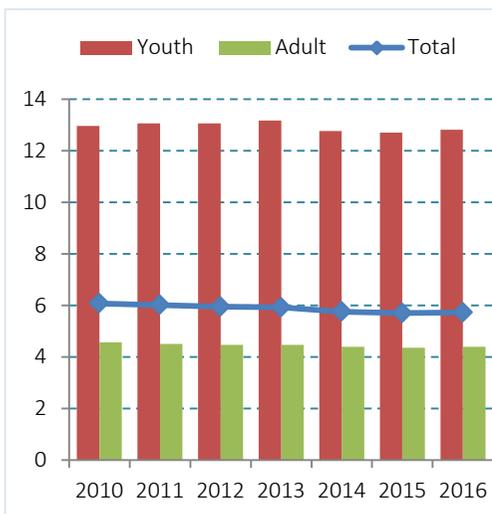
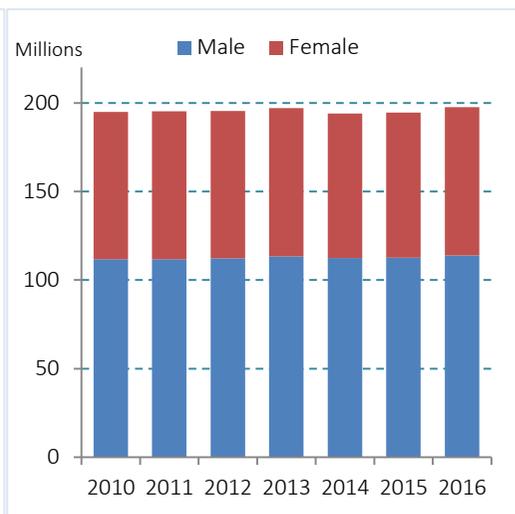


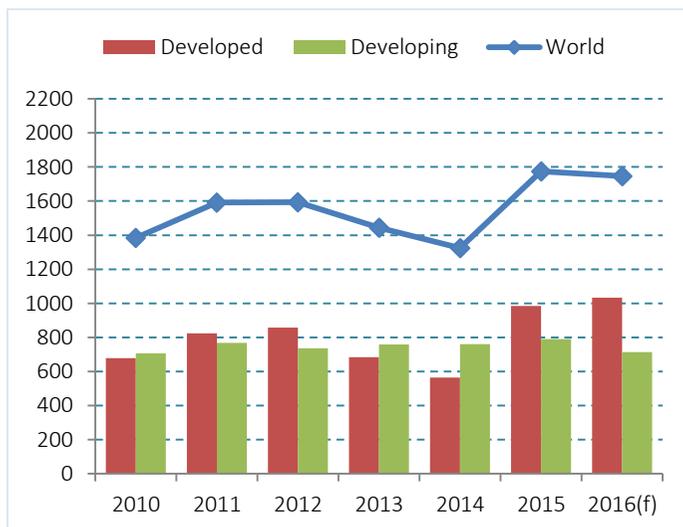
Figure 1.11b: Total Unemployed in the world



Source: ILO, Global Employment Trends 2017.

Foreign direct investment inflows slowdown

Figure 1.12: FDI inflows in the World (in billions of dollars)



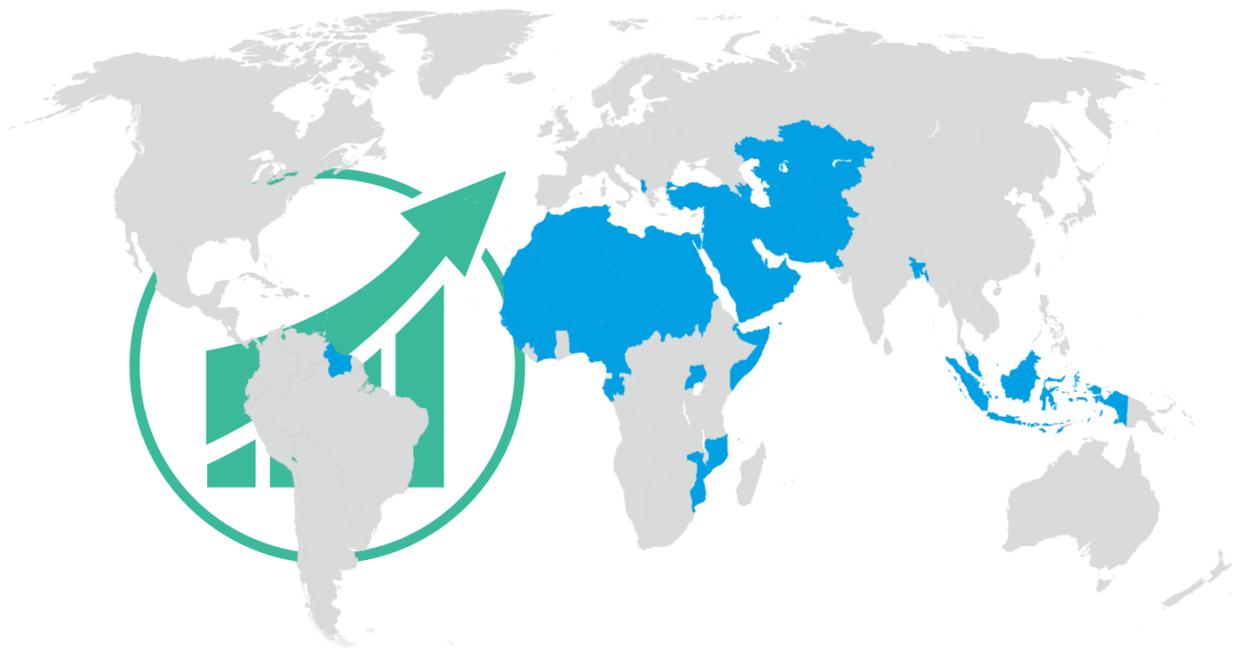
Source: UNCTAD, World Investment Report 2017, (f:forecast).

Foreign Direct Investment (FDI) can be a good source of capital for economic growth and can serve as a way to transfer the latest technologies to developing countries. During 2010-16, FDI flows witnessed a mixed trend worldwide (Figure 1.12). The world total FDI inflows amounted to US\$ 1.75 trillion in 2016, marking a slight decrease over

previous year's value of US\$ 1.77 trillion. In general, developed countries continued to be the prime destination for FDI flows, accounting for around 59% of global FDI in 2016.



PART II: RECENT ECONOMIC DEVELOPMENTS IN OIC COUNTRIES





CHAPTER TWO

Production, Growth and Employment



2.1 Production and Growth

The group of OIC countries are well-endowed with potential economic resources in different fields and sectors such as agriculture, energy, mining and human resources, and they constitute a large strategic trade region. Yet, this inherent potential does not manifest itself in the form of reasonable levels of economic and human development in many individual OIC countries as well as in the OIC countries as a group. In 2016, having accounted for 23.4% of the world total population, OIC member countries produced as much as 15.3% of the world total GDP – expressed in current USD and based on PPP (Figure 2.1a). When measured in current prices, however, OIC member countries account only 8.4% of global production in 2016 (Figure 2.1b).

Figure 2.1a: Gross Domestic Product, PPP Current USD (2016)

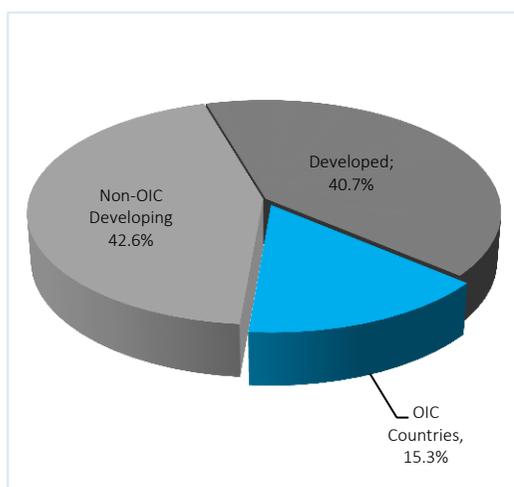
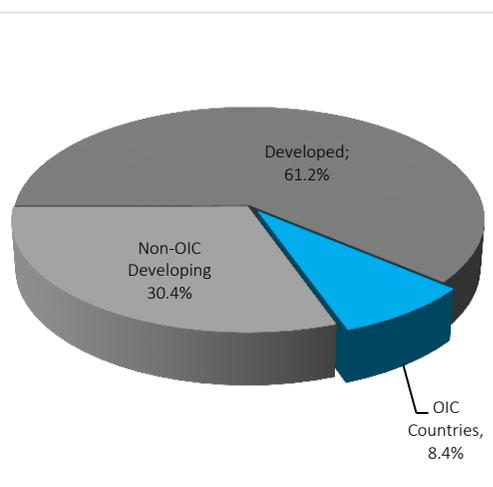


Figure 2.1b: Gross Domestic Product, Current USD (2016)

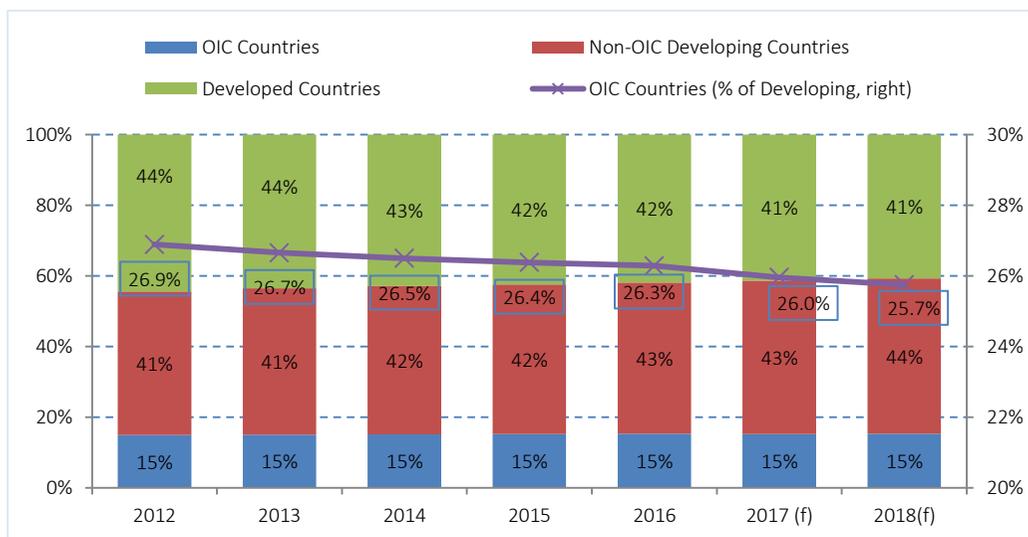


Source: IMF WEO Database April 2017

Over the last 5 years, the group of OIC countries has increased its share in the world output only by 0.3 percentage point to reach 15.3% in 2016 (Figure 2.2). Considering the fact that the individual countries such as United States and China had higher shares than that of the OIC countries as a group (15.5% and 17.8%, respectively in 2016), it can be stated that the contribution of the OIC countries to the world output is below their potential. On the other hand, the share of the OIC countries in the total GDP of developing countries has declined steadily and was recorded at 26.3% in 2016, a decrease by 0.6 percentage points over the 5-year period under consideration (Figure 2.2).

The decline in the share of the OIC countries in total GDP of the developing countries indicates that the OIC economies have performed poorer than non-OIC developing countries in expanding their output. Although the projections for 2016 and 2017 indicate that the GDP of the OIC countries as a whole will continue to grow, it is predicted that the share of the OIC countries in the world output will be stable around 15.2% in 2017 and 15.3% in 2018. However,

Figure 2.2: Gross Domestic Product, PPP Current USD



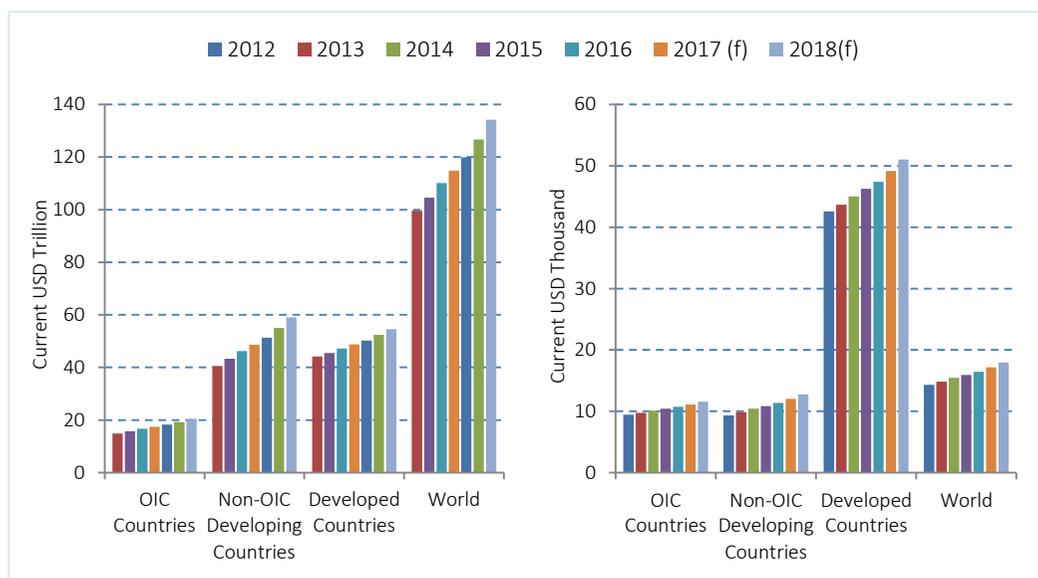
Source: IMF WEO Database April 2017.

the share of the OIC countries in the total output of the developing countries is estimated to shrink further to 26.0% in 2017 and 25.7% in 2018 (Figure 2.2).

- **Production:** Share of OIC countries in total world GDP remained at 15.3% in 2016

Global GDP – expressed in current USD and based on PPP – has witnessed an increasing trend over the period 2012-2016, reaching US\$ 119.9 trillion in 2016 compared to US\$ 99.6 trillion in 2012 (Figure 2.3, left). During the same period, OIC countries also witnessed an increasing trend in economic activity and their GDP increased from US\$ 14.9 trillion in 2012 to US\$ 18.3 trillion in 2016. During the same period, non-OIC developing countries experienced a more rapid increase in their output as the total GDP in these countries reached US\$ 51.4 trillion in 2016, a level which is well above the US\$ 40.5 trillion they recorded in 2012. Though the share of OIC countries in the world total GDP slightly increased to 15.3%, their share in the total GDP of developing countries group has declined steadily and was recorded at 26.3% in 2016, a decrease by 0.6 percentage points over the 5-year period under consideration. During the same period, the average GDP per capita in the OIC countries has increased continuously and reached US\$ 10,729 in 2016, compared to US\$ 9,430 in 2012 (Figure 2.3, right). The gap between the average per capita GDP levels of the OIC member countries and those of non-OIC developing countries has widened over the years. In 2012, average GDP per capita in the OIC countries was higher than the non-OIC developing countries. However, the situation was reversed from 2013 onward and the average per capita GDP differential between OIC countries and non-OIC developing countries was recorded at US\$ 612 in 2016. The latest estimates show that this gap is expected to worsen in coming years. During the same period, the average GDP per capita in the OIC countries has also diverged from the world average as the gap increased from US\$ 4,877 in 2012 to US\$ 5,705 in 2016.



Figure 2.3: Total GDP (left) and GDP per capita (right), based on PPP

Source: SESRIC staff calculations based on IMF WEO Database April 2017, (f: forecast).

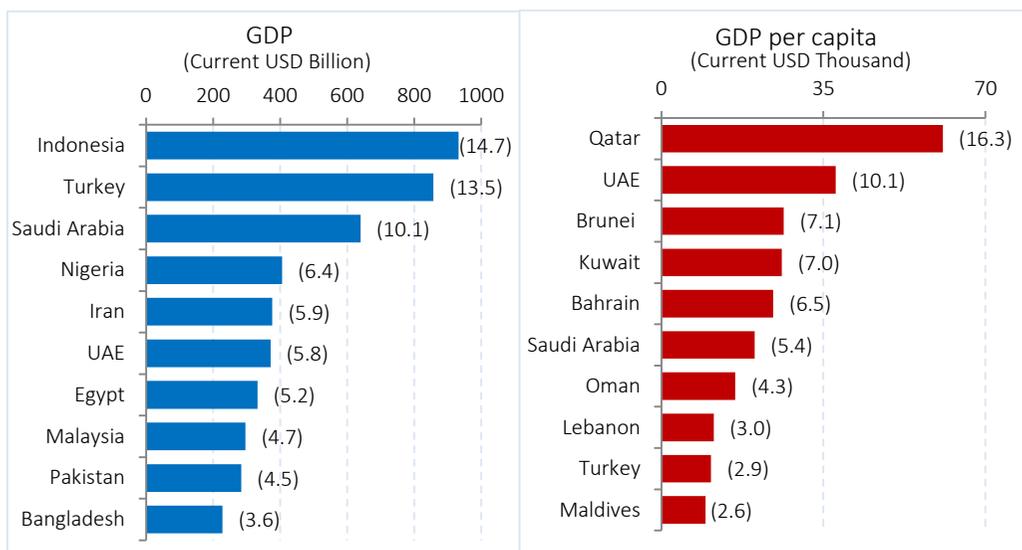
- **GDP per Capita:** The gap between average GDP per capita in OIC countries and the world continued to diverge

Furthermore, it is observed that the total GDP of the OIC countries is still produced by a few member countries. In 2016, the top 10 OIC countries in terms of the volume of GDP produced 74.4% of the total OIC countries output (Figure 2.4, left). In current prices, Indonesia has the highest share in OIC GDP (14.7%) followed by Turkey (13.5%), Saudi Arabia (10.1%), and Nigeria (6.4%). The overall economic performance of the group of OIC member countries remained highly dependent on the developments in these ten countries. As a matter of fact, fuel is the main source of export earnings for 4 out of these 10 OIC countries; namely Saudi Arabia, Nigeria, Iran, and United Arab Emirates.

Among the OIC countries, Qatar registered the highest GDP per capita in 2016 followed by United Arab Emirates and Brunei (Figure 2.4, right). The per capita GDP of Qatar was 6 times higher than the average of the OIC countries as a group, a situation which reflects a high level of income disparity among the OIC countries. Among the top 10 OIC countries by GDP per capita 6 are from the Middle East region. In 2016, Qatar was ranked 6th in the world in terms of per capita income levels.

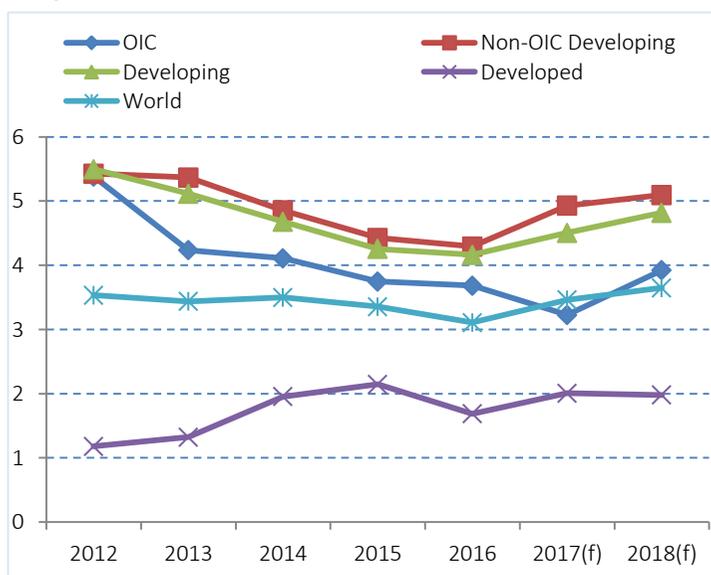
- **GDP Growth:** Growth rates in OIC countries continued to decelerate since 2012

The GDP growth of OIC countries has slowed down to 3.7% in real terms in 2016, as compared to 5.4% in 2012 (Figure 2.5). Although this is in line with the persistent slowdown in across-the-board economic activity, which started to take hold in 2011, prospects for growth in OIC

Figure 2.4: Top 10 OIC Countries by GDP and GDP per capita (2016)

Source: IMF WEO Database April 2017 and SESRIC BASEIND Database. The numbers in round brackets on left (right) hand side indicate the share (ratio) of the related country's GDP (GDP per capita) in the overall GDP (to the average GDP per capita) of the OIC countries as a group.

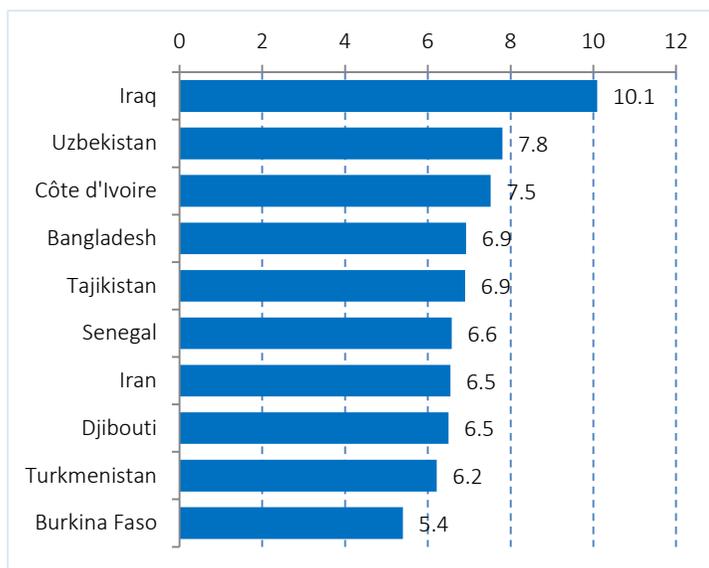
countries remained bleak amid the decline in oil prices and resulting macroeconomic distress and sharp downward revisions to growth forecasts for oil exporting countries like Saudi Arabia, Iraq, Iran, Nigeria and United Arab Emirates. According to the estimates of the IMF (2016), oil prices fell by roughly 50% in 2015 relative to 2014 (in annual average terms) and the markets suggested a further 10% average decline in 2016. Amid the expectations that oil prices may stay low for a protracted period of time, many oil exporting OIC countries have initiated measures like cutting subsidies and halting investment in infrastructure projects to adjust government spending. The economic performance of non-OIC developing countries, on

Figure 2.5: GDP Growth in the World

Source: SESRIC staff calculations based on IMF, World Economic Outlook, April 2017.



Figure 2.6: Top 10 OIC Countries in terms of GDP Growth Rate (2016)



Source: IMF WEO Database April 2017 and SESRIC BASEIND Database.

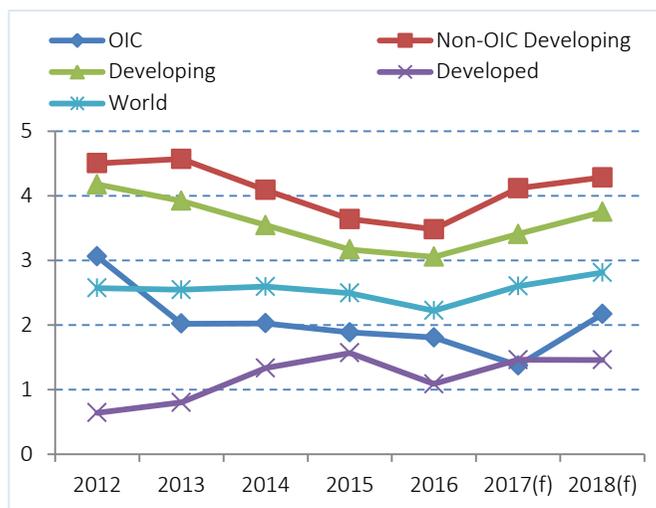
growth rate of 3.9%. Nevertheless, these figures are not better than the predicted average growth rates for the group of non-OIC developing economies (4.9% for 2017 and 5.1% for 2018) (Figure 2.5).

At the individual country level, Iraq, with a growth rate of 10.1% in 2016, was the fastest growing economy in the group of OIC countries, followed by Uzbekistan (7.8%), Côte d'Ivoire (7.5%), Bangladesh (6.9%) and Tajikistan (6.9%). On the other hand, majority of the OIC top-10 fastest growing economies are from Sub-Saharan Africa (4), and Central Asia regions (3). Whereas four of the OIC LDCs were among the top 10 fastest growing OIC countries in 2016: Bangladesh, Senegal, Djibouti, and Burkina Faso with their real GDP growth rates ranging between 6.9 % and 5.4% (Figure 2.6).

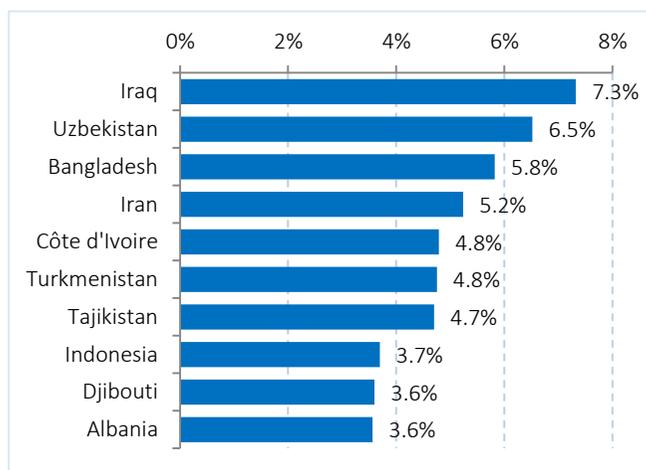
- **GDP per Capita Growth:** Iraq, with a per capita GDP growth rate of 7.3% in 2016, was the fastest growing economy among OIC countries

The average growth rate of the real per capita GDP in the OIC countries has been positive during the period 2012-2016 (Figure 2.7). This implies that the real GDP in the OIC member countries has grown on average faster than the population. This can be interpreted as a real increase in standards of living in the OIC community. However, a similar downward trend, as in the case of real GDP growth, is also observed for real GDP per capita growth rates in OIC countries. Following a short-lived recovery in the aftermath of the global financial crisis, the average real GDP per capita growth rate in OIC countries had started to decline again starting from 2012 and was recorded at 1.8% in 2016, as compared to 3.1% in 2012. The average real

the other hand, has so far been highly influenced by the pace of growth in the two leading Asian economies, namely China and India. However, the average real GDP growth rates in non-OIC developing countries were above the OIC average during the period 2012-2016. Moving forward, the average rate of growth in the OIC countries will likely to halt further in 2017, with average growth rate forecasted to be around 3.2%. This slowdown is expected to be reversed in 2018 with an expected

Figure 2.7: Real GDP per capita Growth, Annual Percentage Change

Source: SESRIC staff calculations based on IMF WEO Database April 2017.

Figure 2.8: Top 10 OIC Countries in terms of GDP per capita Growth Rate (2015)

Source: IMF WEO Database April 2017

The analysis of value-added by major sectors in the total GDP of the OIC countries and non-OIC developing countries shows a similar structure. Although agriculture is widely known to be the primary economic activity and assumed to play a major role in the economies of developing countries, this feature does not stand firm in the case of OIC and non-OIC developing countries as groups. Indeed, the share of agriculture in the total GDP of OIC countries has gradually declined from 11.8% in 2000 to 11.0% in 2015 (Figure 2.9). Coupled with the economic recovery and increase in the share of the non-manufacturing industry, the share of the agricultural sector witnessed a continuous downward trend. Between 2010 and 2015, a more

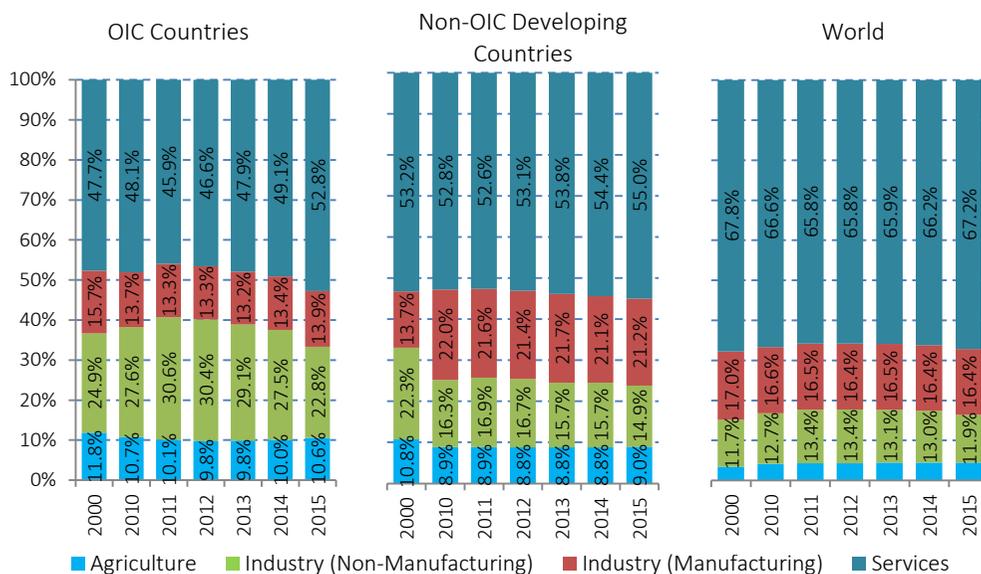
GDP per capita growth rate is forecasted to decrease further to 1.4% in 2017 before recovering to 2.2% in 2018. During the recent years, the pace of the real GDP per capita growth in the OIC member countries remained below the averages of world, and non-OIC developing countries.

At the individual country level, Iraq, with a per capita GDP growth rate of 7.3% in 2016, was the fastest growing economy in the group of OIC countries, followed by Uzbekistan (6.5%), Bangladesh (5.8%) and Iran (5.2%). Iraq and Uzbekistan were the 1st and 2nd fastest growing economies in the world. On the other hand, 4 of the OIC top-10 economies with the fastest growth of per capita GDP are from Europe and Central Asia and two from Middle East. Whereas, two of the OIC LDCs were among the top 10 OIC countries in 2016, namely: Bangladesh and Djibouti (Figure 2.8).

▪ **Structure of GDP:** Share of services in total GDP of OIC countries reached 52.8% in 2015



Figure 2.9: Value-added by Major Sectors of the Economy (% of GDP)



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, July 2017.

stable trend was observed in non-OIC developing countries, where the average share of agriculture in the economy has for long remained about 9%.

At the individual country level, in 2015, the agricultural sector accounted for more than one third of the total value-added in seven OIC member countries; namely in Somalia, Sierra Leone, Togo, Guinea-Bissau, Mali, Niger, and Burkina Faso— all of which were listed among the LDCs in the same year according to the UN classification. The share of agriculture in GDP varied substantially among the OIC countries, with the highest share of 60.2% in Somalia and the lowest shares below 1.0% in Qatar (0.2%), Bahrain (0.3%) and Kuwait (0.6%).

In contrast, the services sector continued to play a major role in the economies of many OIC countries as the most important source of income. After a sharp contraction in 2008 with the outbreak of the global financial crisis and the resulting decrease in its share, the average share of the service sector in total GDP of OIC countries increased since 2011. In 2015, the average share of the services sector in OIC economies was 52.8%. For non-OIC developing countries, the services sector continued to account for over half of the total GDP and its share was recorded at 55.0% in 2015 (Figure 2.9).

- **Industrial Production:** Increasing trend in the share of OIC countries in total world industrial production ceased since 2013

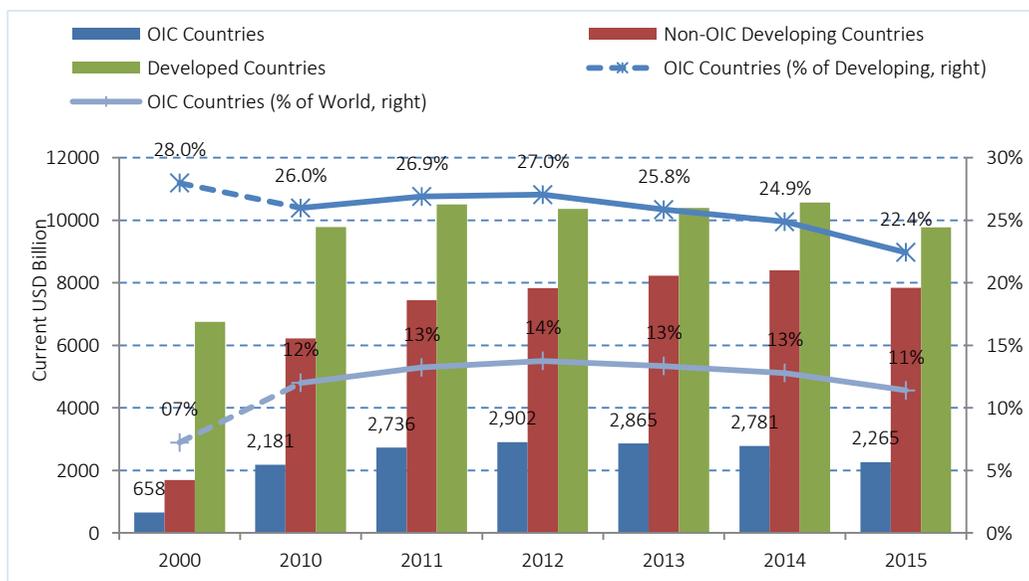
Industry sector – including manufacturing – accounted on average for 36.7% of the total GDP of the OIC member countries in 2015 (Figure 2.10). Its share in 2010 was significantly lower than that of the services sector, however the situation started to improve with the picking up of global industrial activity in 2011 and 2012 as the relative share of industry in economic activity

was quickly catching up with the services sector before starting to diverge again in 2013. Compared to non-OIC developing countries where the industrial sector's contribution to the GDP averaged at 36.1% in 2015, the latter apparently constitutes a larger portion of the economic activity in the OIC member countries.

However, the share of industry in the GDP of a country, per se, does not reflect the actual industrialization level of its economy. Particularly in the case of OIC countries, the oil industry accounts for a significant portion of the total value-added of industry sector. Figure 2.9 reveals that, in year 2000, the share of manufacturing sector in total GDP of the OIC countries was 15.7%. In 2013, however, the share of the sector contracted significantly to 13.2% before increasing slightly to 13.4% in 2014. Most recently, in 2015, the share of the manufacturing industry stands at 13.9% which is still below the 15.7% level observed in year 2000. As compared to the OIC countries, the manufacturing sector in non-OIC developing countries contributes significantly larger share to their total GDP where its share was recorded at around 21.2% in 2015.

According to Figure 2.10, the share of the OIC countries as a group in the world total industrial production has reached 11.4% in 2015. This marks 4.2 percentage points increase since year 2000. Despite this upward trend, the share of the OIC countries in the total gross fixed capital formation of the developing countries has been on decline and contracted from 28.0% to 22.4% over the same period. This indicates the relatively poor performance shown by the OIC countries in industrial production, as compared to non-OIC developing countries.

Figure 2.10: Industrial Production, Volume and Share (right)



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, July 2017.

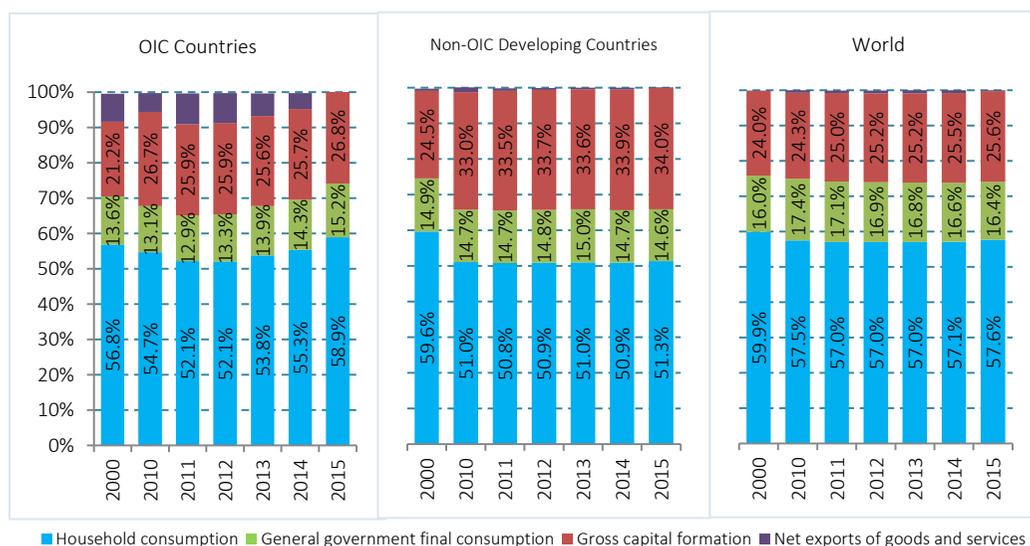


- **GDP by Expenditure Items:** The share of household consumption in the total GDP of OIC countries peaked in 2015

The analysis of global GDP by major expenditure items reveals that the share of final consumption (both by household and government) continued to be the highest in the total GDP over the years. As shown in Figure 2.11, in 2015 household consumption in OIC countries accounted for the lion share of 58.9% followed by gross capital formation (26.8%) and general government final consumption (15.2%). The share of net exports in total world GDP was negligible. During the period 2000-2015, the share of gross capital formation in total GDP of non-OIC developing countries has increased by 10 percentage points whereas the share of household consumption declined by 8 percentage points.

The relative shares of the major expenditure items in the total GDP of OIC and non-OIC developing countries registered significant variation from the world. In 2015, final household and general government spending accounted for 74.1% of the total GDP of OIC countries. As constituents of the final consumption expenditure, expenditure by households and governments accounted for 58.9% and 15.2% of the GDP, respectively. These figures marked an increase in the shares of both consumption types compared to the previous year. However, the share of net exports in the total GDP of the OIC member countries has decreased by 7.9 percentage points since 2000 whereas the share of gross capital formation has increased by 6 percentage points over the same period. The decrease in the share of net exports was mainly accommodated by an expansion in the share of gross capital formation from 21.2% in 2000 to 26.8% in 2015. On the other hand, the share of final consumption in total GDP of non-OIC developing countries was recorded at 65.9% in 2015 and household consumption, with a 51.3% share in GDP, was again the main source of final consumption expenditure in these countries.

Figure 2.11: GDP by Major Expenditure Items (% of GDP)



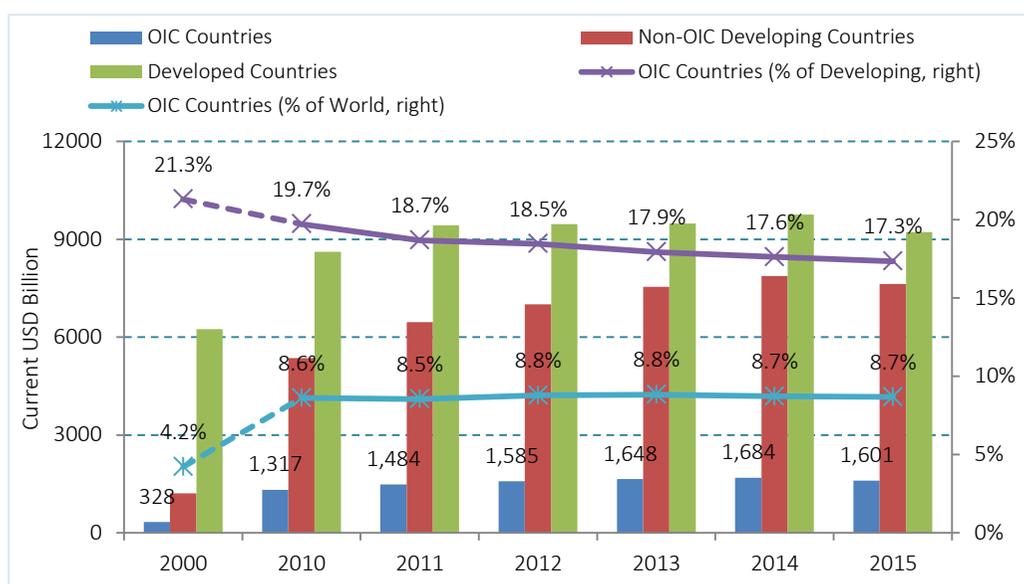
Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, July 2017.

- **Gross Capital Formation:** In 2015, 26.8% of the total GDP generated in OIC countries was invested in productive assets

Gross capital formation measures the amount of savings in an economy which are transformed into investments in production. As the analysis of GDP by major expenditure items revealed in Figure 2.12, 26.8% of the total GDP generated in the OIC member countries was invested in productive assets in year 2015. In comparison, non-OIC developing countries on average channelled 34.0% of their GDP into productive investments. The share of gross capital formation in the GDP of OIC countries as a group has increased by 6.0 percentage points over its year 2000 level of 21.2%, while it increased by as much as 10.0 percentage points in the group of non-OIC developing countries over the same period. Yet, one can argue that gross capital formation, as an indicator, is flawed primarily by the significant fluctuations in inventories and, most of the time, non-availability of the industry-level inventory information. Gross fixed capital formation, on the other hand, is promoted as being a better indicator on the net additions of productive assets created during a specific year.

In view of the above argument, Figure 2.12 offers a look at the gross fixed capital formation trends in the OIC countries in comparison to non-OIC developing as well as developed countries. According to Figure 2.12, the share of the OIC countries as a whole in world total fixed capital formation reached 8.7% in 2015. This marks 4.5 percentage points increase since year 2000. Despite this upward trend, the share of the OIC countries in the total gross fixed capital formation of the developing countries has been on decline and contracted from 21.3% to 17.3% over the same period. This indicates the relatively poor performance shown by the OIC countries in accumulating investment capital, as compared to developing countries.

Figure 2.12: Gross Fixed Capital Formation, Volume and Share (right)



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, July 2017.



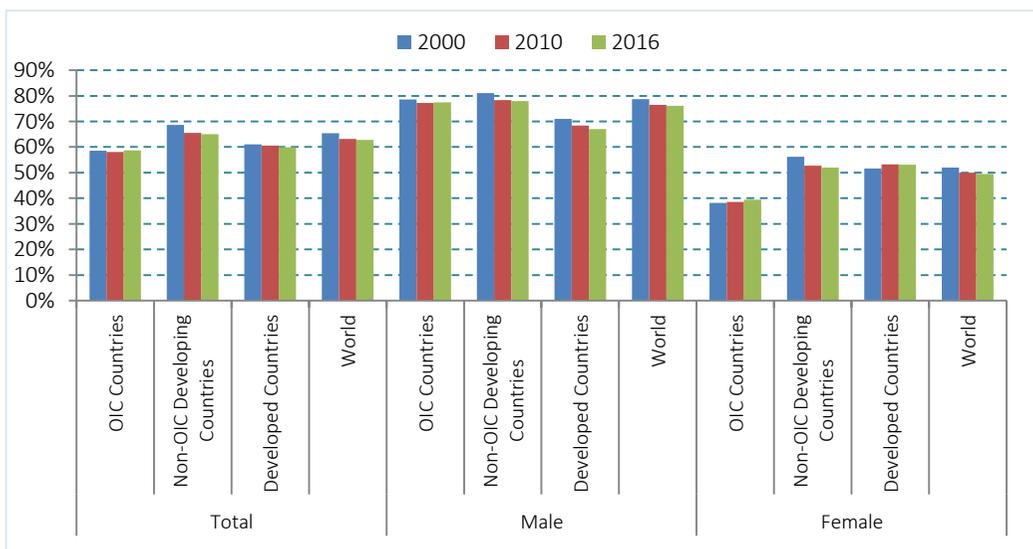
2.2 Employment and Prices

- **Labour Force Participation:** LFPR in OIC countries remained lower than other country groups in 2016

Although unemployment rate is accepted as one of the leading macroeconomic variables which commonly used to examine the performance of the economy, it may not accurately reflect the health of labour market as the definition focuses on people seeking employment for pay but not the magnitude of people who are not working actually. Due to this, it might be ideal to first consider the labour force participation rate (LFPR), which measures the proportion of people aged 15 and above that engages actively in the labour market, either by working or actively searching for a job. It provides an indication of the relative size of the supply of labour available to engage in the production of goods and services.

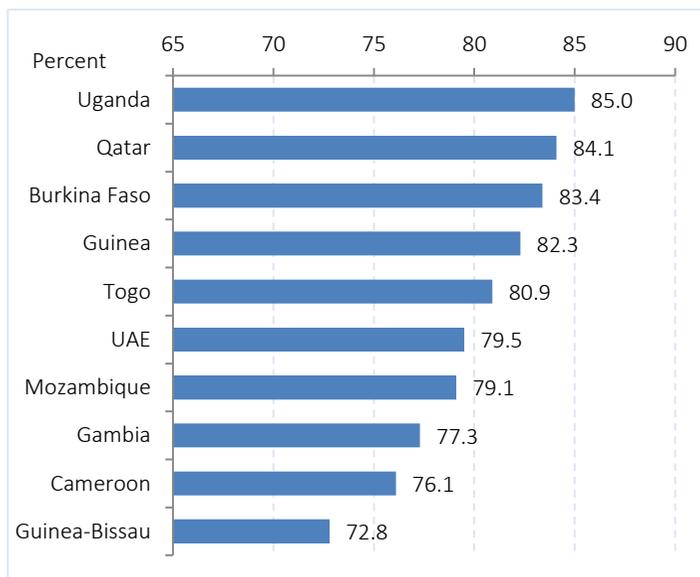
As shown in Figure 2.13, the average labour force participation rate in OIC member countries, contrary to other country groups, followed a slightly increasing trend, which stood at 58.7% in 2016 compared to 65.0% in non-OIC developing countries. In case of labour force participation rate for the male population, OIC member countries recorded a rate of 77.5% compared to 76.1% in the world, 77.9% in non-OIC developing countries. Although, OIC member countries registered globally comparable performance in terms of total and male labour force participation rates, their performance in case of female labour force participation rate remained significantly lower. Female labour force participation rate in OIC member countries was recorded at 39.5% in 2016, which is significantly lower than the world average of 49.5%, the average of 51.9% in non-OIC developing countries and the average of 53.1% in developed countries.

Figure 2.13: Labour Force Participation Rates, 2000-2016



Source: SESRIC staff calculations based on ILO, KILM 2017 Dataset.

Figure 2.14: Top 10 OIC Member Countries by Labour Force Participation Rate, 2016



Source: ILO, KILM 2017 Dataset.

Faso (83.4%), Guinea (82.3%), and Togo (80.9%). It is worth mentioning that, with the exception of Qatar and United Arab Emirates, all top 10 performing member countries belong to the least developed countries according to UN classification (Figure 2.14). On the other hand, lowest participation rate was recorded in Jordan with 40.1%. It is followed by Iraq (42.6%), Algeria (43.8%), Palestine (44.2%) and Iran (44.7%). At the global level, with respect to labour force participation rate, Uganda is ranked at 2nd, Qatar at 4th and Burkina Faso at 7th position. It is also worth mentioning that 13 out of the world 20 countries with lowest participation rates in 2016 are OIC member countries.

- **Unemployment:** Average unemployment rate in OIC countries continue to remain stubbornly high at around 7.4%

Unemployment remained one of the most challenging issues across the globe. According to the ILO World Employment and Social Outlook 2017 report, the global unemployment rate is expected to rise modestly from 5.7% to 5.8% in 2017 representing an increase of 3.4 million in the number of jobless people. Due to ongoing uncertainties about world economic developments, little improvement is expected in the global labour market in 2018. The number of unemployed persons globally in 2017 is forecast to stand at just over 201 million – with an additional rise of 2.7 million expected in 2018, according to the ILO. This reflects the fact that employment is not expanding sufficiently fast to keep up with the growing labour force. Global uncertainty and the lack of decent jobs accordingly contribute to social unrest and migration in many parts of the world.

However, there is an increasing trend in labour force participation rates in OIC countries, particularly in female participation rates. Since 2000, female participation rate increased from 38.2% to 39.5% in 2016. While in non-OIC developing countries, female participation showed a declining trend and fell to 51.9% in 2016 from its level of 51.6% in 2000.

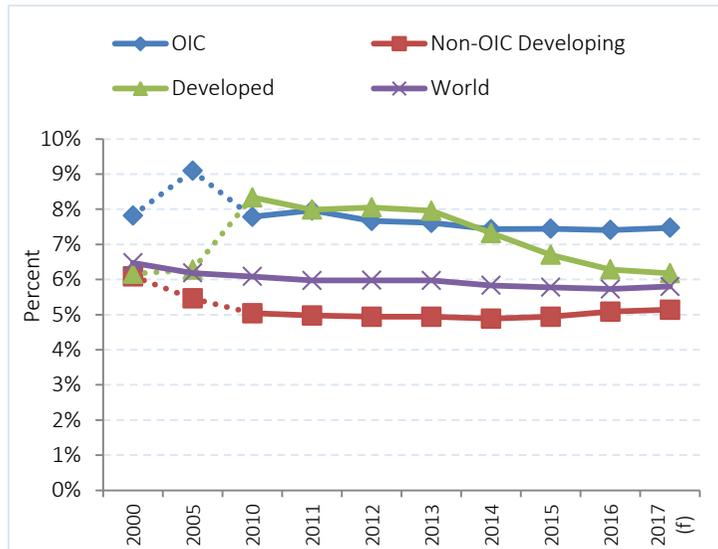
At the individual country level, Uganda registered the highest labour force participation rate in 2016 with a rate of 85%, followed by Qatar (84.1%), Burkina



According to the latest available data, OIC countries recorded significantly higher average unemployment rates compared to the world, developed and non-OIC developing countries during the period 2000-2017 (Figure 2.15). Since 2000, total unemployment rate in OIC countries fluctuated between 7.4% and 9.1%. The high unemployment rates in developed countries following the financial crisis in 2008 constituted the only exception, which exceeded the rate in OIC countries during 2009-2013. After the global financial crisis, unemployment rates in developed countries increased from a level below 6% to over 8%. Since 2014, average unemployment rate in developed countries fell below the rates observed in OIC countries and reached 6.3% in 2016, compared to 7.4% in OIC countries. Average unemployment rate in non-OIC developing countries remained significantly lower (around 2-3%) than the OIC average throughout period under consideration, which is expected to remain at 5.1% in 2016.

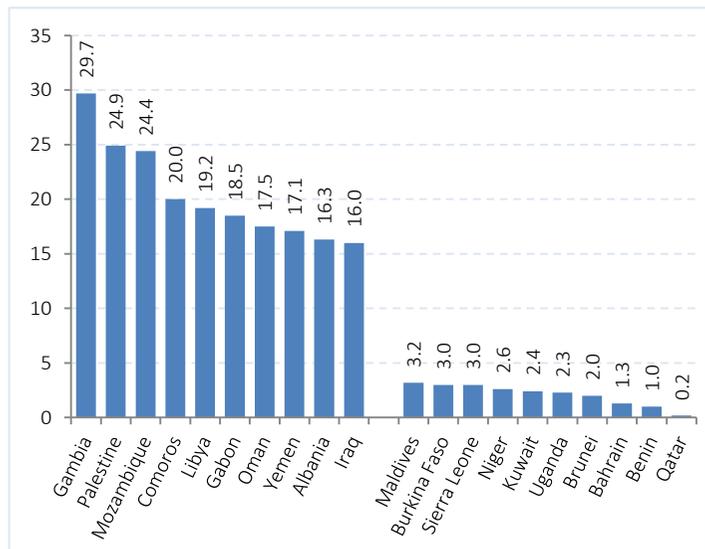
Unemployment rates for male labour force are typically lower than the rates for female in all country groups (SESRIC, 2017). Despite significant improvement since 2005, female unemployment in OIC countries remains highest with 9.3% in 2017.

Figure 2.15: Total Unemployment Rate (% of Total Labour Force)



Source: SESRIC staff calculations based on ILO, KILM 2017 Dataset, (f:forecast).

Figure 2.16: OIC Countries with Lowest and Highest Unemployment Rates



Source: ILO, KILM 2017 Dataset.

It is estimated at 5.4% in non-OIC developing countries and 6.2% in developed countries for the same year. Male unemployment in OIC countries is expected to decrease from 7.8% in 2005 to 6.6% in 2017 and from 5.2% to 5% in non-OIC developing countries during the same period. On the other hand, with 6.1% in 2017, male unemployment rates in developed countries reached to its same level in 2005 after surging up to 8.7% in 2010 due to the global financial crisis.

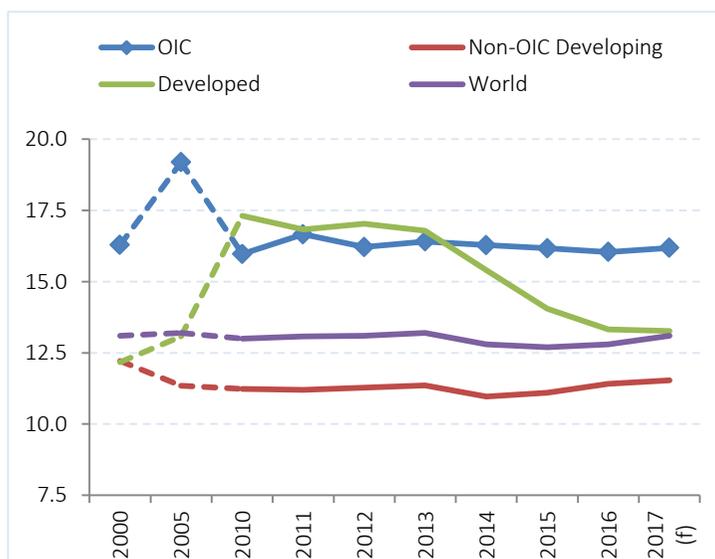
At the individual country level, unemployment rates greatly varied among OIC countries (Figure 2.16). The unemployed people in 2016 constituted less than one 1% of total labour force in Qatar (0.2%), which is also the lowest rate in the world. Benin (1%) and Bahrain (1.3%) are also among the ten countries in the world with lowest unemployment rates. However, unemployment is a serious concern in Gambia (29.7%), Palestine (24.9%), Mozambique (24.4%) and Comoros (20%), where the rate is above 20%.

- **Youth Unemployment:** With a rate of 16.0% in 2016, OIC countries have the highest youth unemployment

Youth (aged 15 to 24 years) continue to suffer from lack of decent job opportunities across the globe. According to the latest estimates, the number of unemployed youth globally will reach 71 million in 2017 (ILO, 2016). Accordingly, the global youth unemployment rate is on the rise after a number of years of improvement, and is expected to reach 13.1% in 2017 (from 12.9% in 2015). This is very close to its historic peak in 2013 (at 13.2%). It is particularly high in the Northern Africa (29.3%) and the Arab States (30.6%).

The figures on youth unemployment rates in OIC countries are not quite promising. The rate remained constantly above 16% and also well above the averages of non-OIC developing and developed countries since 2000.

Figure 2.17: Youth Unemployment Rate



Source: SESRIC staff calculations based ILO, KILM 2017 Dataset, (f:forecast).

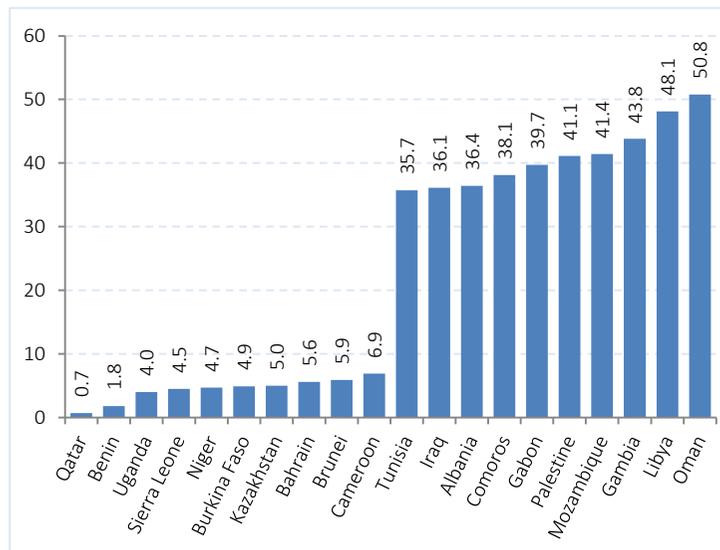
2000. After the financial crisis that hit developed economies, the problem of youth unemployment in these countries became even more serious compared to that in OIC countries during the period 2009-2013 (Figure 2.17). As of 2017, youth unemployment in OIC countries is expected to remain at 16.2%, while it will decline to 13.3% in developed countries and remain at 11.5% in non-OIC developing countries.



As in other major labour market indicators, despite some improvement since 2005, female unemployment among young people is highest in OIC countries. It is expected to fall to 18.2% in 2017 from its level of 23.2% in 2005 (SESRIC, 2017). While female unemployment among youth has been decreasing in OIC developing countries during the period under consideration, it did not change significantly in other country groups. As of 2017, it is estimated that 12% of youth labour force in non-OIC developing countries and 12.3% in developed countries will remain unemployed. With respect to male unemployment among youth, it is expected to increase to 15.1% in 2017 in OIC countries and 11.2% in non-OIC developing countries, but decrease to 14.1% in developed countries compared to the rate observed in 2010.

There are again wide discrepancies in youth unemployment rates across OIC countries. Qatar (0.7%) and Benin (1.8%) are the countries with lowest unemployment rates in 2016, which are also among top five countries in the world (Figure 2.18). In contrast, the highest youth unemployment rate was estimated in Oman (50.8%), followed by Libya (48.1%), Gambia (43.8%), Mozambique (41.4%) and Palestine (41.1%). In 2016, youth unemployment rate was above 20% in 22 OIC countries and above the world average of 13.1% in 34 OIC countries.

Figure 2.18: OIC Countries with Lowest and Highest Youth Unemployment Rates, 2016

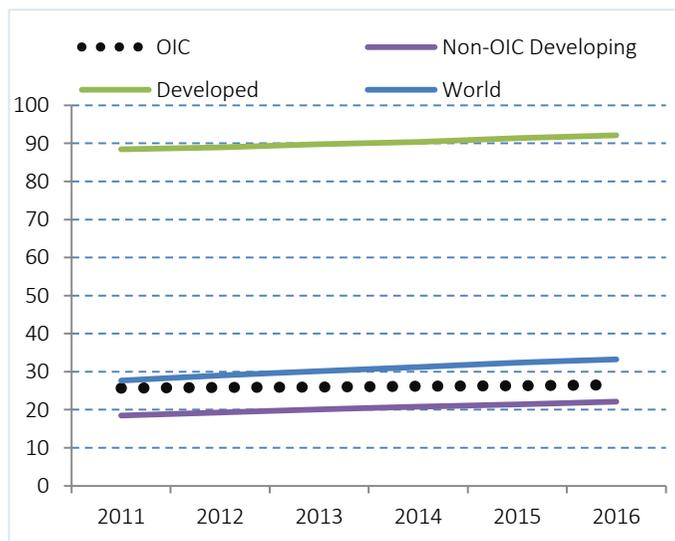


Source: ILO, KILM 2017 Dataset.

- **Labour Productivity:** Only five OIC countries recorded output per worker higher than developed countries' average

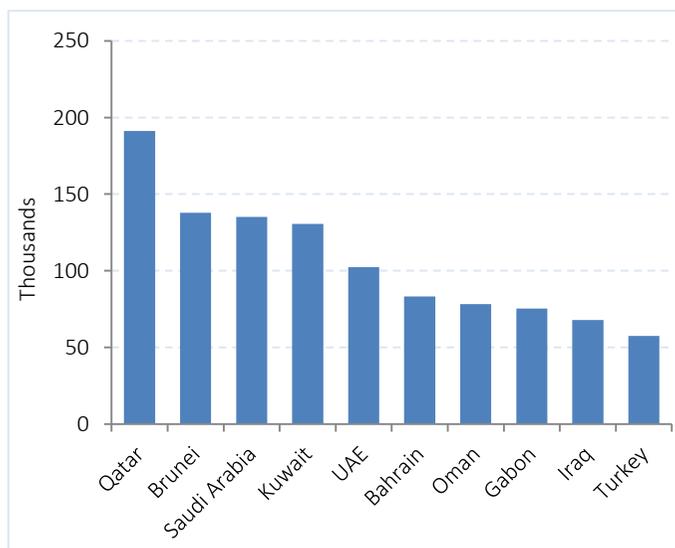
Productivity plays a pivotal role in the development of an economy. It helps to increase real income and improve living standards by catalysing the economic growth. Labour productivity is usually defined as the output per unit of labour input or output per hour worked. It helps to identify the contribution of labour to the GDP of a country and provides a base for cross country comparison and explanation of income disparities.

Figure 2.19: Labour Productivity (GDP per worker, Thousands US\$ PPP)



Source: SESRIC staff calculations based on ILO, KILM 2017 Dataset.

Figure 2.20: Top 10 Countries with Highest Labour Productivity, 2016



Source: ILO, KILM 2017 Dataset.

At the global level, labour productivity has witnessed an increasing trend during the period 2000-2016. As shown in Figure 2.19, output per worker in OIC countries has increased from US\$ 19,400 in 2000 to US\$ 26,500 in 2016, as measured in constant international prices based on purchasing power parity (PPP). This upward trend was only affected by financial crisis in 2008 during the whole period under consideration. The labour productivity gap between the developed and developing countries remained substantial throughout this period as output per worker in the developed countries is estimated at US\$ 92,142 in 2016 compared to just US\$ 22,123 in non-OIC developing countries and US\$ 26,500 in OIC countries. This means that an average worker in the group of non-OIC developing countries produces only 24.0% of the output produced by an average worker in the developed countries and an average worker in OIC countries produces only 28.8% of the output produced by an average worker in the developed countries.

At the individual country level, Qatar registered the highest output per worker (US\$ 191,200) in 2016, followed by Brunei Darussalam (US\$ 137,800), Saudi Arabia (US\$ 135,200), Kuwait (US\$ 130,600) and United Arab Emirates (US\$ 102,300). Among the OIC member countries, the lowest labour productivity level was recorded in Somalia (US\$ 1,200) followed by Guinea (US\$



2,600) and Niger (US\$ 2,900). Only five member countries recorded output per worker higher than the average of developed countries (Figure 2.20).

▪ **Inflation:** Inflation in OIC countries remained significantly higher than the global average

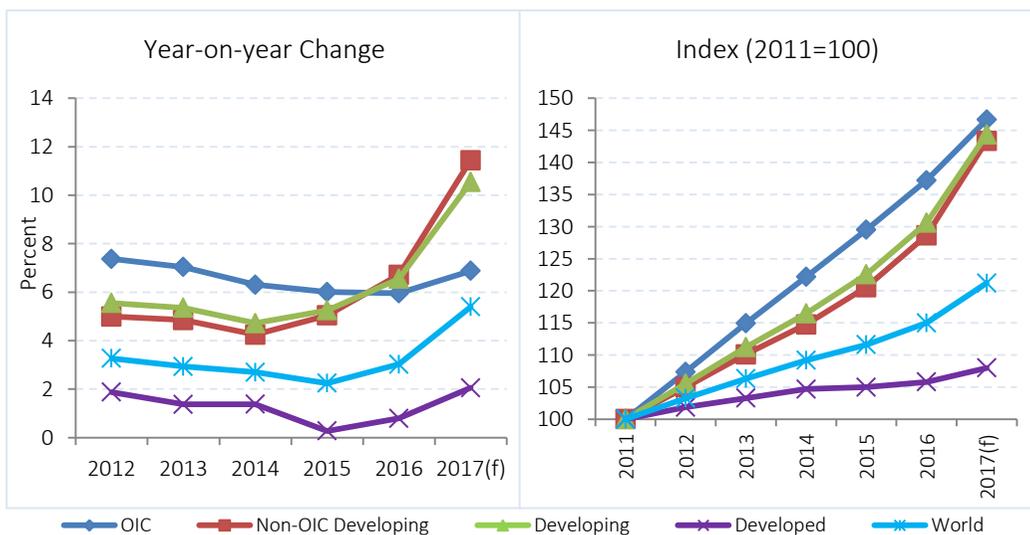
Inflation is on decline across the globe reflecting primarily the impact of decline in prices for oil and other commodities. The latest estimates show that global inflation rate has decreased from 4.2% in 2011 to 3.0% in 2016; however it is expected to climb up to 5.4% in 2017.

As seen in Figure 2.21, price volatility remained a major concern especially for the developing countries. In the aftermath of the crisis, developed countries did not follow an uncontrolled monetary expansion, despite the existence of high pressure from public. As a result, the change in consumer prices remained below one in 2015 and despite an upward trend inflation rate is expected to remain less than 1% in 2016. In developing countries, the inflation rate decreased from 7.0% in 2011 to 5.2% in 2015. The expected inflation for 2016 is at 7.4% for these countries.

In the OIC countries, average inflation rate for 2016 was higher than the world average. Unlike the global trends, inflation in the OIC countries remained stable around 6%. The average consumer price index marked an increase of 27.8% in the OIC countries during 2012-2016 (Figure 2.21, right). This is well above the average increase recorded in non-OIC developing countries (22.5%) as well as in the world (11.4%) during the same period.

In the short-term outlook, as elsewhere, inflationary pressures are projected to remain high for the OIC countries. The forecasts show that the growth in average consumer prices in the OIC countries will increase to 6.9% in 2017 (Figure 2.21, left panel).

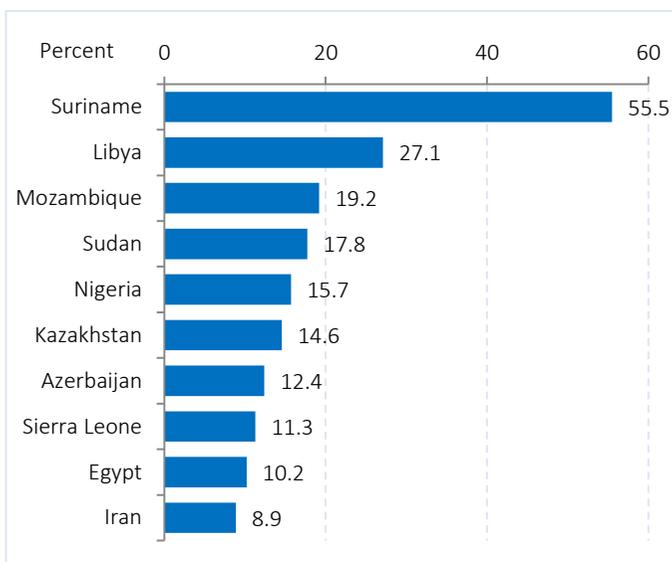
Figure 2.21: Annual Average Inflation (Consumer Prices)



Source: IMF WEO Database April 2017 and SESRIC BASEIND Database.

At the individual OIC country level, Suriname recorded the highest average consumer prices inflation rate of 55.5% in 2016, which was also the 3rd highest in the world, followed by Libya (ranked 5th in the world), Mozambique (ranked 8th) and Sudan (ranked 10th). Iran, with an average inflation rate of 8.9%, was ranked 10th within the OIC group and 23rd in the world (Figure 2.22).

Figure 2.22: Top 10 OIC Countries by Annual Average Inflation (2015)



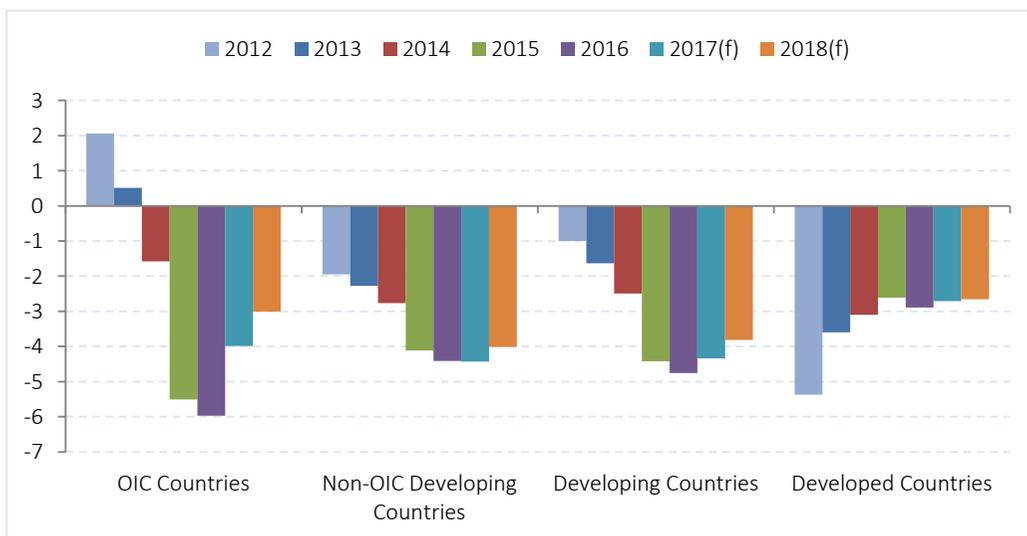
Source: IMF WEO Database April 2017 and SESRIC BASEIND Database.

▪ **Fiscal Balance:** OIC countries recorded the highest fiscal deficits in 2016

Latest statistics show that the fiscal tightening policies especially in developed countries have achieved the expected effect and their fiscal balances are improving. Nevertheless, sharp decline in commodity prices especially

for oil lead to significant increase in fiscal deficits in all major oil exporting countries in the developing world. As shown in Figure 2.23, developed countries witnessed significant improvement in their fiscal situation and their fiscal balance deficit as percent of GDP has

Figure 2.23: Fiscal Balances (% of GDP)



Source: IMF WEO Database April 2017 and SESRIC BASEIND Database.

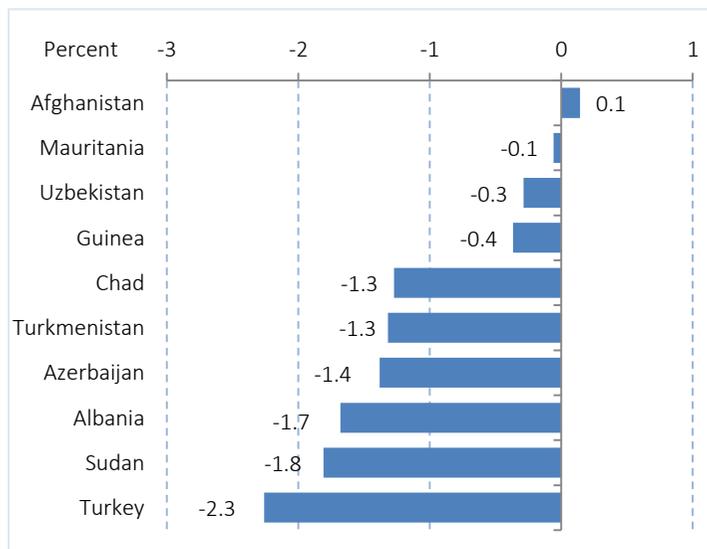


declined from -5.4% in 2012 to -2.9% in 2016. This ratio is expected to decrease to -2.7% in 2017 and 2018 for these countries. Developing countries also have registered negative fiscal balances but remained in relatively better position than the developed countries during the most of period under consideration. However, in 2016, the ratio was observed at -4.8% for developing countries group, however it is expected to decrease to -4.3% and -3.8% in 2017 and 2018 respectively.

During the period under consideration, the OIC member countries as a group witnessed sharp decline in their fiscal balance after 2013. In 2016, OIC countries recorded fiscal balance of -6.0% of GDP. This sharp increase in fiscal deficit in OIC countries is largely triggered by the sharp decline in oil prices and consequently deteriorating fiscal position of oil exporting OIC countries. The fiscal deficit is, however, expected to improve to -4.0% in 2017 before declining further to -3.0% in 2017.

At the individual country level, only 1 out of 54 OIC countries with available data have recorded fiscal balance surplus in 2016. Among the top-10 countries, only Afghanistan recorded fiscal surplus (0.14 % of GDP). During 2012-2016, all oil exporting OIC countries have witnessed significant decline in their fiscal balance surplus. In 2016, the highest fiscal deficit was recorded in Libya (-53.4%) followed by Brunei (21.9%), and Oman (-20.6%).

Figure 2.24: Top 10 OIC Countries by Fiscal Balance, % of GDP (2016)



Source: IMF WEO Database April 2017 and SESRIC BASEIND Database.



CHAPTER THREE

Trade and Finance



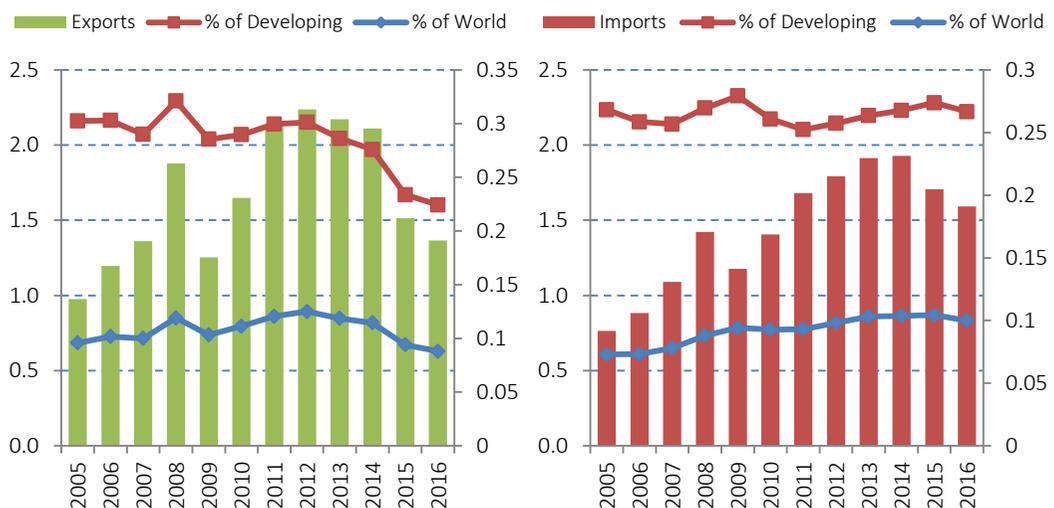
3.1 Trade in Goods and Services

- **Merchandise Trade:** Share of OIC countries in world's total exports further decreased to 8.6% in 2016 compared to 12.3% in 2012.

The total value of world merchandise exports, according to the IMF Directions of Trade Statistics (DOTS), was recorded at US\$ 15.7 trillion in 2016, as compared to US\$ 16.3 trillion in 2015. This corresponds to 3.2% contraction in total world export volume and reflects the weakening of global economic activity. It is the second consecutive year that the volume of world merchandise exports contracted after the global financial crises in 2009.

After the sharp fall in total merchandise exports from OIC countries following the global financial crisis in 2009, it started to increase rapidly over the new few years and reached its historically highest level of US\$ 2.2 trillion in 2012 (Figure 3.1). This upward trend was stronger than those observed in non-OIC developing countries and the world as a whole, resulting in an increase in the shares of OIC countries in total developing country and world exports. Since then, this upward trend has been reversed and total exports of OIC countries started to fall again where it went down as low as US\$1.5 trillion in 2015. In 2016, total exports of OIC countries continued to fall and reached its lowest level since 2009 with US\$ 1.4 trillion. Other developing countries also saw some significant increase in their total exports. As a result, the share of OIC countries in total exports of developing countries plunged to 22.4% in the same year, compared to 30.1% in 2012, and continued to remain below its pre-crisis level of 32.1% observed in 2008. OIC countries' collective share in total world merchandise exports also followed a similar trend between 2012 and 2016, and decreased to 8.8% in 2016, which is the lowest ratio observed since 2005. The fall in exports can be partly explained by falling

Figure 3.1: Merchandise Exports and Imports (US\$ Trillion)



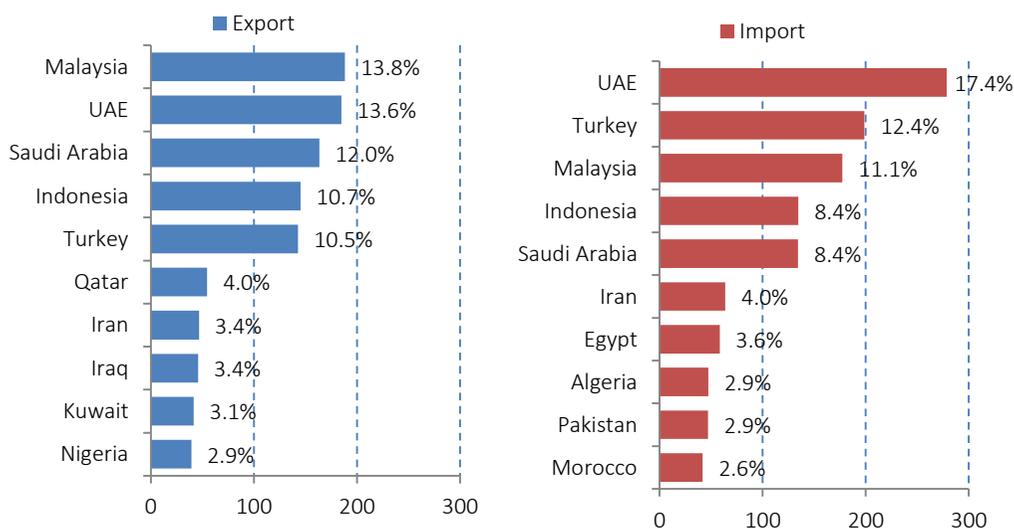
Source: IMF Directions of Trade Statistics (DOTS).

commodity prices, where OIC countries have significant concentration. Moving forward, to achieve long-term sustainable growth in merchandise trade and higher share in total world exports, OIC countries will apparently need more competitive economic sectors with significant diversification levels and higher technological intensity.

On the other hand, total merchandise imports of OIC countries experienced a stronger post-crisis bounce-back and increased from \$1.2 trillion in 2009 to \$1.9 trillion in 2014 (Figure 3.1, right). However, OIC countries also witnessed a fall in imports over the period 2015-2016, which was measured at US\$ 1.6 trillion in 2016. Despite the fall in import volumes in recent years, the share of OIC countries in global merchandise imports continued to expand throughout the period under consideration and reached 10% in 2016, compared to 7.3% in 2006. Similarly, their share in total developing country merchandise imports was recorded at 26.7% in 2016, dropping from 27.4% in the previous year.

In terms of the shares of the individual member countries in total merchandise exports from the OIC region, it has been observed that the bulk of total exports from the OIC countries continued to be concentrated in a few countries (Figure 3.2, left). In 2016, the top 5 largest OIC exporters accounted for 57.4% of total merchandise exports of all member countries whereas the top 10 countries accounted for 77.4%. Malaysia with US\$ 188 billion of merchandise exports and 13.8% share in total OIC exports, became the largest exporter in 2016. It was followed by United Arab Emirates (US\$ 184 billion, 13.6%), Saudi Arabia (US\$ 163 billion, 12.0%), Indonesia (US\$ 145 billion, 10.7%) and Turkey (US\$ 142 billion, 10.5%). In general, fall in commodity prices reduced the shares of commodity exporting countries and increased the shares of manufacturing goods exporters.

Figure 3.2: Top OIC Merchandise Exporters and Importers (2016, US\$ Billion)



Source: IMF Directions of Trade Statistics (DOTS).



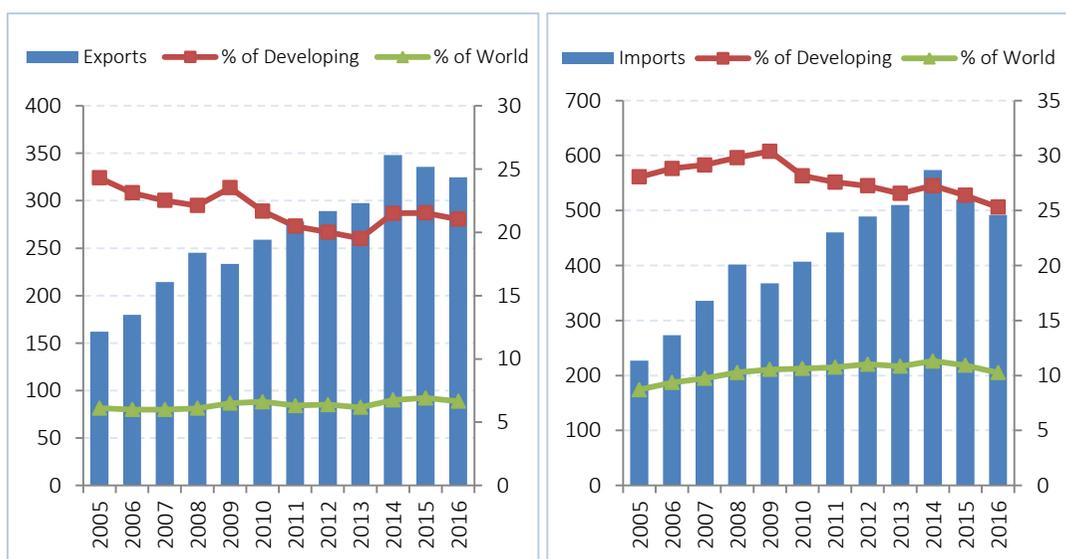
As in the case of exports, merchandise imports of OIC countries were also heavily concentrated in a few countries. As depicted in the right panel of Figure 3.2, with US\$ 278 billion and US\$ 199 billion of imports, United Arab Emirates and Turkey, respectively, took the lead in 2016 in terms of volume of merchandise imports and together accounted for 29.9% of total OIC merchandise imports. They were followed by Malaysia (US\$ 177 billion, 11.1%), Indonesia (US\$ 134.6 billion, 8.4%) and Saudi Arabia (US\$ 134.4 billion, 8.4%), which collectively accounted for a further 27.9% share in the OIC merchandise imports. Accordingly, the top 5 OIC importers accounted for 57.7% of total OIC merchandise imports, whereas the top 10 countries accounted for 73.9%.

To sustain long-term economic growth, OIC countries need to reduce the high reliance on exports of mineral fuels and non-fuel primary commodities, which involve the least technological intensity, and devise and implement specific policies for adopting more advanced manufacturing methods to increase the share of more technology intensive commodities in exports. This is also necessary for increasing competitiveness of tradable products in international export markets.

- **Services Trade:** Share of OIC countries in total services exports of all developing countries could not reach its pre-crisis level since 2009

The services sector plays an increasingly important role in the global economy and the growth and development of countries. It is also a crucial component in poverty reduction and access to basic services, including education, water and health services. The services sector has emerged as the largest segment of the economy, contributing growing shares in gross domestic product (GDP), trade and employment. According to 2016 editions of the World Bank's World Development Indicators and United Nations' National Accounts Main Aggregates Databases the

Figure 3.3: Services Exports and Imports (US\$ Billion)



Source: UNCTAD STATS.

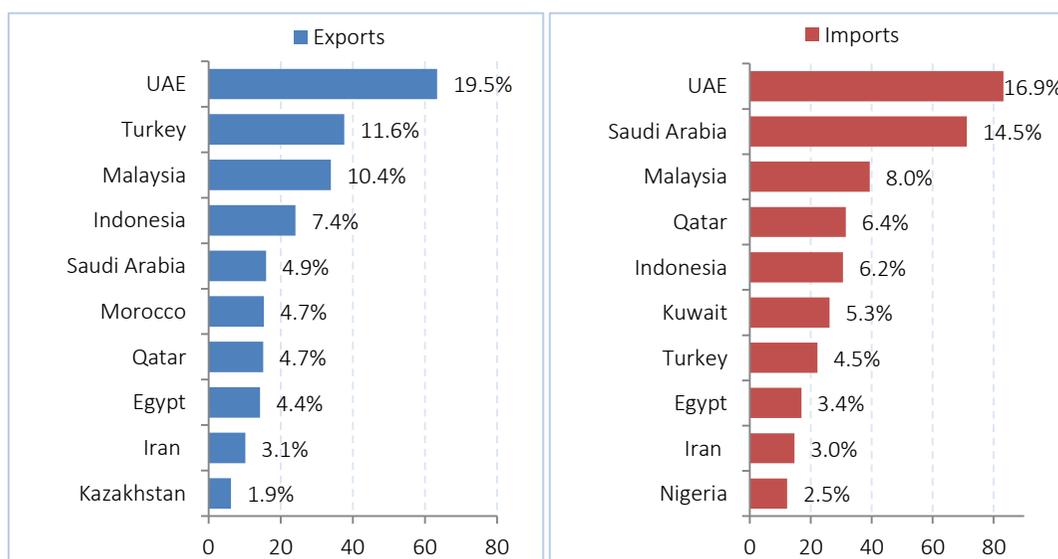
services sector accounted on average for 65%-66% of the global value-added during 2011-2014 and it is expanding more rapidly than the other two main sectors of the economy, namely, agriculture and the industry. The sector accounts for nearly 60% of employment worldwide. Trade in services constitutes around 20% of world trade of goods and services, with two thirds of global foreign direct investment (FDI) flowing into the sector (UNCTAD, 2013a).

Yet these figures do not translate into a strong presence in world trade. In 2016, world services exports totalled only US\$ 4.9 trillion, compared to US\$ 15.7 trillion of merchandise exports in the same year. As a group, the OIC countries remained net importers of services. According to UNCTAD, OIC countries exported US\$ 324 billion worth of services in 2016, whereas the OIC services imports were recorded at US\$ 491 billion in the same year (Figure 3.3). Between 2009 and 2014, services trade volume of OIC countries exhibited a constant increase, however, both the years 2015 and 2016 witnessed a fall in exports and imports of services.

The share of OIC member countries in both services exports and imports of developing countries have followed a downward trend during the period 2005-2016 (Figure 3.3). While OIC countries accounted for 24.3% and 28.0% shares in developing country services exports and imports in 2005, respectively, these shares dropped to 21.0% and 25.3% in 2016. While the collective share of OIC member countries in the total world services exports increased from 6.1% in 2005 to 6.6% in 2016 and their share in the total world imports also went up from 8.7% to 10.3% during the same period.

Figure 3.4 shows the top 10 OIC countries according to the sizes of their services exports and imports. United Arab Emirates, with US\$ 63 billion exports and 19.5 % share in total OIC services exports, was the top exporter in services in 2016 (Figure 3. 4, left). It was followed by Turkey (US\$ 38 billion, 11.6%), Malaysia (US\$ 34 billion, 10.4%), Indonesia (US\$ 24 billion, 7.4%)

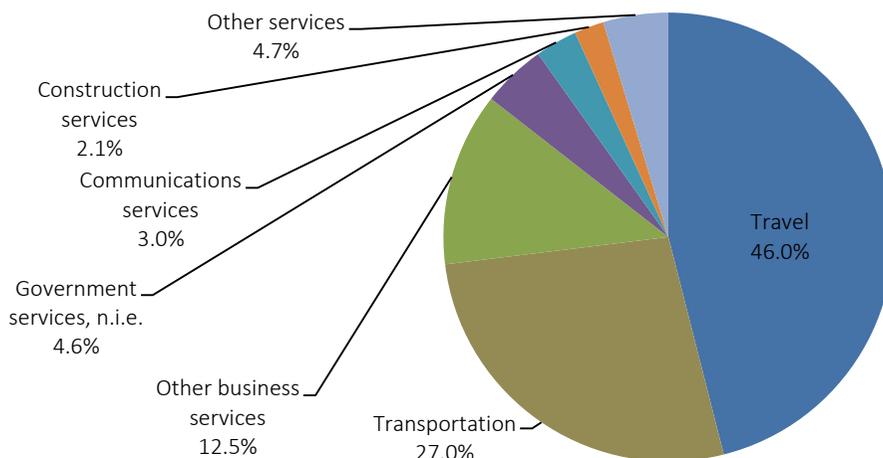
Figure 3.4: Top 10 OIC Services Exporters and Importers (2016, US\$ Billion)



Source: WTO.



Figure 3.5: Services Exports by Sector in 2015



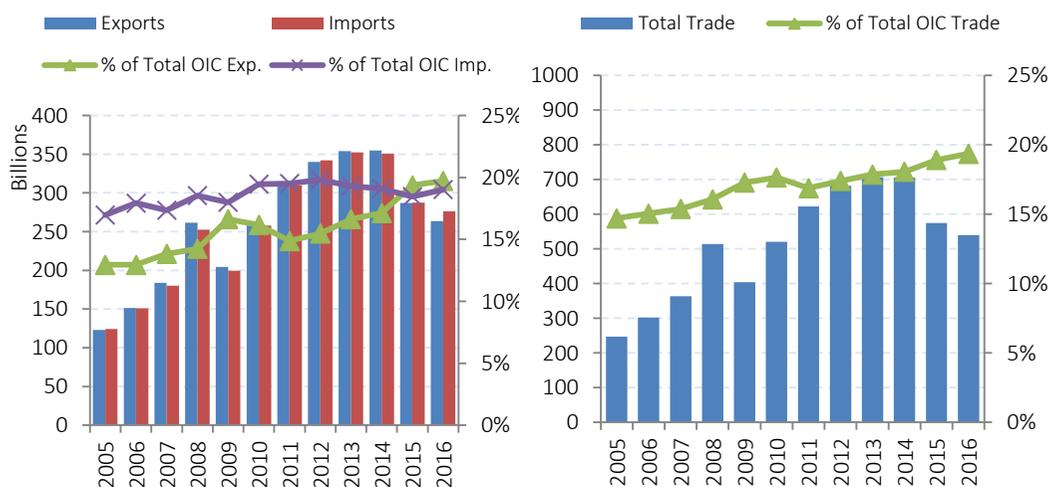
Source: UN COMTRADE.

and Saudi Arabia (US\$ 16 billion, 4.9%). In 2016, top 10 OIC countries accounted for 73% of total OIC services exports. As far as the service imports are concerned, the United Arab Emirates registered the highest service imports with an amount of US\$ 83 billion and 16.9% share in OIC total services imports. It was followed by Saudi Arabia (US\$ 71 billion, 14.5%), Malaysia (US\$ 39 billion, 8.0%), Qatar (US\$ 31 billion, 6.4%) and Indonesia (US\$ 30 billion, 6.2%). The top 10 OIC services importers collectively accounted for 70.8% of total services imports of OIC countries.

In terms of sectoral allocation of services exports by OIC countries, travel and transportation services account for bulk of the services exports in OIC countries according to the latest statistics. As depicted in Figure 3.5, these two sectors collectively make up 73% of all OIC services exports. The share of travel-related services exports was recorded above 40% and the share of transportation sector was measured to be around 27%. The share of other business services category, including, but not limited to, research and development, and legal services, in total OIC services exports reached 12.5%. On the other hand, the subsectors of government, communications, construction and financial services collectively represented 11.7% of all services exports.

- **Intra-OIC Trade:** Share of intra-OIC trade in total trade of OIC countries reached 20.0% in 2016.

After witnessing a sharp fall in 2009, total merchandise trade among the OIC countries recovered quickly and, following a steep upward trend, reached US\$ 705 billion in 2013 (Figure 3.6, left). Since then, it started to decrease and was measured as US\$ 540 billion in 2016. As the fall in total exports of OIC countries was even bigger, the share of intra-OIC trade continued to rise even in 2016. Accordingly, the share of intra-OIC trade increased from 16.9% in 2011 to

Figure 3.6: Intra-OIC Merchandise Exports and Imports (US\$ Billion)

Source: IMF Directions of Trade Statistics (DOTS).

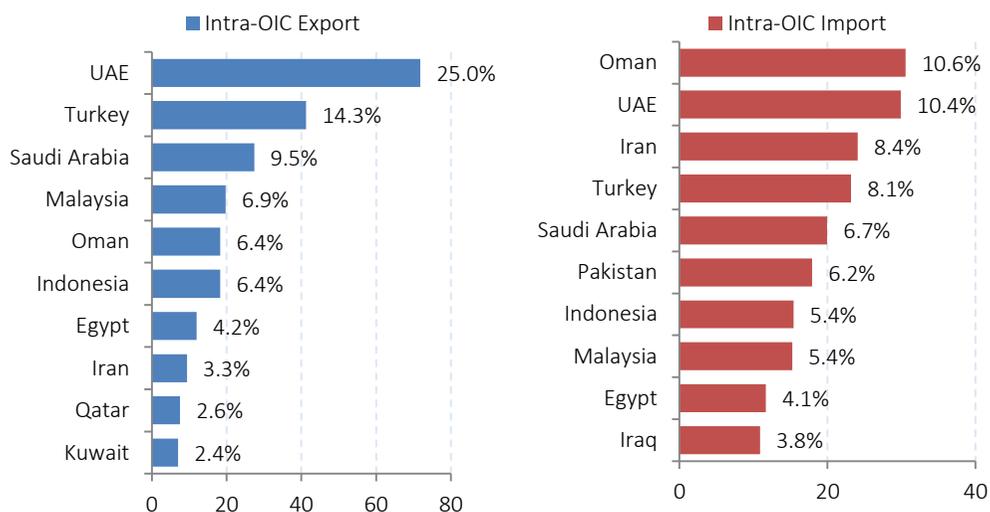
18.9% in 2015 and further increased to 19.4% in 2016. Since 2005, this share has continuously increased, except in the year 2011. However, in order to achieve the 25% target stated in the OIC Ten-Year Programme of Action (OIC-2025), further efforts should be made to keep the trend rising.

In 2015, intra-OIC exports were recorded at US\$ 287 billion, but it decreased to US\$ 263 billion in 2016. The amount is still more than two times higher when compared to total intra-OIC exports of US\$ 123 billion in 2005, but almost at similar levels observed in 2008 just before the global economic crisis (Figure 3.6, right). The share of intra-OIC exports in total OIC exports continued to increase since 2011 and reached 19.7% in 2016. Intra-OIC imports reached US\$ 352 billion (its peak value since 2005) in 2013 and started to decrease where it was measured as US\$ 276 billion in 2016 (Figure 3.6, right). Again, these figures compared favourably to US\$ 199 billion bottom observed in 2009, when the global economic crisis were unfolding in its most severe form, and only US\$ 124 billion in 2005. The share of intra-OIC imports also increased from 18.5% in 2015 to 19.0% in 2016.

In order to increase the share of trade among them in their total merchandise trade even further, OIC countries should not only focus on operationalizing the OIC Trade Preferential System (TPS-OIC) with broader participation from the member countries, but also promote diversification and competitiveness of their tradable products taking into account their mutual needs and benefits from trade. Yet, the progress made in operationalization of the system is rather sluggish (SESRIC, 2016).

Figure 3.7 (left) depicts the top 10 member countries in terms of the volume of their intra-OIC exports. In 2016, top 5 OIC intra-OIC exporters accounted for as much as 62.0% of total intra-OIC exports whereas the top 10 exporters for 81.0%. United Arab Emirates ranked first with



Figure 3.7: Intra-OIC Merchandise Exports and Imports (2016, US\$ Billion)

Source: IMF Directions of Trade Statistics (DOTS).

US\$ 71.8 billion and 25.0% of total intra-OIC exports, followed by Turkey (US\$ 41.3 billion, 14.3%), Saudi Arabia (US\$ 27.4 billion, 9.5%), Malaysia (US\$ 19.7 billion, 6.9%) and Oman (US\$ 18.3 billion, 6.4%).

The top OIC countries in terms of intra-OIC imports are also depicted in Figure 3.7 (right). In 2016, Oman, with US\$ 30.5 billion total volume and 10.6% share in total, was the largest importer from OIC countries. It was followed by United Arab Emirates with US\$ 29.9 billion and 10.4% share and Iran with US\$ 24.1 billion and 8.4% share. Top 5 OIC countries accounted for 44.5% of total intra-OIC imports and top 10 countries accounted for 69.3% in 2016.

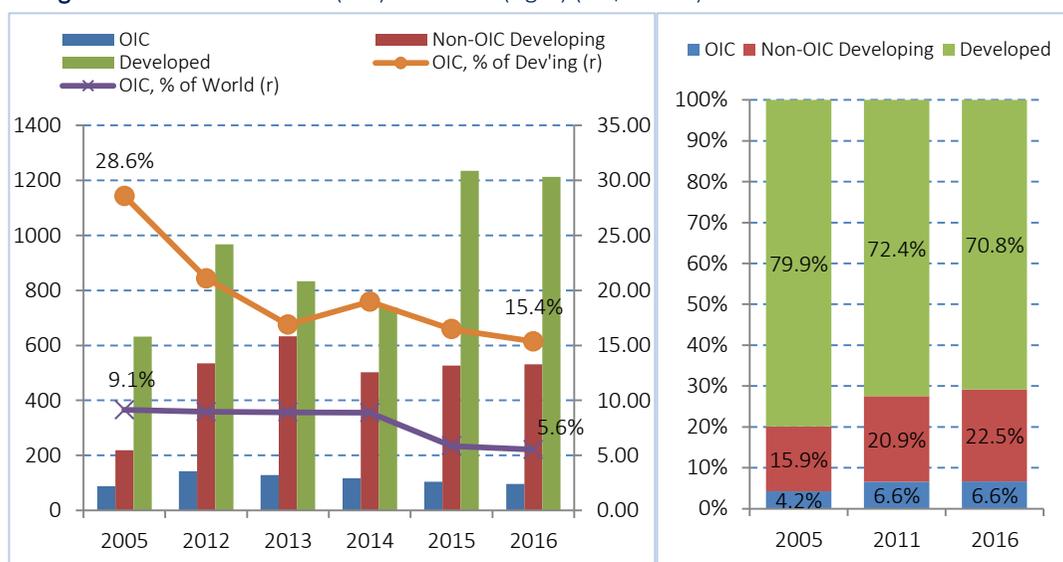
3.2 Investment and Finance

- **FDI Inflows:** Share of OIC countries in total world FDI inflows fell to 5.5% in 2016, lowest level in recent years

World total foreign direct investment (FDI) inflows amounted to US\$ 1.75 trillion in 2016, marking a slight decrease of US\$ 27.6 billion over previous year's value of US\$ 1.77 trillion. It is the first time in the last five years that the volume of global FDI inflows recorded a contraction. As of 2006, 71% of global FDI inflows, which was then worth of US\$ 1 trillion, were destined for developed countries, while the rest for developing economies. In 2013, developing countries reached a peak share value of 52.8% of the global FDI inflows. Since then, their share gradually decreased in the global FDI inflows. As a result, in 2016, the share of developed countries recorded at 64.1% thanks to the economic recovery in these countries and growing imbalances in some major developing economies.

Figure 3.8 (left) depicts the total FDI flows to OIC countries in comparison to non-OIC developing and developed countries. It is observed from the figure that, during the period under consideration, FDI flows to OIC countries generally remained sub-potential. The total US\$ value of FDI inflows to OIC member countries was recorded at as low as US\$ 87.5 billion in 2005. After global economic crisis, between 2012 and 2015 it remained in the US\$ 142-104 billion band. In 2016, the total value of FDI flows to OIC countries was recorded at US\$ 96.3 billion, registering a decrease for four consecutive years from its 2012 value of US\$ 142.9 billion. The share of OIC countries in total flows to developing countries, on the other hand, has generally been on decline since 2012. The share of the OIC group in developing countries amounted 15.4% in 2016. The share of the OIC group in global FDI flows showed rather a fluctuating trend between 9.1% and 5.6% over the period 2005-2016. The share recorded in 2016 (5.6%) was the lowest level seen during the period under consideration.

Figure 3.8: Inward FDI Flow (left) and Stock (right) (US\$ Billion)

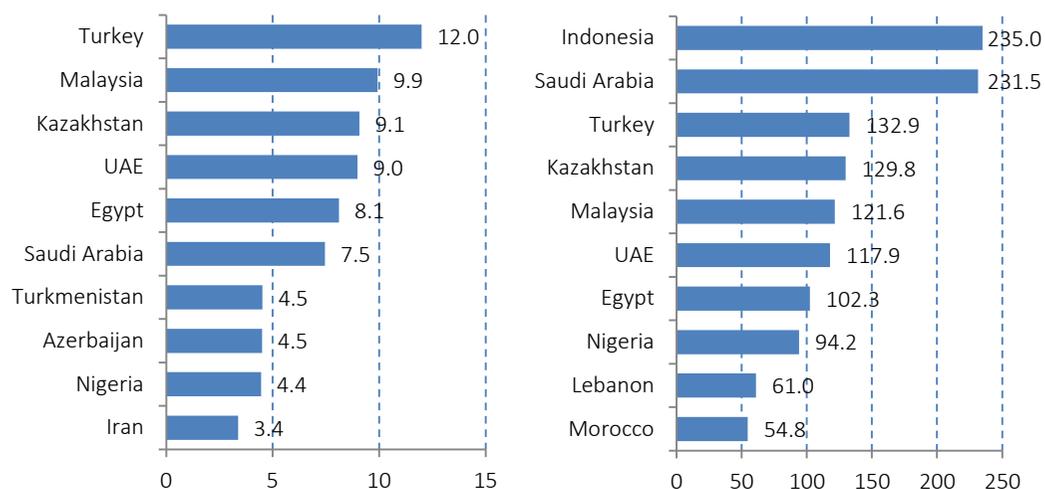


Source: UNCTAD STAT.

Global inward FDI stock reached US\$ 26.7 trillion in 2016. OIC countries, on the other hand, collectively hosted 6.6% of the global FDI stock, which marked a 2.4 percentage point improvement given the value in 2005 (Figure 3.8, right). Furthermore, the bulk of the inward FDI stock in developing countries is hosted by non-OIC developing countries, which collectively recorded a 22.5% share in global inward FDI stock in 2016. Overall, developing countries increased their share in the world from 20.1% to 29.2% between 2005 and 2016, which was offset by a decrease in the share of developed countries.

Like in the case of other major macroeconomic aggregates of the OIC group, FDI flows to OIC countries also exhibited a high level of concentration, with bulk of it persistently being directed to a few of them. The top 5 OIC countries with largest inward FDI flows together accounted for 49.9% of total FDI flows to OIC countries, whereas the top 10 countries accounted for 75.1%



Figure 3.9: Top 10 Hosts of Inward FDI Flows (left) and Stock (right) (2016, US\$ Billion)

Source: UNCTAD STAT.

(Figure 3.9, left). In 2016, Turkey took the lead in FDI inflows with US\$ 12 billion of inward FDI flow, and a 12.4% share in total FDI flows to OIC countries. Turkey was followed by Malaysia (US\$ 9.9 billion, 10.3%), Kazakhstan (US\$ 9.1 billion, 9.4%), United Arab Emirates (US\$ 9.0 billion, 9.3%) and Egypt (US\$ 8.1 billion, 8.4%).

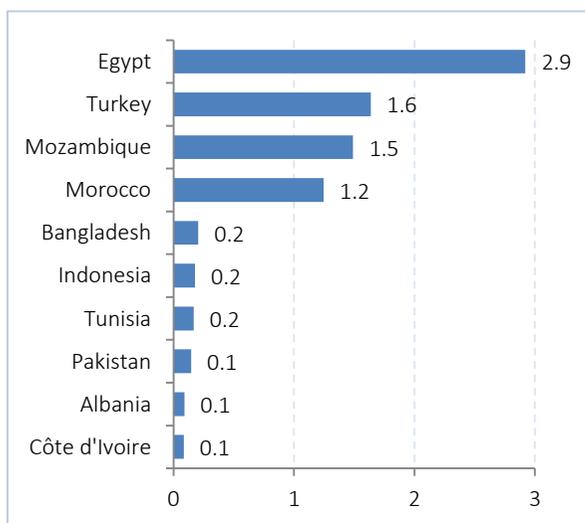
A similar picture is observed in the case of inward FDI stock as well: top 5 countries hosted 46.2% of total OIC inward FDI stocks whereas the top 10 countries 69.6%. With US\$ 235 billion of inward FDI stocks (12.8% of the OIC total), Indonesia ranked first among the list of OIC countries with largest inward FDI stock in 2016. Indonesia was followed by Saudi Arabia (US\$ 231.5 billion, 12.6%), Turkey (US\$ 132.9 billion, 7.2%), Kazakhstan (US\$ 129.8 billion, 7.0%) and Malaysia (US\$ 121.6 billion, 6.6%).

Overall, this state of affairs suggests that a significant majority of the OIC countries are still not able to set up favourable economic frameworks and to provide the foreign businesses with adequate regulatory as well as physical infrastructure to attract more FDI flows. Consequently, OIC countries, in general, need to take swift measures to foster an environment conducive to attracting more foreign investments. To achieve this goal, reforms are needed to improve the business climate and to introduce investment incentives tailored to the needs of both domestic and foreign investors. This, in turn, requires building adequate infrastructure as well as investing in modern technologies to enhance their productive capacities, which is still a significant challenge to majority of them.

Intra-OIC FDI inflows and instocks (i.e. inward stocks) reflect the directed investment from one source OIC country to another host OIC member country. As in other dimensions of the economic integration among OIC countries (e.g. intra-OIC trade and tourism), intra-OIC FDI trends can be a good indicator to assess the level of economic integration among OIC countries.

A higher volume of intra-OIC FDI inflows implies the existence of stronger economic ties among OIC countries. However, bilateral statistics on investment flows are hardly available. Among the countries for which data are available Figure 3.10 presents top OIC member countries in terms of intra-OIC FDI inflows in 2015. Among data available OIC countries, Egypt ranked first and attracted US\$ 2.9 billion FDI from other OIC member countries. Egypt was followed by Turkey with an amount of US\$ 1.6 billion intra-OIC FDI inflows. During the same period, Mozambique and Morocco also attracted more than US\$ 1 billion FDI from OIC member countries.

Figure 3.10: Top Performing OIC Countries in terms of Intra-OIC FDI Inflows (US\$ Billion), 2015



Source: UNCTAD STAT.

The intra-OIC FDI inflows figures recorded in 2015 provide some clues on the imbalanced investment flows among OIC countries. A group of few OIC countries attracted relatively more intra-OIC FDI than other member countries. Therefore, not all OIC member countries witnessed an overall improvement in intra-OIC cooperation when it is measured in terms of FDI.

According to SESRIC (2016a), over the period 2001-2012 intra-OIC FDI inflows followed a positive pattern, despite having some booms and busts. Nevertheless, the existing levels seen in intra-OIC FDI figures are still far below its potential (UNCTAD, 2013b). OIC member countries need to get a

common understanding that the economic integration and cooperation can be deepened through improving intra-OIC FDI flows. In turn, this can boost economic growth and trigger development. However, existing barriers in OIC member countries ahead of investors in terms of institutional quality, visa regimes, restrictions on profit and capital transfers etc., limits the level of economic cooperation among them.

In this respect, more policy-interventions are needed to reduce intra-OIC investment barriers. The success on reaching the potential in intra-OIC FDI are closely linked to the determination of policy-makers of OIC countries to adopt some concrete policy measures for reducing trade and investment barriers, abolishing/easing visa regimes, and facilitating capital transfers among OIC member countries.

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- **Financial Sector Development:** Degree of financial deepening in OIC countries remained unsatisfactory
-

A well-functioning financial system can pave the way for rapid economic development through, inter alia, the efficient allocation of domestic savings into productive economic activities. The



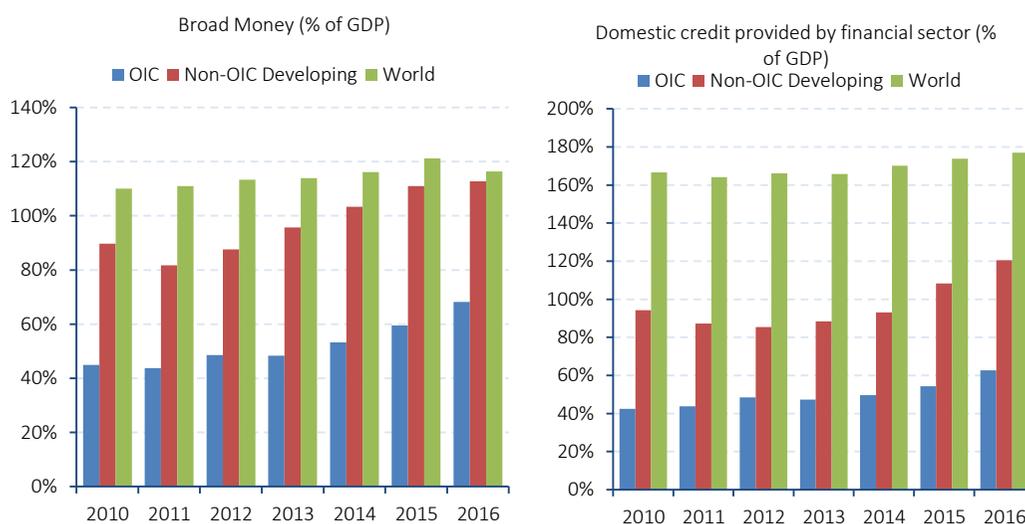
importance of this role has indeed gained much attention in the literature on economic growth, and a strong consensus has emerged in the last decade that well-functioning financial intermediaries have a significant impact on economic growth (Levine, 2004).

A commonly used indicator for determining the degree of financial deepening is the ratio of broad money to GDP. A higher ratio is generally associated with greater financial liquidity and depth. As shown in Figure 3.11 (left), the average volume of broad money relative to the GDP of OIC countries was recorded at 68.2% in 2016, compared to as much as 112.7% in non-OIC developing countries and 116.4% of the world average. Apparently, the financial sector in the member countries lag behind in the provision of sufficient liquidity and better investment opportunities to the economy at lower cost. This state of affairs partially manifests itself in low levels of credit provided by the financial sector as % of GDP. In 2016, the financial sector on average provided credit to the domestic economy as much as 62.7% of the GDP in OIC countries whereas, in non-OIC developing countries, this figure was 120.5% (Figure 3.11, right). In the same year, the global average was recorded at 176.9% that significantly exceeded the average of both OIC countries and non-OIC developing countries.

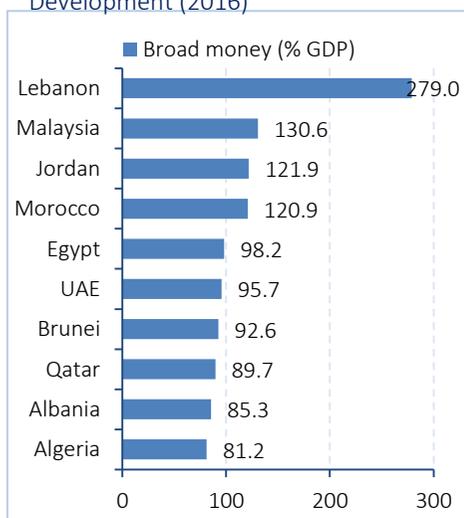
The degree of financial development varies substantially across the OIC countries. While some member countries have relatively more advanced financial systems including vibrant banking, insurance and other financial institutions, and effective financial regulatory and supervisory regimes; many others lag behind in terms of their stages of financial development. This, in turn, offers a significant room for improvement of financial systems in OIC countries.

Taking into account the widely accepted view that the financial deepening confers important stability benefits to the economy, albeit with caveats, many OIC countries are apparently deprived of these stability benefits. Yet, there are some exceptions to this such as Lebanon, Malaysia and Jordan where financial depth, as measured by the volume of broad money

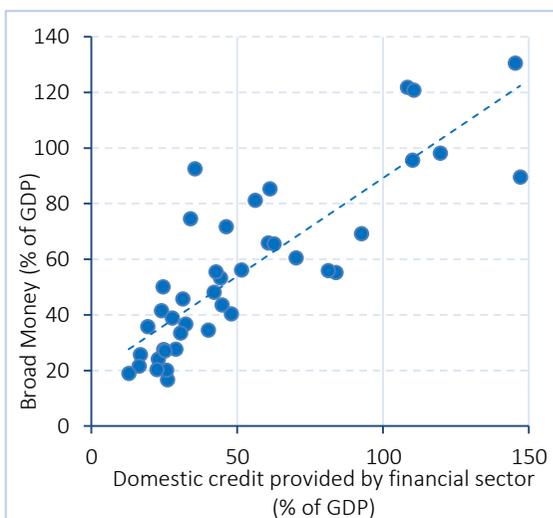
Figure 3.11: Financial Sector Development



Source: World Bank WDI.

Figure 3.12: Financial Sector Development (2016)

Source: World Bank WDI.

Figure 3.13: Liquidity versus domestic credit

Source: World Bank WDI.

relative to GDP, is above the average world level. In Lebanon, for instance, the total size of broad money which includes, inter alia, all narrow money and deposits, was more than twice the size of the GDP (279.0%), as shown in Figure 3.12. Similarly, in Malaysia, the size of liquidity in the economy corresponded to 130.6% of the GDP. In Jordan and Morocco the relative size of broad money to GDP also exceeded 100% threshold.

A report by IMF argues that financial deepening, through an increase in financial transaction volumes, can enhance the capacity of the financial system of a country to intermediate capital flows without large swings in asset prices and exchange rates (IMF, 2011). Deeper financial markets are argued to provide alternative sources of funding domestic financial market during times of international stress, limiting adverse spill-overs, as evidenced in the recent global financial crisis. Figure 3.13, in this regard, supports this argument for OIC countries by depicting the strength of relationship between broad money and availability of credit in 2016.

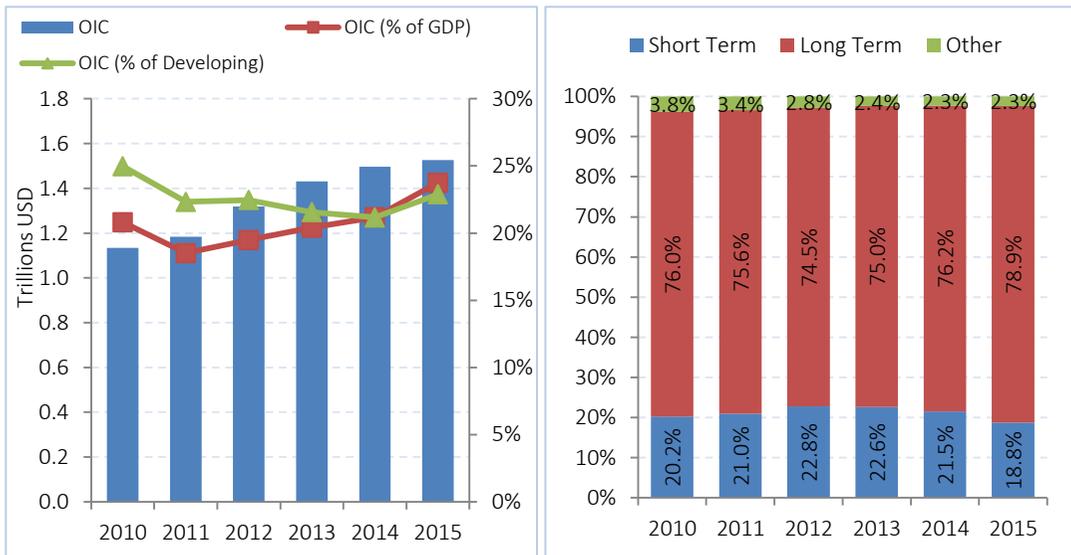
Yet, the evidence suggests that deeper financial markets can also attract volatile capital inflows, complicating macroeconomic management of the country's economy. Moreover, financial deepening can occur too quickly, leading to credit booms and subsequent busts. At the systemic level, all these factors, if properly managed, can attenuate the need to accumulate foreign assets, and, at the global level, promote global adjustment (Maziad et al., 2011).

- **External Debt:** Following the steady increase, the share of the short term debts decreased both in 2014 and 2015.

The total external debt stock of OIC countries showed an increasing trend during the period under consideration. In 2015, the total external debt of OIC countries grew by 2% compared to previous year and reached US\$ 1.52 trillion. On the other hand, 20 OIC countries still continue to be classified as Heavily Indebted Poor Countries (HIPC) by the World Bank. In line with the



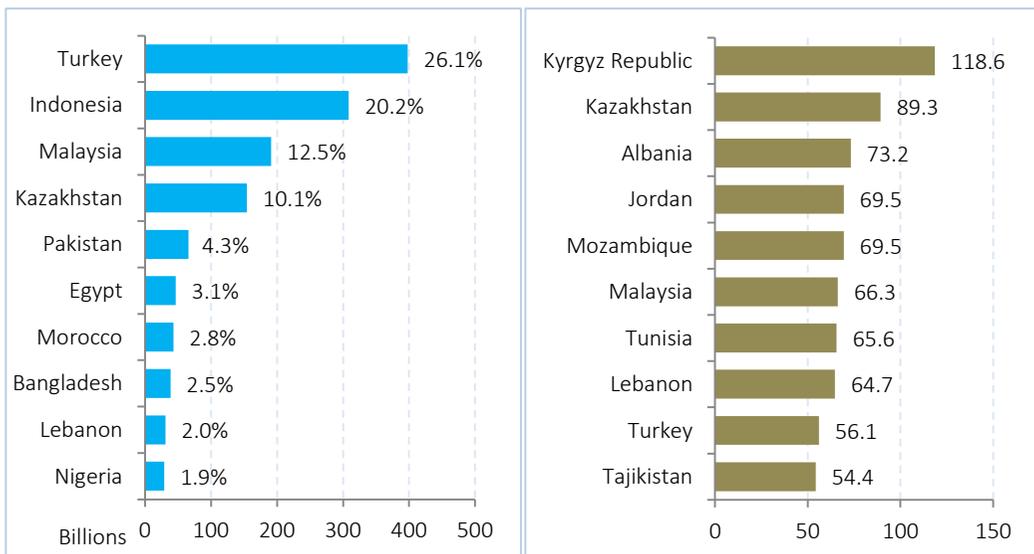
Figure 3.14: External Debt (left) and Term Structure of External Debt (right)



Source: World Bank WDI.

increasing amount of debt in absolute terms, Figure 3.14 (left) illustrates that both the relative size of OIC debt to their GDP and their share in the total developing countries debt has been increasing since 2010. In this regard, average debt-to-GDP for the indebted OIC countries increased from 20.8% in 2010 to 23.7% in 2015. During the same period, total external debt stock of OIC countries as percentage of total developing countries debt decreased slightly from 25.0% to 22.9%.

Figure 3.15: Top 10 Indebted OIC Countries (left) and Debt Stock as % of GNI (right)



Source: World Bank WDI.

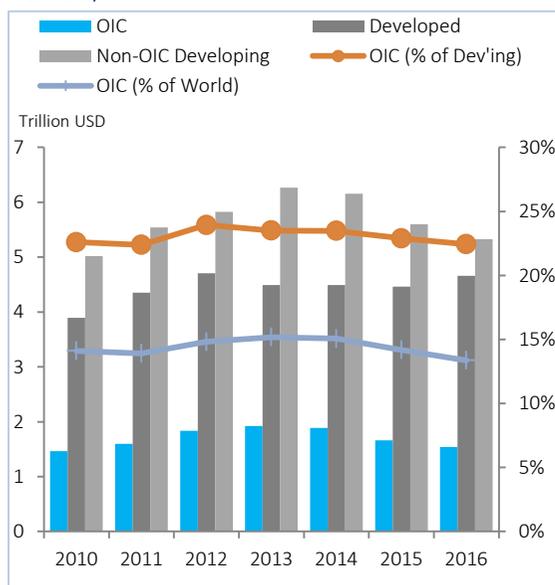
When the term structure of external debt of OIC countries is considered, it is observed that long-term debt continued to account for the largest portion of total OIC external debt, with 78.9% share in 2015. However, the share of short-term debt has been constantly rising during 2010-2012, which reached 22.8% in 2012 compared to 20.2% in 2010 (Figure 3.14, right). Over the period 2013-2015, it followed a downward pattern and decreased to 18.8% in 2015.

In terms of debt stock in absolute terms, Turkey was the most indebted OIC member country in 2015 (Figure 3.15, left). The country held US\$ 397 billion in debt, which made up 26.1% of total OIC external debt. Turkey was followed by Indonesia, Malaysia, Kazakhstan and Pakistan, which had external debt levels varying from US\$ 308 to 65 billion. Only 3 OIC countries accounted for as much as 58.8% of total OIC external debt whereas the top 10 countries for 85.5%. However, given the size of a country’s economic output, looking at the absolute size of debt stock might be misleading. Debt-to-GNI ratio, in that sense, is argued to give a more accurate view of a country’s indebtedness, adjusting it for the size of gross national income. In terms of relative size of external debt to GNI, Kyrgyz Republic, with a 118.6% debt-to-GNI, was the most indebted OIC country in 2015 (Figure 3.15, right). It was followed by Kazakhstan, Albania, Jordan, and Mozambique, with debt-to-GNI ratios varying from 89.3% to 69.5%.

- **Reserves:** In third consecutive year, total reserves of OIC countries continued to decrease in 2016.

Reserves are usually considered as an important instrument to safeguard the economy against abrupt external shocks. World total monetary reserves – including gold – increased from US\$ 10.4 trillion in 2010 to US\$ 12.4 trillion in 2012, but it decreased to US\$ 11.6 trillion in 2016. Of

Figure 3.16: Reserves including Gold (US\$ Billion)



Source: World Bank WDI.

Figure 3.17: Top 10 OIC Countries by Total Reserves in Months of Imports



Source: World Bank WDI.



this amount, US\$ 4.7 trillion are possessed by developed countries while the remaining US\$ 6.9 trillion are owned by developing countries (Figure 3.16). Total reserves of OIC countries increased from US\$ 1.5 trillion in 2010 to US\$ 1.9 trillion in 2013. However, it started to decline in 2014 and reached US\$ 1.5 trillion in 2016. Accordingly, the share of OIC countries in total reserves of the developing countries declined from 23.5% in 2013 to 22.4% in 2016. As of 2016, developing countries possessed 60% of the world total reserves. In the same year, the share of the OIC group was merely at 13.4% in the world. Although the bulk of this can be explained by the increasing trade flows from, and the resulting trade surpluses of, some emerging economies such as China, other newly industrialized countries in Asia, as well as oil exporting countries in the Middle East; the financial reform efforts in some developing countries (mainly, those with chronic current account deficits) to improve their reserves position also played a role. Capital account liberalization in some developing countries has apparently brought about the need for accumulating reserves as an insurance against financial volatilities including sudden stops/reversals of capital influx.

Figure 3.17 displays the top 10 OIC countries by volume of reserves in months of imports during the period 2015-2016. Saudi Arabia, with reserves equivalent to 32.3 months of imports, topped the list, whereas Algeria followed closely with reserves equivalent to 25.9 months of imports. Together with Lebanon and Iraq, only in four OIC member countries, the reserves were equivalent to more than 10 months of their imports.

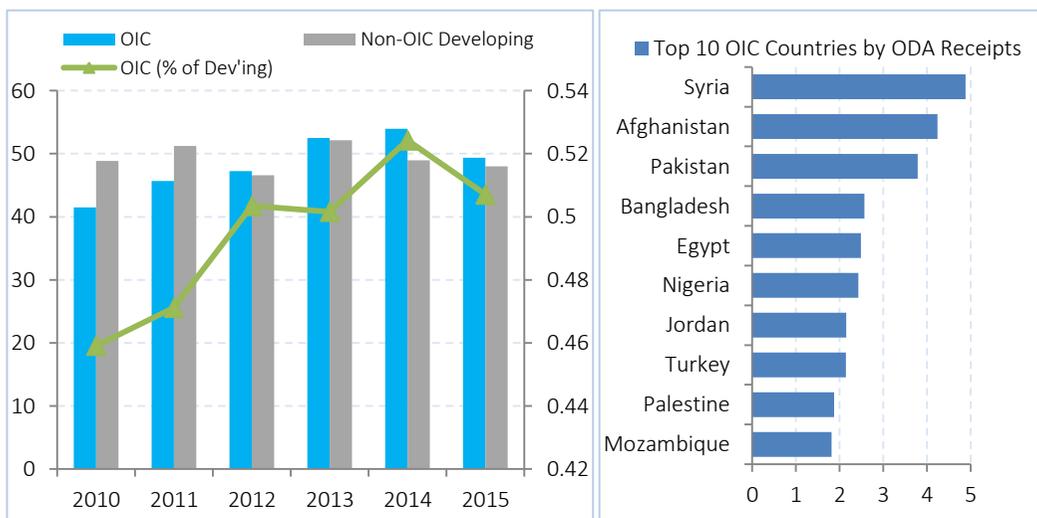
-
- **ODA and Remittances:** Ten OIC countries received 57.5% of total ODA flows to OIC countries in 2015.
-

Official development assistance (ODA) continues to be an important source of financing for many developing countries, including OIC countries. In 2015, net ODA flows from all donors to developing countries reached US\$ 97.4 billion compared to US\$ 90.3 billion in 2010 (Figure 3.18, left). Since 2010, ODA flows to OIC countries exhibited an upward trend. As of 2015, OIC countries, with US\$ 49.4 billion, accounted for 50.7% of the total ODA flows to developing countries, the highest share observed during the period under consideration.

ODA inflows to OIC countries show similar characteristics, when their concentration level is concerned. In 2015, the top 5 member countries received 36.4% of total ODA flows to OIC countries whereas the top 10 received 57.5% of them (Figure 3.18, right). Syria, with total inflows of US\$ 4.9 billion and 10% of OIC total, ranked first. It was followed by Afghanistan (US\$ 4.2 billion, 8.6%), Pakistan (US\$ 3.8 billion, 7.7%), Bangladesh (US\$ 2.6 billion, 5.2%) and Egypt (US\$ 2.5 billion, 5.0 %).

Figure 3.19, on the other hand, shows that the inflows of personal remittances to OIC member countries increased from US\$ 92.7 billion in 2009 to US\$ 140.6 billion in 2014, but declined to US\$ 134.9 billion in 2015. As the financial and economic crisis of 2008-2009 affected the economies of the developed countries at first place, significant number of immigrant workers from developing countries experienced some fall in their incomes as a major source of remittances to their home countries. However, this did not result in a proportional decrease in

Figure 3.18: Official Development Assistance, US\$ Billion

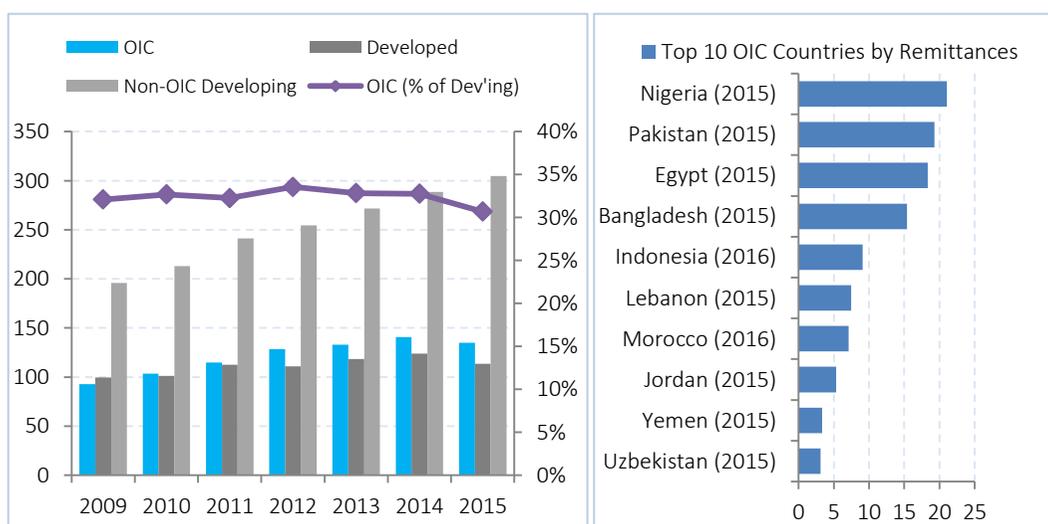


Source: World Bank WDI.

remittance flows to OIC as well as non-OIC developing countries. Remittance flows to non-OIC developing countries continued to improve during the examined period and increased from US\$ 196 billion in 2009 to US\$ 305 billion in 2015.

At the individual country level, it is observed that even a more significant portion of inward remittance flows to OIC countries concentrate on a few members during 2015-2016. In the list of top remittance receivers in the OIC region, Nigeria took the first place with US\$ 21.1 billion of remittances inflows (Figure 3.19, right). It was followed by Pakistan (US\$ 19.3 billion), Egypt (US\$ 18.3 billion), Bangladesh (US\$ 15.4 billion), and Indonesia (US\$ 9.8 billion).

Figure 3.19: Personal Remittances, US\$ Billion

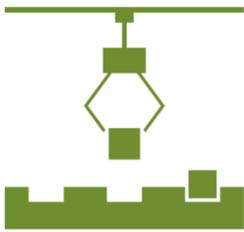


Source: World Bank WDI.



PART III: INDUSTRIAL DEVELOPMENT FOR STRUCTURAL TRANSFORMATION IN OIC COUNTRIES





CHAPTER FOUR

Refocusing on Industrial Development for Structural Transformation



Economic performances of countries are strongly associated with their ability to raise productivity levels across the economic sectors. However, different sectors entail different characteristics in terms of contributing to overall productivity growths. It is widely believed that there is a need for *structural transformation* towards higher productivity sectors to achieve sustained growth and better economic performance. Thus, in order to achieve structural transformation, productive sources of an economy should move towards sectors that have higher productivity potential. Historically, economic activities in manufacturing sector have been linked to higher productivity growth compared to those in agriculture sector.

There is a considerable body of theoretical and empirical literature that try to explain the cross country income differences with the phenomena of structural transformation, industrial development and productivity growth. Overall, it is accepted that structural transformation is essential to close productivity gaps and catch-up with advanced countries. However, there are some controversial views on how it should be achieved. Some argue that governments should play an active role in transforming the economies and allocating the resources towards the sectors that have high productivity potential, while others argue that government should not interfere with the market as it will only distort the effectively allocation of the resources to productive investment opportunities.

In this connection, this section will review the current debates and existing evidences on the structural transformation and industrial policies with a view to shedding light to the discussions in the following sections of the report. It will start with some general overview of the literature on the importance of structural transformation and the role of industrial policies. It will review the arguments in favour of and against industrial policies and set the approach of this report. This section will also review some experiences in achieving or failing industrial development goals at country and regional level.

4.1 Structural Transformation and the Role of Industrial Policy

Started with the first industrial revolution in Britain with the application of steam power to production, economic development of advanced countries have been linked to the productivity growth in manufacturing activities. Since then, structural transformation, or movement of labour and other productive resources from less productive economic activities to high productive ones, is believed to be the major source of raising economic wellbeing. It is recognized that this process of structural transformation with declining share of agriculture and rising share of manufacturing in total output and employment is essential in reducing poverty and increasing welfare (ODI, 2017). Building on early contributions of Clark (1957), Chenery (1960) and Kuznets (1966), a huge literature emerged, which argued that developing countries would follow the same development process observed in advanced economies brought by the reallocation of workers from traditional agriculture to modern industry sectors.

On the other hand, it is observed that after reaching a certain level of per capita income, the share of industry in total output stopped growing in many developed countries. Higher

concentration of value added economic activities in services sector and deindustrialization process in advanced economies over the last few decades as well as failed attempts to industrialise in many developing countries accordingly reduced the attention on the importance of industrialization (see Box 4.1 for definitions of industry and industrialization). However, a renewed interest is observed in the role of industrialization in promoting economic development during the recent years. Reflecting the growing attention to industrialization and unsustainable industrialization practices in some countries led the recently adopted Sustainable Development Goals (SDGs) to call for promoting inclusive and sustainable industrialization (Goal 9).

Box 4.1: Definitions of Industry and Industrialisation

Industry refers to activity where inputs are transformed into a different form of product, so that value is created at different stages of the production process. This activity can be thought of as manufacturing and will include the processing of natural resource-based products from agriculture and mining. Hence, industry in this narrow sense refers to *manufacturing industry*. However, a common statistical definition of industry includes not just manufacturing, but also mining, construction and the utilities electricity, water and gas. *Industrialisation* is, therefore, the process under which manufacturing comes to play a significant role in total activity of an economy. Furthermore, progress in industrialisation is reversible as discussions of *de-industrialisation*, defined as either an absolute decline in manufacturing or a relative fall in its share in either output or employment, indicate.

Source: Weiss (2011).

Although industrialization is on the agenda of both developed and developing countries, UNCTAD (2016a) identifies several factors for increasing interest in industrialization particularly for developing countries. These are (i) inadequate level of industrial diversification in developing countries, which limits their competitiveness in the global markets; (ii) high vulnerability to external trade and financial shocks due to high concentration of economic activities in low productive sectors; (iii) limitation on export-led growth due to slower growth of global demand; (iv) strategies to invest high windfall gains attained by some countries in more productive sectors; and (v) premature deindustrialization in some countries.

4.1.1 Historical Patterns

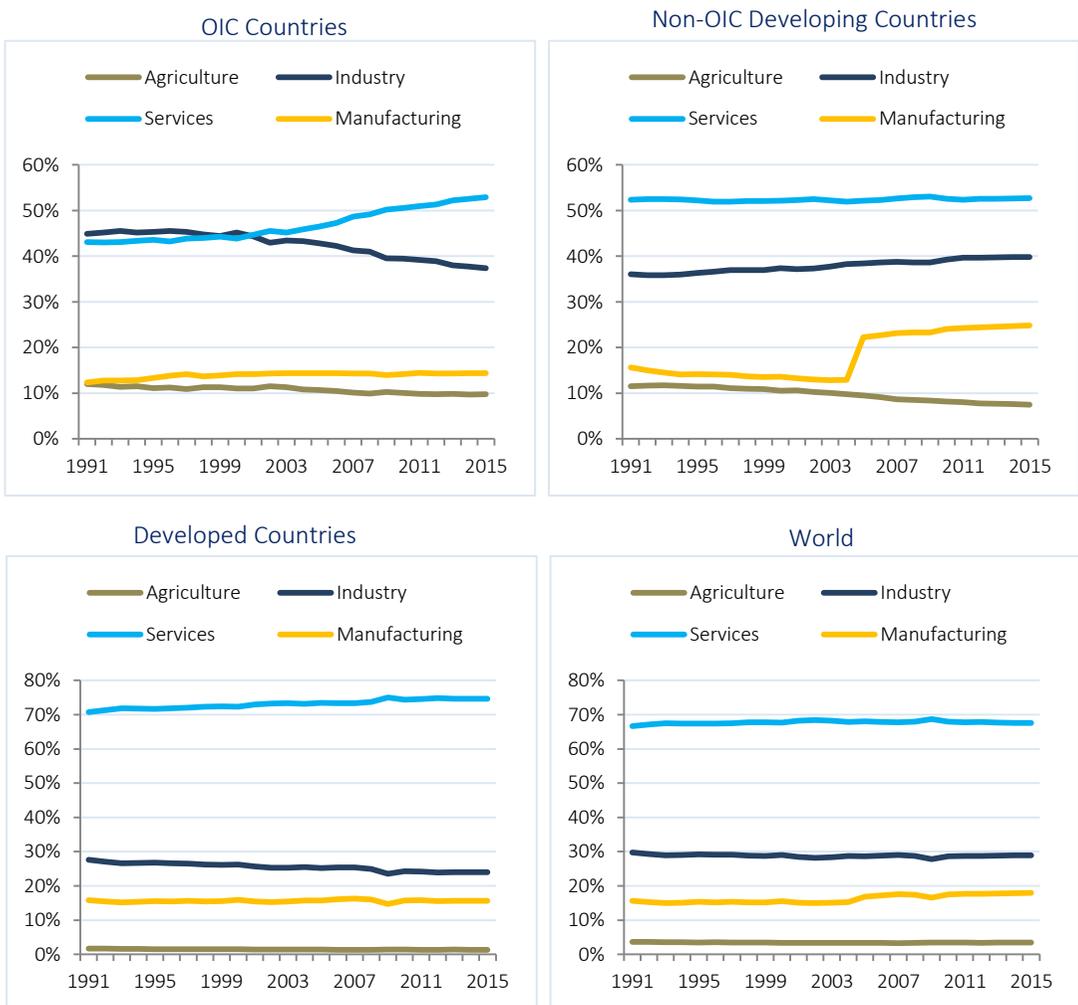
The process of modern economic growth has been historically accompanied by a structural transformation; or the reallocation of economic activity across three broad sectors (agriculture, industry, and services). Structural transformation is commonly measured by the changes in employment, value added and final consumption expenditure shares of three main economic activities. By constructing a long-term dataset for current advanced countries, Herrendorf et al. (2014) show that over the last two centuries, economic growth has been associated with falling employment and value added shares of agriculture. Manufacturing sector witnessed an increase at lower levels of per capita income, reached a peak at medium levels of income, and then started to fall again. To a large extent, the fall in agriculture is offset by the rise in services, reflecting a post-industrial phase of development.



This does not imply that current developing countries should present the same regularities that advanced countries displayed a century ago. However, with some exceptions, developing countries have been experiencing a fall in manufacturing shares in employment and value added, as shown by Rodrik (2015), at levels of per capita income that are a fraction of those at which the advanced economies started to deindustrialize. In other words, developing countries are turning into services economies without experiencing a proper industrialization and diversification process, referred as ‘premature deindustrialization’.

Regional and global trends in the aggregate shares of economic sectors in total value added and employment since 1991 are depicted in Figure 4.1 and 4.2, respectively. Even in such a short sample period for structural transformation analysis, we observe that share of agriculture in

Figure 4.1: Share of Economic Sectors in Total Value Added (1991-2015)

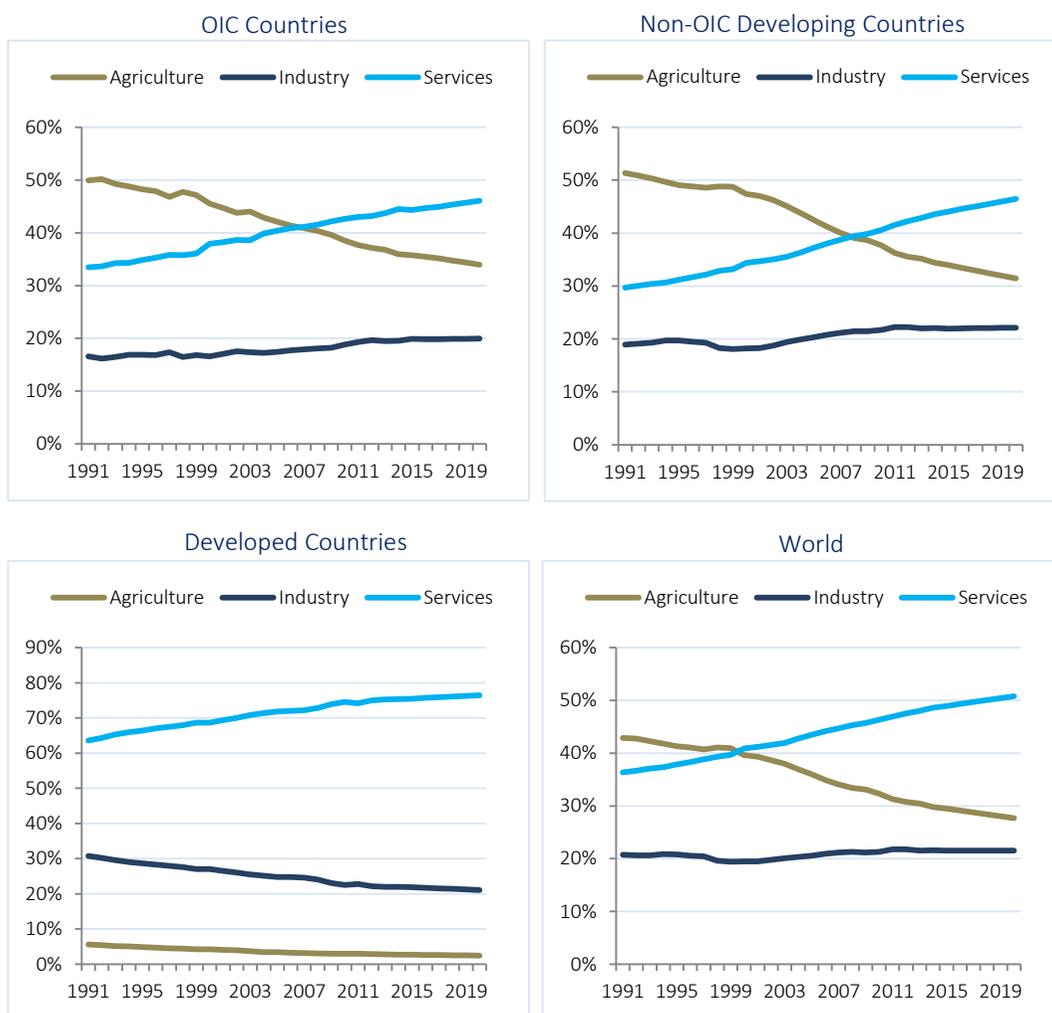


Source: SESRIC staff calculation based on UNSD National Accounts Main Aggregates database. Note: Data on manufacturing value added for China became available only after 2004, which explains the sharp increase in the total value of manufacturing value added in non-OIC developing countries.

total value added constantly falls in developing countries, including OIC countries. It accounts already the lowest levels in developed countries with around 1.3% contribution to total value added. Globally, agriculture accounts 3.5% of global value added. In fact global distribution of value added across economic sectors do not change significantly since 1991, however there are divergent patterns across regions. The share of industry in OIC countries fell from 44.9% to 37.4% during 1991-2015, while it increased from 36.1% to 39.8% in non-OIC developing countries. The fall in agriculture and industry sector is offset by economic activities in services sector in OIC countries, which increased from 43.1% to 52.9% during the same period.

With respect to the distribution of employment across broad economic activities, there is a steady fall in the share of employment in agriculture, even in developed countries. Globally, the share of agriculture in total employment fell from 42.9 in 1991 to 29.5% in 2015 and it's further

Figure 4.2: Employment by Sector (1991-2020)



Source: SESRIC staff calculation based on ILO KILM (2000-2020) and WESO (1991-1999) databases. Data after 2015 reflects the projections of ILO.



expected to fall to 27.7% in 2020. The fall in agricultural employment is largely compensated with an increase in employment in services sector, while there is also slow increase the share of industry. More detailed discussions on these are provided in chapter 5.

In addition to change in value added and employment, industrialization was also expected to change the global trade patterns, where developing countries export mainly primary goods and developed countries export mainly manufacturing goods. As highlighted in the famous Prebisch-Singer hypothesis, uneven trade structure of developing and developed countries leads to a decline in developing countries' terms of trade and widen the income gap between rich and poor countries (Prebisch, 1964). Therefore, with diversification into manufacturing, developing countries are expected to reduce their dependence on low productivity export goods and improve their terms of trade with more competitive export products. Some countries, particularly in Asia, achieved to catch up the more advanced countries by investing in and upgrading their manufacturing sector (see section 4.2 for some country experiences).

4.1.2 Importance of Structural Transformation

Structural transformation can generate both static and dynamic gains. Static gains indicate the rise in overall labour productivity due to employment of workers in more productive sectors. Dynamic gains involve skill upgrading and positive externalities due to access to better technologies and higher capabilities (UNCTAD, 2016b). Hence, a productive structural transformation process encompasses productivity growth within sectors and shifts of labour to higher productivity sectors.

Considering significant productivity gaps across sectors as well as the heterogeneity and duality of productivity within sectors in developing countries, McMillan and Rodrik (2011) examine the relationship between structural transformation and productivity growth. They suggest that overall productivity growth can be achieved by productivity increases *within* sectors through, among others, capital accumulation, technological change and industry rationalization and by movements of resources from lower- to higher-productivity activities *across* sectors.

An important policy goal while attaining economic growth is to create jobs. Capacity to absorb workers differs across sectors. While some high productivity sectors employ a small share of the labour force, some other low productivity sectors employ a high share of the labour force. In general, non-tradable services and agriculture sectors are the main sources of jobs, but they are characterized with low productivity, low wages and limited opportunities for learning and skills upgrading. On the other hand, tradable services (such as information and communication technology, ICT), and some sub-sectors of industries are open to significant productivity improvements and offer great opportunities for learning and skills development, but they employ only a tiny fraction of the labour force (see chapter 5 for discussion on the employment by different sectors in OIC countries).

Structural transformation is a continuous process and occurs along with economic diversification. It involves extensive changes with new sectors emerging and overall infrastructure improving. Technological developments facilitate the upgrading and diversifying the production base with more sophisticated production processes and products. Advanced

economies typically produce a more diversified and sophisticated set of goods compared to less developed countries. Empirical literature shows that countries with more sophisticated production and export structures tend to grow faster (see, e.g., Hausman et al., 2007). It is also argued that developing countries could lose their chances of industrialization if they only specialize in goods and resource intensive industries where they have comparative advantage.

4.1.3 Why Manufacturing

A broad and robust domestic manufacturing base has been the key to successful economic development, since it helps generate productive linkages with other sectors of the economy, drives technological progress, and has the strongest potential for productivity improvements (UNCTAD, 2016a). It acts as the 'learning centre' of the economy and plays the leading role in diffusing technological progress (UNECA, 2016). The manufacturing sector also tends to be strongest driver for employment of wage workers, especially in developing countries (ILO, 2014). As highlighted in SESRIC (2017), a majority of working force in OIC countries are stuck in vulnerable jobs and most manufacturing jobs provide opportunities for more social security and more stable income flows.

There are some additional explanations provided in the literature for the beneficial role of manufacturing for developing economies. First, manufacturing allows for increasing returns to scale. In other words, it allows firms to reduce their costs by increasing their production (static) and to accumulate knowledge to produce goods more efficiently (dynamic). Since manufacturing is more capital intensive than agriculture and services, it also provides opportunities for capital accumulation. As shown by Szirmai (2012) in the case of developing countries, capital intensity in manufacturing is much higher than in agriculture, indicating the importance of structural transformation towards manufacturing.

Moreover, manufacturing is where the technological progress takes place. Learning and innovation may also take place in services and in some branches of agriculture, as they are becoming increasingly more capital intensive and knowledge based (see Box 4.2 for more discussion on manufacturing and service sectors). However, it is again the manufacturing sector that produces a range of productive inputs for agriculture (e.g. chemicals, fertilisers, pesticides, and agricultural machinery) and services (e.g. transport equipment, computer technology, and mechanised warehouses) that help raise productivity in those sectors (UNECA, 2016). As shown by Lavopa and Szirmai (2012), manufacturing is the most research and development (R&D) intensive industry in his sample of 36 developed countries. Finally, manufacturing has strong backward and forward linkages¹ to the rest of the economy, leading to knowledge and technology spillover to other sectors.

With regard to the implications on foreign trade, the terms of trade (TOT) for primary commodities will deteriorate over time, making the prospect of economic development based on primary commodities vague in the long run, as the Prebisch-Singer hypothesis postulates.

¹ Backward linkages represent the cases where an industry requires inputs from other domestic sectors, while forward linkages occur when investment in an industry induces investment in downstream industries.



Box 4.2: Manufacturing vs Services

The services sector has come to dominate the economic structure of many economies in the latter half of the 20th century and even more so in the 21st century, both in terms of output and employment. There is a growing belief that we have now entered a ‘post-industrial age’ and therefore services should be the engine of economic development. This is especially apparent in the advanced economies, but also in many developing countries, the growth of services (especially tourism and telecommunications), rather than manufacturing, has become a core strategy to diversify away from dependence of primary commodities.

There are good reasons why services should play a more important role in the formulation of a country’s development strategy today. Telecommunications, finance and business services are now organised in a way that resembles the manufacturing sector, as scale economies and technological advance are more easily incorporated into these services to increase efficiency. In some digitalised services, marginal costs of providing an additional unit of service have come close to zero, making scale economies even more prevalent than in the manufacturing sector. Moreover, the revolutions in ICT and transport technology have made more services tradable, making it easier to expand output.

However, there are also good reasons to be sceptical of the discourse of ‘post-industrial age’. *First*, the decline in the importance of manufacturing is partly an illusion. Much of the apparent fall in the manufacturing sector’s share of GDP in advanced economies is due to the decline in the prices of manufactured goods, relative to the prices of services. This is thanks to faster productivity growth in their production. When this relative price effect is taken into account and the shares of different sectors are recalculated in constant prices, the share of manufacturing has not fallen very much in most rich countries.

Second, the growth of the services sector is also a bit of an illusion. A lot of services that are now supplied by independent companies at home or abroad used to be provided in-house in manufacturing firms. *Third*, many services that have grown rapidly in the last few decades are heavily dependent on manufacturing firms as customers. These include banking, communications, insurance, and even more importantly producer services, such as transport, design, retail, engineering, and management consulting. These services cannot prosper without a strong manufacturing sector.

Fourth, low tradability characterises most services because they require consumers and producers to be in the same location, like cleaning, grooming, public utilities, or education. This means that countries that rely on their services sector for economic growth will eventually struggle with trade balance constraints.

Source: UNECA (2016).

However, as a result of the greater use of capital and technology in a growing manufacturing industry, primary production will likely become more efficient, overall productivity in the economy will rise and contribute to the development of the other sectors and subsectors of an economy, including services and agriculture.

4.1.4 Rationale for Industry Policy

Given the importance of structural transformation for economic growth, industrial policy can be defined broadly as measures to alter the allocation of resources within an economy in favour of manufacturing industry and within the sector to shift resources in line with a strategic view of where the greatest growth potential lies (Weiss, 2011). As labour shifts from lower to higher

productivity sectors, value added increases and rapid technological change further boosts economic growth. This explains why structural transformation is associated with faster economic growth. For many years, thinking about industrial policy was shaped by the unsuccessful import substitution experiences in many parts of the developing world. Those who are against government intervention for industrial development tended to deny the successful experiences of East Asian countries as an outcome of industry policies in these countries.

Today, there is a renewed interest in industrial policy to achieve greater competitiveness in the world economy. This is also true for some low income countries that emerged from periods of colonial rule and have experienced distortions in their economies, which arguably held back economic progress, and failed to realize structural transformation. It is therefore important to review the theoretical arguments in favour of industrial policy and against it.

Arguments in favour of Industrial Policy

There are multiple theoretical justifications for industrial policy. The most widely accepted argument is *market failures*, where a competitive market system does not yield the socially efficient outcome, but it can be corrected through government interventions. The literature on industrial policy and market failures is extensive and Rodrik (2008a) describes the market failures as ‘bread-and-butter’ of development economists in providing a base for industrial policy. In an influential paper, Grossman (1990) identifies three cases under which markets fail to work efficiently, namely the presence of economies of scale, externalities and market imperfections. UNCTAD (2016b) provides a detailed discussion of a rationale for government intervention under these three categories.

Under economies of scale, there are opportunities for both static and dynamic (learning by doing) gains. Under static gains, firms need to produce a minimum amount of goods in order to become profitable. Large fixed entry costs limit the number of profitable firms in a particular industry. In such cases, governments can take a lead and subsidize firms to reduce initial fixed costs. Under dynamic gains, efficiency is attained by the accumulation of production knowledge, but production remains unprofitable until firms accumulate enough knowledge and expertise. It is argued that newly established domestic industries need temporary protection until production costs are reduced over time through learning by doing so that to attain a competitive edge against foreign rivals. In such cases, government can step in and subsidize firms during their early stages of development and knowledge accumulation, which is also commonly known as the infant industry argument. This argument has been traditionally used in justifying import substitution strategies.

Externalities are defined as the benefits or costs experienced by a firm as a result of actions taken by another firm. There are activities that are not profitable for a single firm, but provide positive externalities for other economic actors. Market failure occurs when too few resources are allocated to economic activities that generate positive externalities. A firm may lack incentive to invest in a certain type of technology or infrastructure to improve its productivity, if other firms will easily benefit from this investment without paying for the costs. In such cases, government can intervene and facilitate investments that have greater benefits. Imperfections



in capital markets may also be a source of market failure where profitable investment opportunities do not find enough credit from financial institutions due to informational asymmetries.

There are also arguments that go beyond market failures, which state that even if market failure is fixed, market cannot always drive structural transformation towards the most promising industries. This may require government intervention to lead the economic transformation towards such industries (see, e.g., Weiss, 2013).

One of the most powerful ideas in all of economics is the notion of comparative advantage. Allocating resources according to comparative advantage can only ensure static efficiency and in no way guarantees dynamic efficiency (Pack and Saggi, 2006). Rodrik (2004) also states that the forces of comparative advantage cannot serve as the driving force of economic development. Therefore, it cannot guide the pattern of international specialization (Succar, 1987). In this fashion, Hausmann and Rodrik (2003) describe industrial policymaking as a “self-discovery” process in which entrepreneurs try to discover a diversification path for their economy based on dynamic comparative advantages. Therefore, relying on comparative advantages may turn out to be painful for long-term economic development for a developing economy.

Arguments against Government Intervention

According to those who oppose industrial policy, there is no guarantee that government will succeed where markets fail. There are two main practical objections to industrial policy (Rodrik, 2008a). First, it is impossible for governments to identify with any degree of precision and certainty the relevant firms, sectors, or markets that are subject to market imperfections. This implies that, a government will support economic activities with no positive spillover for the rest of the economy and waste the economy’s resources. Second argument against industrial policy is that it creates a ‘window of opportunity’ for corruption and rent-seeking. Benefits demanded by the private sector will distort competition and transfer rents to politically connected entities, and they will spend their time asking for special treatments instead of searching for ways to improve their productivity.

Similarly, Haque (2007) raises three issues with regard to the market failure approach. First, market failures are not always easy to pinpoint except in the most evident situations, such as education and infrastructure, and when they can be located, their seriousness may not be obvious. Thus, there is little guidance as to how and to what extent government may intervene. Second, this approach makes public policy to focus basically on supplying lacking inputs, such as physical capital, skills and technology, but developing countries also tend to suffer from a lack of demand for such inputs. This may create unemployment of skilled labour or excess industrial supply. Third, there is an issue of ‘private sector failure’, when a firm’s goal of making profits conflicts with national development. A firm’s decision to pull out of one country and move to another due to more favourable conditions can have serious economic and social consequences for the country as a whole. However, restrictions on the activities of private sector may reduce their enthusiasm for higher productivity.

4.2 Paths to Economic Development through Industrialization

Thinking about industrial policy has been long associated with the unsuccessful import substitution experiences in many developing countries where trade policies were used to discourage importers and support domestic production. However, experiences of some other countries, particularly in East Asia, showed that industrial policy could be associated with successful structural transformation and economic diversification. Due to renewed interest in aspects of industrial policy for greater competitiveness and productivity, it is important to review the cases where industrial policy instruments were successfully implemented. This is also critical for some low income OIC countries that emerged from periods of colonial rule have experienced distortions in their economies and failed to realize structural transformation towards manufacturing industries.

In this connection, spectacular performances and experiences of Japan, Korea (South) and Taiwan through unorthodox policies will be briefly reviewed and some important implications will be drawn from these experiences.² It is remarkable to remember that per capita income in Japan in the early 1960s was around the same levels with South Africa and Chile and Korea had an income level that is less than half of the income level in Ghana and Honduras (Chang, 20016). The way they catch up high income countries should definitely have some interesting lessons.

4.2.1 Industrial Policy in Japan

At the end of World War II, the Japanese economy was completely destroyed. However, it created a “miracle” by sustaining high growth rates around 7% during 1950-1990, and turned into a global economic power. Once Japanese products were regarded as cheap and of low quality, then they became high-technology intensive and exported to the world. In explaining the trajectory of economic success, the Japanese economy in the post-war period is divided into five stages. During the reconstruction period (1945-50), Japan tried to recover from the devastation of the war. Given the extreme shortage of goods and foreign reserves, the government preferentially allocated raw materials and financial resources to steel and coal industries. This contributed to resolve the shortage in production capacity and provided a smooth transition for heavy and chemical industrialization in the next stage.

During 1951-60 (the catch-up and set-up period), ‘targeting policy’ became the centre of policy. Some industries were targeted for rationalization³ to *catch-up* to international level, such as steel, coal, shipbuilding, electric power, synthetic fibres, and chemical fertilizer, and in the late 1950s, petrochemicals, machine tool and parts, and electronics. At the same time, some industries were targeted to *set-up* to create new industries, namely automobile, heavy electric machinery, computer, and petrochemical industries. These industries were considered to have

² Japan country case is largely adopted from Nishijima (2012), and Korea and Singapore country cases are largely adopted from Weiss (2011).

³ Industry rationalisation process typically reduces the number of firms and even the aggregate output, whereas remaining firms are allowed to expand production.



high growth potential and increasing returns to scale, therefore require investment coordination by government. To achieve these goals, the government adopted various policy measures, including special tax provisions, tariffs and import quotas, accelerated depreciation, tariff exemptions for imported machines, among others.

Third stage (1961-72) witnessed a high growth period. In 1960s, average growth rate reached over 12%, which stimulated private investment. In order to integrate with the world economy through GATT and OECD memberships, Japan needed to liberalize its trade and capital market. Accordingly, the objective of industrial policy shifted from nurturing industry to setting it on its feet during the liberalization process. Restrictions on certain industries are gradually lifted, while capital market liberalization was achieved during 1967-73. In fact, the commitment to and realization of liberalization gave strong incentives for entrepreneurs to prepare for international competition in the coming stages.

During 1973-82, Japan was confronted with various economic problems both inside and outside the country, including the sharp rise in the oil price and appreciation of domestic currency, which made heavy and energy-intensive industries structurally less competitive. Moreover, increasing competition from newly industrializing Asian economies reduced the profit margins in some industries. In such circumstances, the role of industrial policy changed to pursue objectives other than growth, from industrial promotion to structural adjustment. New policies are developed to allow special credit lines and depression cartels to promote rationalization or to accelerate adjustment process (shift in business line or exit from the business) of these industries.

Table 4.1: Stages of industrial policy in Japan (1945-1990)

<i>Period</i>	<i>Priorities</i>	<i>Main instruments</i>
1945–50	Steel and coal industries	Preferentially allocated raw materials and financial resources to targeted industries
1951-60	<i>Existing industries:</i> Steel, coal, shipbuilding, electric power, synthetic fibres, petrochemicals, chemical fertilizer, machine tool and parts, and electronics. <i>New industries:</i> Automobile, heavy electric machinery, computer and petrochemical industries	Special tax provisions, tariffs and import quotas, accelerated depreciation, tariff exemptions for imported machines
1961-72	Shift from nurturing industries to setting them on their feet and improving international competitiveness of domestic industries	Trade and capital market liberalization, gradual removal of preferential treatment for certain industries
1973-82	Less industrial promotion, more structural adjustment	Special credit lines, tax reliefs and exemptions from the Antitrust Law
1983-90	Transition of industrial policy from an industry-oriented policy to a market-oriented one	Deregulation and international harmonization of economic institutions

Source: Compiled from Nishijima (2012) and Okazaki (2017).

After 1983, the trade imbalance escalated and trade conflicts become more frequent and more intense. Thus Japanese industrial policy shifted to international issues, in particular, to deregulation for opening the market. In this sense, the main objective of Japanese industrial policy became to foster the workings of the market mechanism, not to intervene the market. After 1991, the long stagnation period started where the average growth rate declined to less than 1%. Japan was now requiring major structural reforms and constructing a new institutional basis for economic growth. The stages of industrial policy in Japan are summarized in Table 4.1.

4.2.2 Industrial Policy in Korea

Early stages of industrialisation efforts of Korea during 1960s focused on building up manufactured exports, principally in labour-intensive, low-technology goods. There was import tariff protection of the domestic market at relatively high rates for some sectors and government direction of the banking sector for allocation of credits to priority areas. Export promotion measures included subsidised credit for working capital, investment and trade finance, preferential access to licenses for foreign currency, direct cash payments and import tariff-free access to imported inputs used in the production of exports. This latter facility was also extended to local suppliers of inputs to exporters. During the second half of 1960s, all manufacturing firms were set specific export targets and the receipt of long-term credits was made conditional on meeting these targets. At this stage, it was exports in general rather than particular sectors or firms that were supported, so interventions were largely functional rather than selective (see section 6 for discussion on functional and selective policies).

During these early periods, weak state capacity did not create a major challenge for implementing industrial policy. It is reported that until the 1960s, bureaucrats from Korea were sent to Pakistan to be trained in economic policymaking. State capacity was built over time through long processes of reform and experimentation, a difficult but not impossible task (Chang, 2006; UNCTAD, 2016b).

From the late 1960s onwards, policy discussion shifted beyond a general export drive to the need to broaden the industrial base by moving into the production of industrial intermediate goods (like steel, plastics and chemicals) and heavy industry (like ships, and engineering equipment). Six priority sectors were formally selected for promotion: steel, petrochemicals, nonferrous metals, shipbuilding, electronics and machinery. International competitiveness was to be achieved within a ten-year period in these sectors, despite the fact that in the 1970s Korea's income per capita was still very low in comparison with developed economies. In order to achieve economies of scale, there was a deliberate strategy to create large firms, to direct them into particular sectors and to support them financially, which led to growth of well-known firms like Samsung, Hyundai and Daewoo. The channelling of funds to priority sectors and to favoured firms within these was used extensively, which reached over half of all credit in the economy. Short-term loans at subsidised interest rates were available to any exporter, but long-term funds at attractive rates were only available to priority sectors and firms.

During 1980s, there was a staged process of reducing trade barriers, involving the phasing out of import licensing, the reduction of import tariffs and export incentives. Government support



for technological improvements became a key aspect of policy with high levels of R&D expenditure. Restrictions on foreign investment were eased as a way of accessing new technology. In addition, there was a new focus on small and medium enterprises (SMEs) and on firms in need restructuring. In this connection, firms operating in certain sectors (such as shipping, foreign construction, textiles and fertilisers) could apply for subsidised credit to finance the upgrading of equipment or the reorganisation of the firm.

The application of a highly interventionist industrial policy began to slow down by the early 1990s. After achieving a highly competitive industrial economy, the country focused on reforming the financial sector and reducing the role of policy lending to ensure that credit flowed to private firms with good investment ideas. The stages of industrial policy in Korea are summarized in Table 4.2.

Table 4.2: Stages of industrial policy in Korea

<i>Period</i>	<i>Priorities</i>	<i>Main instruments</i>
1960–73	Exports in general – key sectors labour-intensive manufactures	Import tariff protection, export subsidies, tariff-refunds, subsidised credit and export targeting
1973-80	Heavy and chemical industries – priority sectors steel, petrochemicals, nonferrous metals, shipbuilding, electronics and machinery; priority firms selected large enterprises	As above plus use of policy loans to fund priority sectors and firms, tax credits as investment incentives
1980-90	Manufactured exports in high technology activities, small and medium enterprises, firms in need of restructuring	Phased import liberalisation, investment incentives for R&D, some directed lending, ending of restrictions on foreign investment
1990 onwards	Private sector-led development, restructuring of large firms, after 1997 crisis, development of internationally competitive economy	Financial sector reform, open capital account, and support for R&D

Source: Weiss (2011).

4.2.3 Industrial Policy in Taiwan

Similar to Korea, experience in Taiwan was largely shaped by a strong focus on exports combined with early protection of the domestic market and subsequent measures by government to upgrade the industrial structure. However, SMEs and public-sector enterprises played a relatively more significant role as compared with large private sector firms. Government was less interventionist in directing the credit of the banking system. At early stages, Taiwan adopted import substitution policies for low-technology labour-intensive goods, like textiles, clothing, wood and leather products. At the end of 1950s, it decided to shift the structure of exports away from primary goods towards labour-intensive manufactures. Special measures were taken to encourage export-oriented foreign investment. In some industries, local content requirements were imposed on foreign firms to force them to develop linkages with domestic suppliers.

During 1960s, export processing zones started to be set up to promote export and they accounted a good share of total exports. Although, manufacturing exports were still in labour intensive, low technology goods, they started to expand into consumer electronics, watches, clocks and toys. Export promotion was partially selective with some sectors, and firms within these, receiving priority in the allocation of credits. In the 1970s, the need to diversify the domestic production base and upgrade the industrial structure became a priority, which involved a shift in strategy to the domestic production of industrial intermediates and capital goods, such as iron and steel, machine tools, petrochemicals and electrical machinery. Initially, public enterprises had a major role and there was heavy public investment in supportive physical infrastructure.

With gradual trade liberalization and increasing exposure to regional and international competition during 1980s, the government targeted high-technology goods as new potential exports (including information technology, machinery, precision instruments and biotechnology) based on a list of criteria, such as high value added and market potential. This shift in priorities was supported by subsidised loans available for broad categories of activity. R&D activities were supported with tax credits. Public research institutes had an active role in both the diffusion and adaptation of imported technology. There was also an active policy on science parks and encouraging their interaction with universities and technical centres.

Table 4.3: Stages of industrial policy in Taiwan

<i>Period</i>	<i>Priorities</i>	<i>Main instruments</i>
1953–57	Import substitution – key sectors textiles, clothing and other labour-intensive goods	Import tariff protection and import quotas
1958-72	Export substitution in labour intensive manufactures, including garments and consumer electronics; Some import substitution in intermediates – basic metals and chemicals	Competitive exchange rate, rebates of import duties, tax credits, subsidised loans, export processing zones, foreign direct investment, some export targeting; import tariff protection and import quotas
1973-80	Industrial consolidation through import substitution of intermediate and capital goods; priority sectors – petrochemicals, steel, shipbuilding, automobiles, machine tools, electrical machinery, consumer electronics; Continued focus on exports	Public investment in state enterprises, tax credits, policy loans, rebates of import tariffs, selected import protection As above
1981-90	High-technology activities, information technology, machinery, precision instruments, bio-technology, electro-optics, environmental technology; Continued focus on exports	Trade liberalisation, policy loans, tax credits, public investment in infrastructure and research, science parks, encouragement to foreign investment As above
1991 onwards	Private sector-led development in high-technology and environmentally sustainable activity	Financial liberalisation, public investment for R&D, science parks, education, encouragement to foreign investment

Source: Weiss (2011).



As in the case of Korea, most selective industry policy instruments started to be removed during the 1990s. Trade and financial liberalization was completed and interest rate controls and some other financial incentives were removed. Public support for high-technology activities through R&D expenditure, the creation of infrastructure for science parks and the expansion of higher education became the new focus of industrial policy. The stages of industrial policy in Taiwan are summarized in Table 4.3.

Overall, success of East Asian countries did not rely on the so-called Washington Consensus policies of liberalized trade and investment, deregulation and privatization (see Box 4.3); on the contrary, but on interventionist trade and investment policies, realized often through large public enterprise sector (Chang, 2006). Perhaps the most successful cases that involved liberal policies were the cases of Singapore and Hong Kong. For example, after a short period of import substitution during early 1960s, Singapore rapidly liberalized its trade and became virtually a free-trade economy by the early 1970s. A key objective was to upgrade the structure of exports towards more technologically intensive sectors and products. In order to achieve this objective, foreign investment was encouraged through a combination of tax incentives, infrastructure facilities and the creation of a skilled and well-educated workforce. Tax credits were designed in a way to encourage a shift of economic and export activities towards skill and knowledge-based activities. While government provided substantial subsidies to private sector for their R&D activities up to 30%, it also invested heavily on higher education and high-standard public research laboratories to support private sector laboratories (Weiss, 2011).

4.3 Failed Interventions in Transforming Economies

In one way or another, every government has been following some form of industrial policy to stimulate industrial growth and transform the economy from low-productivity agriculture to high-productivity manufacturing and services. However, apart from few successful cases, there are plenty of industrial promotion efforts that produced only low productive and uncompetitive industries. While some Asian countries were successful in transforming their economies through various industrial development programmes, most governments in Latin America and Africa have failed in their interventions to upgrade their economies.

In fact, during the post-war period most developing countries adopted import substitution industrialization as the main and fastest path to development and as a tool to reduce their dependence on developed countries or their former colonizers. Given their initial conditions, export promotion was a more difficult target, because international markets were already dominated by big enterprises from developed countries. Import substitution industrialization (ISI) offered an opportunity to develop local industries in a protected environment. However, most countries following import substitution strategy faced high production costs due to lack of economies of scale and lack of innovation due to the absence of competition, which prevented their success.⁴ At the initial stage, size of domestic market was not a critical issue because basic

⁴ Some countries tried to establish a regional industrial strategy in order to increase the size of the market and make use of economies of scale. The East African Community, for example, had agreements, not always adhered

Box 4.3: The Washington Consensus

This term “Washington Consensus” was coined by Williamson (1990) to refer to the key elements of policy advice being addressed by the Washington-based institutions to Latin American countries as of 1989. These policies were: Fiscal discipline, a redirection of public expenditure priorities toward fields offering both high economic returns and the potential to improve income distribution, such as primary health care, primary education, and infrastructure; tax reform (to lower marginal rates and broaden the tax base); interest rate liberalization; a competitive exchange rate; trade liberalization; liberalization of inflows of foreign direct investment; privatization; deregulation (to abolish barriers to entry and exit) and secure property rights.

It is often seen as synonymous with “neoliberalism” and “globalization.” The term has become a lightning rod for dissatisfaction amongst anti-globalization protestors, developing country politicians and officials, trade negotiators, and numerous others. However, Williamson (2004) claims serious misinterpretation of the term by arguing that “it has been interpreted to mean bashing the state, a new imperialism, the creation of a laissez-faire global economy, that the only thing that matters is the growth of GDP, and doubtless much else besides.”

Clearly, the debate continues about the Washington Consensus, its definition, its successes and failures, and whether it even exists.

Source: Centre for International Development at Harvard University.

food and consumer goods had large market potential, but it turned to a major problem in the next stage of ISI as countries tried to develop manufacturing for more specialized goods, which needed greater markets for efficient production.

In an attempt to overcome the problems of import substitution strategy, some countries, such as Singapore, Taiwan and South Korea, changed their policies in the early 1960s towards export promotion as they shifted to production of more specialized goods, but most other countries continued with their import substitution policies until the 1970s and 1980s. Based on these observations, this subsection will briefly review the regional experiences of countries in Latin America and Africa to provide more insight on our discussion.

4.3.1 Industrial Policies in Latin America

Industrialization process in Latin America started much earlier than other developing countries, as they were already decolonized while other regions were being colonized. By its nature, colonialism was not conducive to industrial development, as they were seen only producer of raw materials and consumers of manufactured goods produced in European factories (Chandra, 1992). The import substitution strategy for industrialization was initiated in many Latin American countries as a response to the disruption caused by wars and economic depressions during the first half of the twentieth century, when imports were either not generally available or there was insufficient foreign exchange to pay for them. Then the strategy prioritized the creation of new sectors and the diversification of the production structures, with the objective of changing the existing specialization pattern and increasing the share of technology-intensive

to, concerning the location of specific manufacturing plants such that production was not duplicated across the Community (Lawrence, 2016).



activities in the production structure (Peres, 2013). Rapid growth of domestic demand was also offering an opportunity to expand domestic industries in order to avoid a surge in imports and deterioration in trade balance.⁵

With the implementation of ISI, industrial policies pooled trade protection with investment promotion, where both state and foreign investments were supported. National development banks were the main financing agents. Two of the most notable examples of industrial policies in the region during the 1970s were the Second National Development Plan of Brazil and the National Industrial Development Program 1979–82 of Mexico, which coincided with its boom in oil exports.

However, during the debt crisis and the ‘lost decade’ of the 1980s, the ISI was a major source of criticism. Then industrial policies lost their leading role in economic development and structural transformation strategies. Peres (2013) provides three reasons for this: (i) increasing support for the view that the state should play only a subsidiary role in economic growth, (ii) need to balance public finances by eliminating subsidies, and (iii) increasing negative perception about the investments that suffered from bad planning, poor project management and corruption. These and other implementation problem reduced the support for ISI and then they were excluded from the new economic model that was established by market friendly economic reforms.

With the rise of the Washington Consensus era, competitiveness policies found greater support in industrial policy formulations. Many countries have embarked on economic reforms that envision a radical change from *interventionist* to *market-oriented* economic strategy. Various efforts such as market liberalization, deregulation and privatization have been made to pursue a successful structural adjustment. In the mid-1990s, almost all countries in the region designed programmes to support the competitiveness of their economies. The economic reforms and structural adjustments that are implemented too quickly inevitably bring about social adjustment costs, and the costs will be serious in case that there are social conflicts, poverty and income distribution, as experienced some countries in the region.

Despite the initial failure of industrial development policies, Latin American countries have made significant progress today regarding industrial policy formulation. Most market-distorting policy instruments were eliminated or phased out, and subjects such as technological innovation, clusters and small and SMEs were included, or became more important, in the policy agenda. Moreover, governments tended to approach industrial policy from a much more systemic view than in the past. In all these aspects, the return of industrial policies in the region is not just the revamping of import substitution policies, but a combination of new and old objectives and instruments, such as cluster development and structural change, or technology funds and state procurement, respectively (Peres, 2013).

⁵ Information provided in the rest of this case study heavily relies on Peres (2013).

4.3.2 Industrial Policies in Africa

Economic and industrial development efforts in Africa are characterized by two main policy mechanisms. First one is import substitution industrialization, or ISI, and the second is structural adjustment programmes (SAPs) led mainly by international financial organizations. After their independence in the 1960s, many African countries pursued import substitution as a development strategy. Food processing, textiles and clothing, shoes and other basic consumption goods dominated the strategy. The next stage was to be the production of intermediate goods which would eventually allow a capital goods industry to grow (Lawrence, 2016). In many countries import substitution was embedded in a broader strategy of state-led economic development. Accordingly, governments either went into production themselves through state-owned enterprises (SOEs) or controlled the entry of entrepreneurs and heavily regulated the private sector activities (Ansu, 2013). However, the heavy involvement of the state, particularly through SOEs, was proving to be a major drain on resources (Chandra, 1992). This state-led import substitution strategy appeared to be successful at its initial stage in expanding the manufacturing sector, but it then turned into a disappointment.

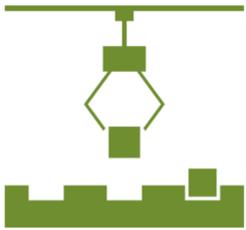
A main paradox in ISI was that manufacturing output was directed to the domestic market, but the material inputs of fixed and working capital were to be imported. High dependence on supplies of foreign inputs required foreign exchange, but domestic industries were not generating enough foreign exchange, if any, to pay for these inputs. While this was one of the main reasons for failure of ISI in Africa, other reasons included poor management of SOEs and their lack of incentives to achieve efficiency and competitiveness as well as inadequate support for private sector development. Moreover, absence of a capacity to transfer and utilize foreign technology and the lack of institutional capacity to negotiate agreements with foreign investors were also among other shortcomings (Lawrence, 2016). The high import intensity of the capital and intermediate inputs and periodic export revenue shocks due to the extreme dependence on primary commodity exports caused severe balance of payments problems (Ansu, 2013). This also brought the import substitution strategy to an end and many African countries turned to International Monetary Fund (IMF) and the World Bank for assistance.

This led to the initiation of the second stage of development efforts, namely structural adjustment programmes (SAPs). Offered by the IMF and the World Bank, SAPs typically included fiscal adjustment to reduce fiscal deficits, exchange rate devaluations, trade (particularly import) liberalization, privatization of SOEs, and restraining government involvement in production or providing special incentives in favour of any sector or firm (Ansu, 2013). As in the case of the ISI, the results of the SAPs were also disappointing. Despite some achievements, the structures of economies have not adjusted in ways that make them more globally competitive in the production and export of higher technology goods and services. The SAPs did not raise productivity, boost manufacturing export performance or enhance value addition, but they did hurt technological capability and skills levels. There is a strongly held view that there has been some deindustrialisation generated by structural adjustment policies that encouraged import liberalisation and privatisation (UNECA, 2013).



By implementing various economic and industrial development strategies, African countries were expecting to develop a manufacturing sector based on food and other primary product processing and then to move into the manufacture of more advanced consumption and capital goods. However, they have largely remained with much the same structure of production since their independence. Overall, the state-led, import-substitution strategies of the 1960s and 1970s produced industry without efficiency. The distortions to the price system and the subsidies from the public budget were simply too much to be sustainable in the long run. The adjustment policies of the 1980s and 1990s, however, produced efficiency without industry. Liberalized international trade benefited the consumers of industrial products, wiped out non-competitive firms, and improved the allocation of investment, but industry failed to grow (Page, 2013). It is unambiguous whether the failure of ISI and SAPs was due to the programmes or their poor implementation.

At the end, Africa's share in world manufacturing value added has remained at around 1% over the last three decades, while the share of the East Asian and Pacific developing countries rose from 5% to 22% during the same period. Moreover, Africa's share in world manufacturing exports has floated between 0.5% and 1% over the same period, while East Asia has seen its share rise from below 3% to almost 19% in 2012 (Lawrence, 2016). What Africa achieved was nothing more than premature deindustrialization brought about through structural adjustment policies. Obviously, Africa needs a new set of policies and programmes to achieve industrial development.



CHAPTER FIVE

Industrial Development Trends and Opportunities in OIC Countries



Historically, economic development has been closely connected with industrial development. Over the years, it has been many attempts to develop the economies through industrialization across the world, but many of the public interventions failed to produce the desired outcomes. Amid renewed interest in industrial development in many parts of the world, it is important to review the current level and structure of industrial development in OIC countries in order to understand the existing framework of industrialization process and offer new perspectives.

In a world of global value chains, it is probably no more possible to become competitive in an entire economic sector. Today, production and trade are heavily affected by international production networks, which require the combination of parts and components from many different locations and often different suppliers. This offers new opportunities for developing countries to integrate into global economy by investing in capacities to meet the global demands in intermediate goods at competitive prices and quality.

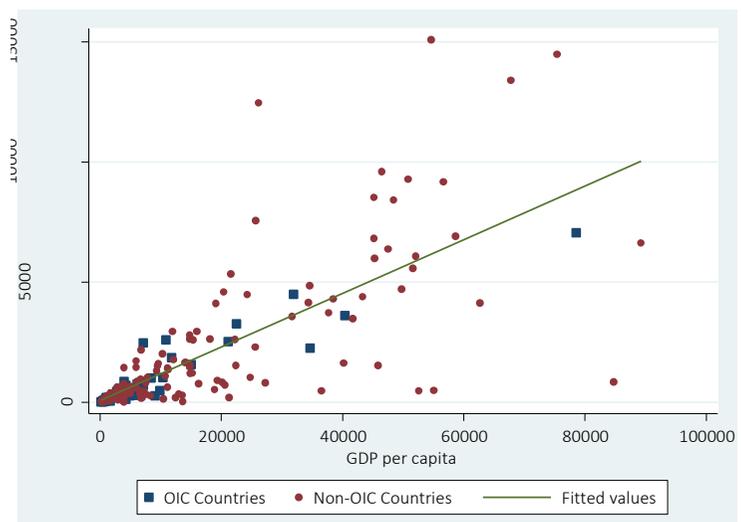
On the other hand, OIC member countries have been characterized with high heterogeneity in terms of level of development, resources and growth potentials. While there are enormous potentials in certain aspects in enhancing multilateral cooperation and development, there are also often serious challenges in fostering economic relations among the OIC member countries. Over the last several decades, industrial development process in OIC countries, as a group, has been rather sluggish. In this connection, this section analyses the current state of industrialization and try to identify the opportunities for economic diversification through industrialization.

5.1 Current State of Industrial Development

There is a strong association between per capita income levels and industrialization. Figure 5.1 shows that countries with high per capita income levels, including both OIC and non-OIC countries, have greater manufacturing value added per capita. However, in order to become an industrialized economy, there is a need for a diverse and complex manufacturing base.

Although some OIC countries are today

Figure 5.1: MVA per capita vs GDP per capita in 2016

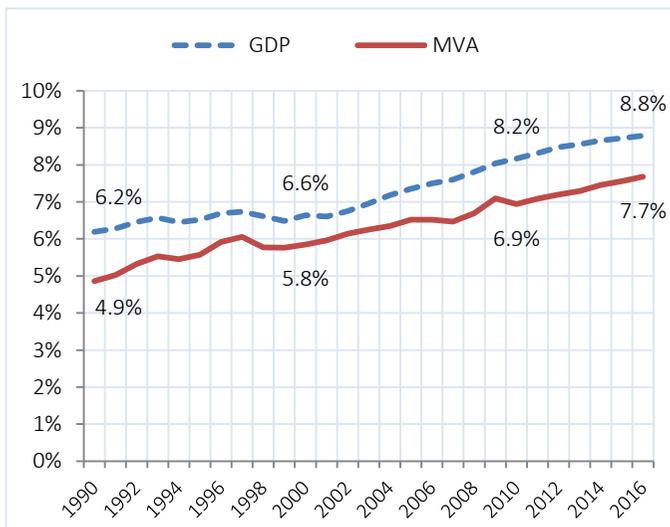


Source: SESRIC staff calculation based on UNIDO MVA Database. GDP per capita over 100,000 USD are truncated.

classified as high-income countries, none of the OIC member countries can be considered as an industrialized country. While high-income OIC countries are heavily dependent on natural resources, some emerging economies in the OIC region with relatively higher levels of industrial development and manufacturing value added are not well diversified to become highly industrialized economies. However, overall trend is not quite gloomy. As shown in Figure 5.2, the share of OIC countries in global manufacturing value added (MVA) is constantly rising along with the rise in the share of global GDP. The share of OIC countries in total MVA was only 4.9% in 1990, which increased to 5.8% in 2000 and 7.7% in 2016. Despite the steady increase and given the existing potentials in terms of human capital, energy resources, and market potential (see SESRIC, 2016a), the current level of contribution to global MVA is far from being satisfactory.

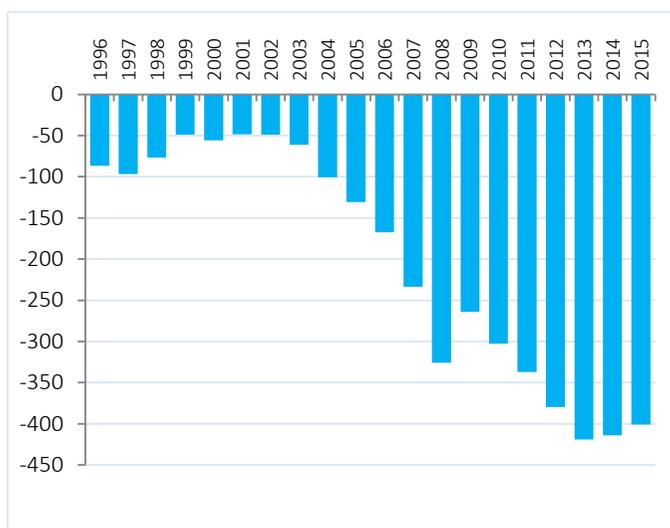
This is also reflected in trade figures in manufacturing. As of 2015, only OIC member country that has trade surplus in manufacturing sector is Malaysia with only around USD 9 million. Other OIC countries reported trade deficit in manufacturing trade. On aggregate, the size of trade deficit in manufacturing is steadily rising in OIC countries (Figure 5.3). Although there is apparently a slight reversal in the growth of trade deficit

Figure 5.2: Share of OIC Countries in Global GDP and MVA (1990-2016)



Source: SESRIC staff calculation based on UNIDO MVA Database. Figure includes data for 56 OIC countries

Figure 5.3: Trade Balance in Manufacturing (Billion USD)



Source: SESRIC staff calculation based on World Bank WDI Database. Figure includes data for 37 OIC countries.



since 2013, total trade deficit in 37 OIC countries, for which data available, remained above USD 400 billion. The rest of this subsection provides more detailed analysis on MVA, structure of manufacturing industries and productivity in manufacturing in OIC countries.

5.1.1 Value Added in Manufacturing Sector

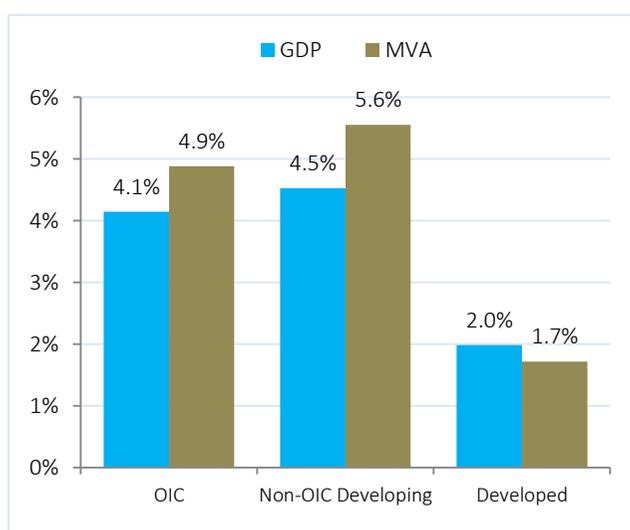
OIC countries as a group are accounting increasingly higher share of global MVA. Table 5.1 compares the annual growth rates of GDP and MVA in three different time periods. During 1990s, annual growth rates in both GDP and MVA were higher than the averages of developed and non-OIC developing countries. The catch-up process with developed countries has accelerated during 2000s, as OIC countries recorded an average GDP growth rate of 4.9% and MVA growth rate of 4.7% compared to only 1.4% and 0.4%, respectively, in developed countries. However, particularly with the increasing participation of China to global economy, non-OIC developing countries recorded higher levels of growth in GDP and MVA. After 2010, OIC countries became again the leader in terms of growth rates of GDP and MVA, which surpassed non-OIC developing countries by around 1 percentage point.

Table 5.1: Compound Annual Growth Rates

	1990-1999		2000-2009		2010-2016	
	GDP	MVA	GDP	MVA	GDP	MVA
OIC Countries	3.1%	4.5%	4.9%	4.7%	3.8%	4.7%
Developed Countries	2.5%	2.1%	1.4%	0.4%	1.0%	0.7%
Non-OIC Developing Countries	2.6%	3.5%	5.9%	7.0%	3.0%	3.6%

Source: SESRIC staff calculation based on UNIDO MVA Database.

Figure 5.4: Compound Annual Growth Rates of GDP and MVA (1990-2016)



Source: SESRIC staff calculation based on UNIDO MVA Database.

Clearly, there is a relatively stronger economic performance achieved by OIC countries during 1990s and 2010s, as reflected also in Figure 5.4. Over the whole period between 1990 and 2016, compound annual growth rate of MVA in OIC countries (4.9%) was lower than the rate in non-OIC developing countries (5.6%), but significantly higher than the rate in developed countries (1.7%).

At individual country level, except four OIC countries, all OIC countries experienced a growth in manufacturing value added (Table 5.2, column a). The fastest growth

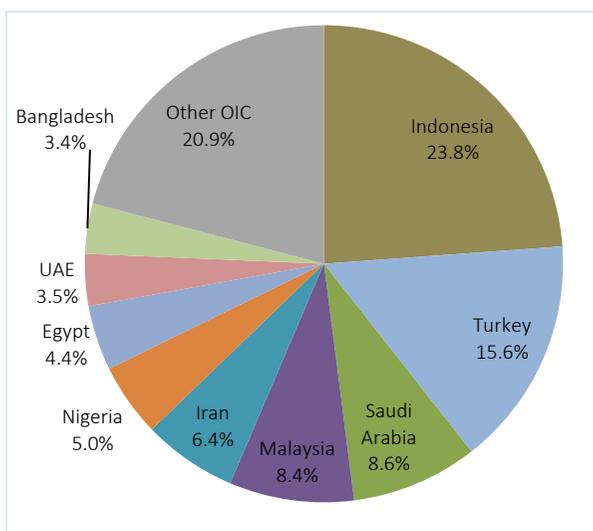
was observed in Oman (9.2%), Chad (8.0%), Uganda (7.7%), Bangladesh (7.7%) and Lebanon (7.0%). On the other hand, Tajikistan (-5.6%), Libya (-3.7%), Kyrgyzstan (-2.4%) and Azerbaijan (-0.6%) are the countries that deindustrialized since 1990. While many central Asian countries experienced a fall in their MVA, Turkmenistan sustained a high growth rate of 5.4% after its independence.

Notwithstanding the varying growth performances across OIC countries, total MVA in all OIC countries continued to be

dominated by few member countries. With a share of 23.8%, Indonesia alone accounts almost one fourth of all MVA in OIC countries, followed by Turkey (15.6%), Saudi Arabia (8.6%), Malaysia (8.4%) and Iran (6.4%). Top five OIC countries account for 62.8% of total MVA in OIC countries (Figure 5.5). On the other hand, 39 OIC countries have each less than 1% share in total MVA and 18 OIC countries have each less than 0.1%, reflecting almost inexistence of manufacturing sector in these countries.

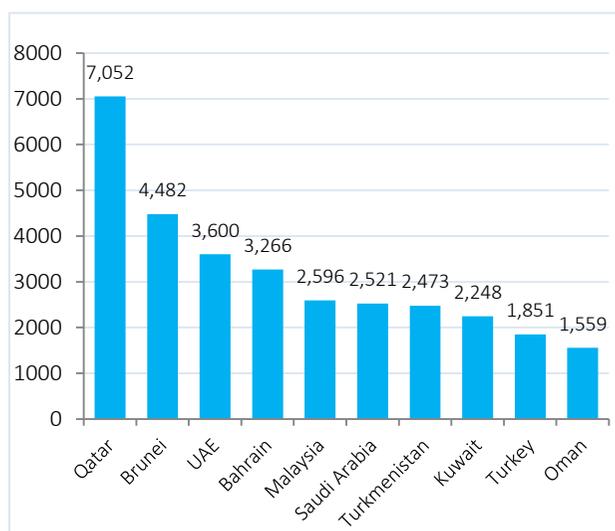
Although MVA in most OIC countries expanded in absolute terms, 21 OIC countries experienced a negative growth in per capita terms during the period under consideration (Table 5.2, column b), with the most severe contractions being observed in Tajikistan (-7.3%), Libya (-5.0%), Kyrgyzstan (-3.6%), Afghanistan (-3.1%) and Sierra Leone (-1.9%). Despite rapid population growth, Bangladesh could achieve the highest growth in MVA with 5.9% annual growth in per capita MVA during 1990-2016. It was followed by Oman (5.3%), Iran (4.5%), Chad (4.4%) and Uganda (4.3%). Apart from the divergent performance of OIC countries, resource rich

Figure 5.5: Top OIC Countries in MVA (2016)



Source: SESRIC staff calculation based on UNIDO MVA Database.

Figure 5.6: Top OIC Countries in MVA per Capita (2016)



Source: SESRIC staff calculation based on UNIDO MVA Database.



countries remain to occupy the top ranks in terms of MVA per capita values (Figure 5.6). With over USD 7,000, Qatar has the highest per capita MVA, followed by Brunei Darussalam (\$ 4,482), United Arab Emirates (\$ 3,600), Bahrain (\$ 3,266) and Malaysia (\$ 2,596).

Greater importance of manufacturing in the economies of OIC countries can also be observed in the increasing share of MVA in their total GDP. In 1990, MVA was accounting 11.7% of total GDP of OIC countries, which increased to 13.4% in 2000 and 14.1% in 2016 (Figure 5.7). Non-

(a) Manufacturing Value Added				(b) Manufacturing Value Added per Capita			
Oman	9.2%	Guinea	3.1%	Bangladesh	5.9%	Kuwait	0.7%
Chad	8.0%	Togo	3.0%	Oman	5.3%	Palestine	0.4%
Uganda	7.7%	Morocco	2.9%	Iran	4.5%	Togo	0.4%
Bangladesh	7.7%	Senegal	2.8%	Chad	4.4%	Uzbekistan	0.3%
Lebanon	7.0%	Comoros	2.7%	Uganda	4.3%	Guinea	0.1%
Jordan	6.8%	Algeria	2.7%	Malaysia	4.1%	Comoros	0.1%
Mozambique	6.7%	Burkina Faso	2.7%	Indonesia	4.1%	Somalia	-0.1%
Malaysia	6.3%	Kazakhstan	2.4%	Turkmenistan	3.8%	Senegal	-0.1%
UAE	6.2%	Gambia	2.3%	Lebanon	3.8%	Djibouti	-0.2%
Iran	5.9%	Benin	2.3%	Mozambique	3.6%	UAE	-0.2%
Qatar	5.8%	Cameroon	2.2%	Jordan	3.4%	Burkina Faso	-0.3%
Nigeria	5.8%	Somalia	2.1%	Nigeria	3.1%	Qatar	-0.4%
Gabon	5.5%	Uzbekistan	1.8%	Gabon	3.1%	Niger	-0.4%
Indonesia	5.5%	Albania	1.5%	Maldives	3.0%	Cameroon	-0.4%
Bahrain	5.5%	Iraq	1.5%	Egypt	2.9%	Gambia	-0.8%
Yemen	5.5%	Djibouti	1.5%	Pakistan	2.8%	Guinea-Bissau	-0.8%
Turkmenistan	5.4%	Guyana	1.4%	Turkey	2.7%	Benin	-0.8%
Saudi Arabia	5.2%	Guinea-Bissau	1.4%	Saudi Arabia	2.5%	Suriname	-1.0%
Pakistan	5.1%	Côte d'Ivoire	1.1%	Tunisia	2.2%	Brunei	-1.1%
Maldives	5.0%	Brunei	0.9%	Yemen	2.1%	Côte d'Ivoire	-1.4%
Egypt	4.9%	Afghanistan	0.8%	Kazakhstan	2.1%	Iraq	-1.5%
Turkey	4.3%	Suriname	0.1%	Albania	2.0%	Azerbaijan	-1.8%
Mali	4.1%	Sierra Leone	0.1%	Morocco	1.5%	Sierra Leone	-1.9%
Mauritania	3.9%	Azerbaijan	-0.6%	Bahrain	1.4%	Afghanistan	-3.1%
Palestine	3.6%	Kyrgyzstan	-2.4%	Guyana	1.2%	Kyrgyzstan	-3.6%
Tunisia	3.5%	Libya	-3.7%	Mali	1.1%	Libya	-5.0%
Niger	3.4%	Tajikistan	-5.6%	Mauritania	1.1%	Tajikistan	-7.3%
Kuwait	3.3%			Algeria	0.9%		

Source: SESRIC staff calculation based on UNIDO MVA Database.

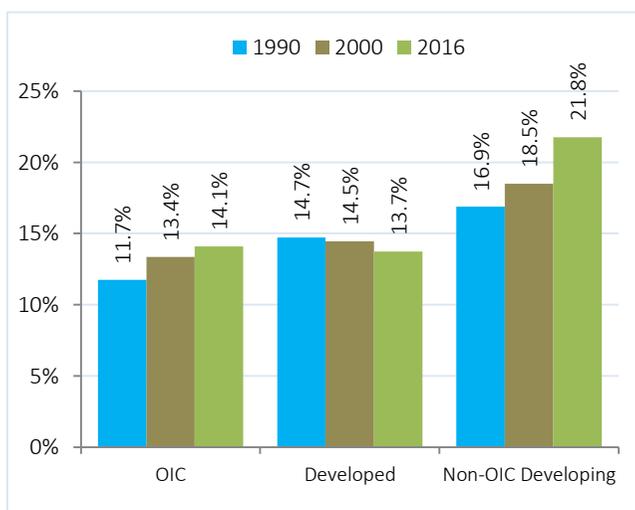
OIC developing countries experienced a faster growth in the share of MVA in their total GDP, driven mainly by Chinese manufacturing growth. On the other hand, the share of MVA in total GDP of developed countries has been falling since 1990, where services value added play increasingly greater role in their total GDP.

Overall, there has been continuous increase in average per capita MVA in OIC countries. It has almost doubled during 1990-2016, by increasing from USD 275 in 1990 to USD 544 in 2016 (Figure 5.8). However, when compared with other country groups, the performance of OIC countries as a group remains rather poor (Figure 5.9). In absolute terms, OIC countries have the lowest average per capita MVA compared to non-OIC developing countries (\$ 1,068) and developed countries (\$ 6,130). Cumulative growth in per capita MVA in OIC countries (98%) is higher than the growth in developed countries (33%), but well below the growth in non-OIC developing countries (198%), as shown in Figure 5.10.

5.1.2 Structure of Manufacturing Industries

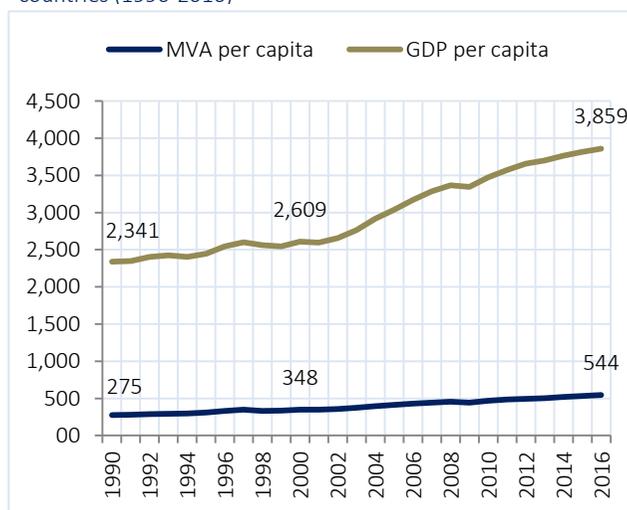
In order to gain a better insight on the industrial development patterns in OIC countries, one should look at the sub-sectoral level contribution of manufacturing activities to overall value added, output and employment. Detailed statistics are unfortunately not available for all OIC countries. According to UNIDO INDSTAT2 database, 20 OIC countries have largely complete dataset for at least a decade. These countries, however, account nearly 80% of total MVA in OIC

Figure 5.7: Share of MVA in GDP



Source: SESRIC staff calculation based on UNIDO MVA Database.

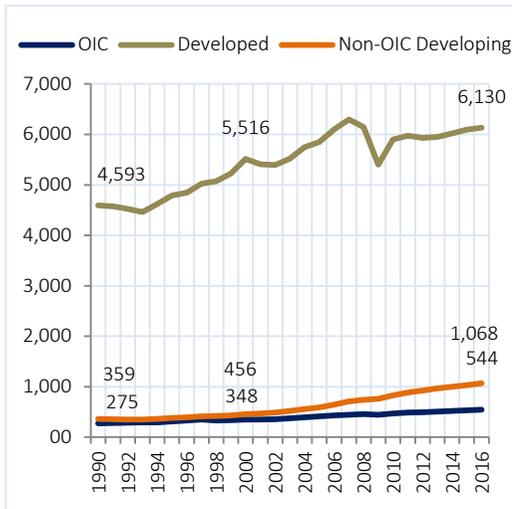
Figure 5.8: MVA per capita and GDP per capita in OIC countries (1990-2016)



Source: SESRIC staff calculation based on UNIDO MVA Database.

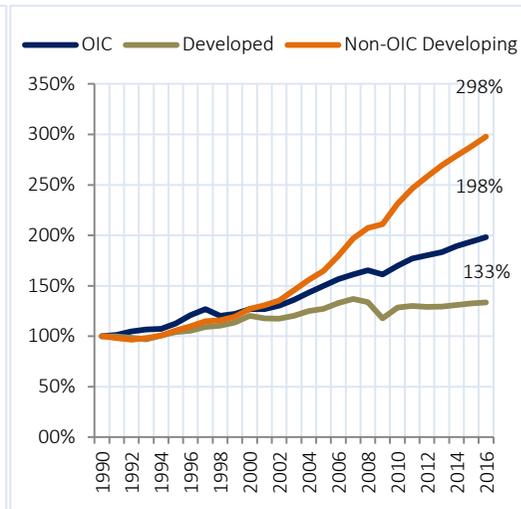


Figure 5.9: MVA per capita (1990-2016)



Source: SESRIC staff calculation based on UNIDO MVA Database.

Figure 5.10: MVA per capita, 1996=100



Source: SESRIC staff calculation based on UNIDO MVA Database.

countries. Despite the data limitations, overall performance of OIC countries can be well assessed based on the available statistics for these 20 OIC countries.

Table 5.3 provides the top manufacturing sectors in terms of their contribution to overall employment, enterprise development, output and value added. The sectors are ordered according to their contribution in 2014, but their contributions in 2009 and 2004 are also included for comparison purposes. In line with the Table, Figure 5.11, 5.12 and 5.13 present the top OIC countries in different manufacturing sectors in terms of employment, output and value added, respectively.

With regard to the contribution of major manufacturing sectors to total employment, food and beverages sector employs the largest share of labour force in manufacturing with a share of 16.9% and its share has been increasing since 2004. Wearing apparel (9.9%) and textiles (8.1%) are the next two major sectors; but, while the share of wearing apparel in total employment remains rather stable, the share of textiles steadily falls. Then there are three sectors that increase their share in total employment during 2004-2014, namely rubber and plastics products (from 6.0% to 6.4%), fabricated metal products (from 4.8% to 6.2%) and furniture (from 4.5% to 6.1%). Since food and beverages, furniture, and wearing apparel are the sectors with heavy concentration of small and medium sized enterprises (SMEs), a significant share of total enterprises are operating in these sectors, which collectively account for 43.4% of all enterprises in OIC countries for which data are available (Table 5.2).

Figure 5.11 shows the top five OIC countries in employment of top ten manufacturing sectors. Indonesia, Turkey and Bangladesh typically have the highest employment in different sectors. In less technology-intensive sectors, such as food and beverages, wearing apparel, textiles and furniture, Bangladesh, Indonesia and Turkey have relatively stronger position. More technology-

intensive sectors, such as machinery, motor vehicles, fabricated metal products and chemical products, are largely dominated by Turkey, but also Iran, Malaysia and Indonesia. It is also

Table 5.3 Top Manufacturing Sectors in OIC Countries

EMPLOYMENT	2004	2009	2014
Food and beverages	15.4%	16.2%	16.9%
Wearing apparel	9.9%	10.4%	9.9%
Textiles	11.7%	8.5%	8.1%
Non-metallic mineral products	6.4%	7.2%	7.1%
Rubber and plastics products	6.0%	6.3%	6.4%
Fabricated metal products	4.8%	5.8%	6.2%
Furniture; manufacturing n.e.c.	4.5%	5.5%	6.1%
Chemicals and chemical products	5.7%	5.5%	5.5%
Machinery and equipment n.e.c.	3.8%	4.0%	4.5%
NUMBER OF ENTERPRISES	2004	2009	2014
Wearing apparel	14.2%	17.6%	16.4%
Fabricated metal products	13.0%	14.6%	15.8%
Food and beverages	17.8%	18.3%	15.3%
Furniture; manufacturing n.e.c.	11.6%	11.4%	11.7%
Machinery and equipment n.e.c.	4.1%	4.1%	7.2%
Wood products (excl. furniture)	9.0%	7.1%	6.4%
Non-metallic mineral products	6.3%	6.0%	5.9%
Textiles	7.6%	4.9%	5.2%
Rubber and plastics products	3.3%	3.9%	4.0%
OUTPUT	2004	2009	2014
Food and beverages	15.5%	16.9%	17.7%
Coke, refined petroleum products, nuclear fuel	9.3%	14.9%	17.4%
Chemicals and chemical products	10.5%	11.7%	12.6%
Basic metals	9.1%	8.2%	8.5%
Motor vehicles, trailers, semi-trailers	6.8%	6.1%	4.8%
Non-metallic mineral products	4.9%	5.4%	4.8%
Rubber and plastics products	4.2%	4.5%	4.4%
Office, accounting and computing machinery	2.4%	4.4%	4.0%
Fabricated metal products	3.4%	3.7%	3.8%
VALUE ADDED	2004	2009	2014
Chemicals and chemical products	12.9%	16.4%	16.9%
Food and beverages	11.8%	13.2%	14.5%
Coke, refined petroleum products, nuclear fuel	7.1%	12.9%	13.1%
Basic metals	7.7%	5.7%	6.4%
Non-metallic mineral products	7.4%	7.7%	5.9%
Motor vehicles, trailers, semi-trailers	6.8%	5.9%	5.0%
Rubber and plastics products	4.3%	4.2%	4.4%
Fabricated metal products	4.3%	4.4%	4.1%
Textiles	6.2%	3.8%	3.9%

Source: SESRIC staff calculation based on UNIDO INDSTAT2 Database. Averages are calculated for 20 OIC countries for which data are available: Albania, Azerbaijan, Egypt, Indonesia, Iran, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Malaysia, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Senegal, Tajikistan, Tunisia, Turkey and Yemen.



worth to mention that tobacco sector is heavily dominated by Indonesia, which employs around 355 thousand people, while the sector employs only 80 thousand people in the following four countries (Bangladesh, Egypt, Iran and Turkey).

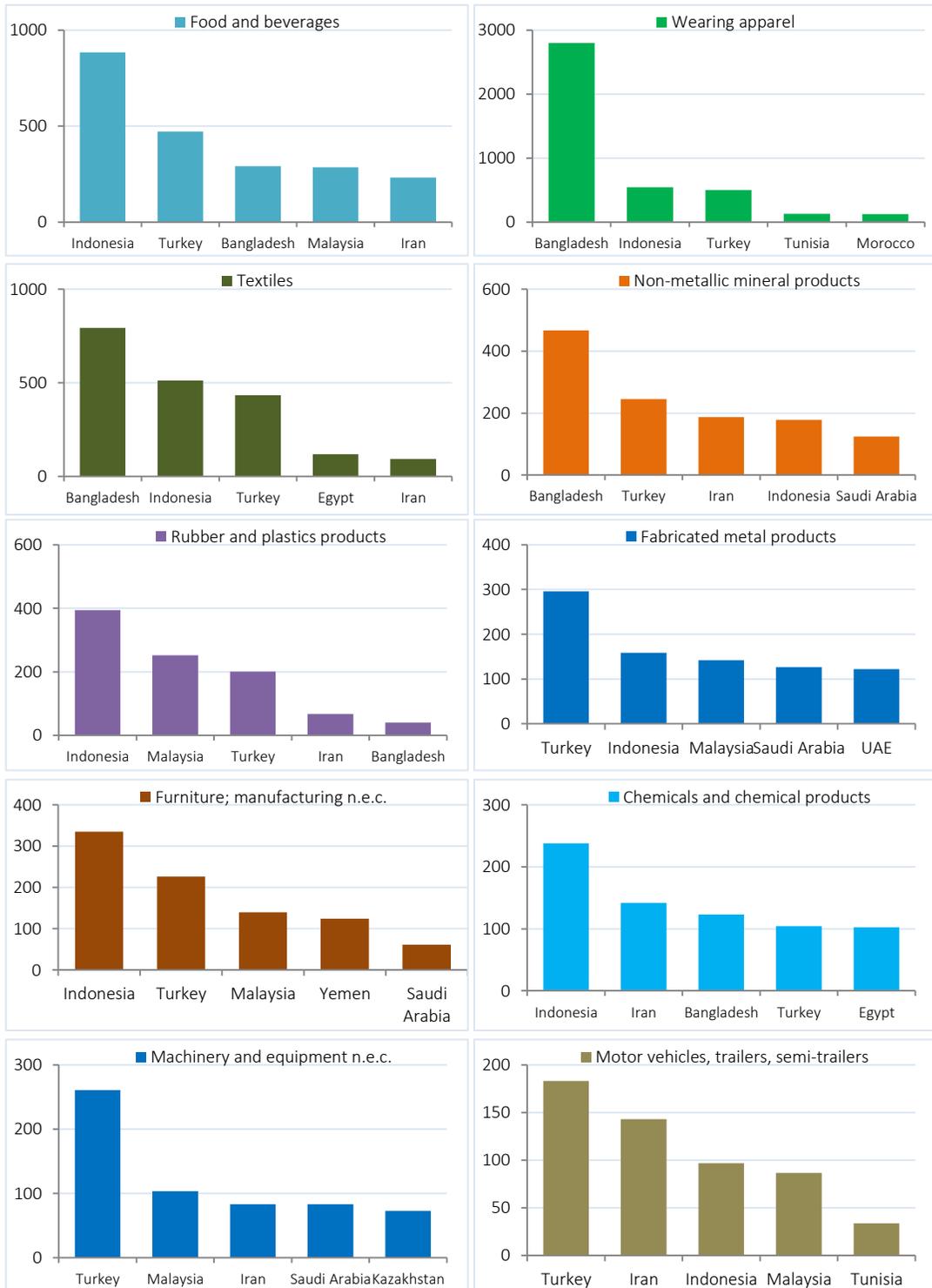
In terms of total output, top three sectors account for 47.7% of all output in manufacturing and their shares are increasing over time. Food and beverages increased its share from 15.5% to 17.7%, coke, refined petroleum products and nuclear fuel increased its share from 9.3% to 17.4% and chemical products from 10.5% to 12.6% during 2004-2014. The share of following three sectors, namely basic metals, motor vehicles, trailers, semi-trailers, and non-metallic mineral products has collectively fallen from 20.8% to 18.1% during the same period. It appears that there is a trend towards increasing concentration of manufacturing production in few sectors.

As in the case of employment, manufacturing production at sectoral level is concentrated in few OIC countries (Figure 5.12). In six of top ten manufacturing industries, Turkey has the largest production. Indonesia has the largest capacity in food and beverages as well as chemical products. In production of coke, refined petroleum products and nuclear fuel, Iran occupies the top rank. Finally, in office, accounting and computing machinery sector, Malaysia by far the largest production capacity among the OIC countries for which data are available.

In terms of value added in major manufacturing sectors, the same sectors as in the case of output dominates the total value added in manufacturing, albeit in different order. Chemicals and chemical products; food and beverages; and coke, refined petroleum products, nuclear fuel sectors account for 16.9%, 14.5% and 13.1% of total MVA in OIC countries as of 2014 and their shares are constantly rising. They were collectively accounting for 31.8% of total MVA in 2004, which increased to 44.4% in 2014. As in the case of output, there is a trend towards higher concentration of MVA in few sectors.

As before, major OIC economies control the bulk of MVA in top manufacturing sectors (Figure 5.13). In their contribution to total MVA, chemical products and coke, refined petroleum products, nuclear fuel sectors are dominated by Saudi Arabia. More strikingly, although Turkey has a production capacity that is more than twice in Indonesia in motor vehicles, trailers and semi-trailers sector, Indonesia has the largest value added in the sector, which nearly doubles the value added in Turkey. Lower efficiency of Turkey in creating more value added is also reflected in some other sectors, such as basic metals, textiles, and rubber and plastic products. Some other countries, including Iran, Kazakhstan and Saudi Arabia, attain higher positions by creating more value added in several manufacturing sectors.

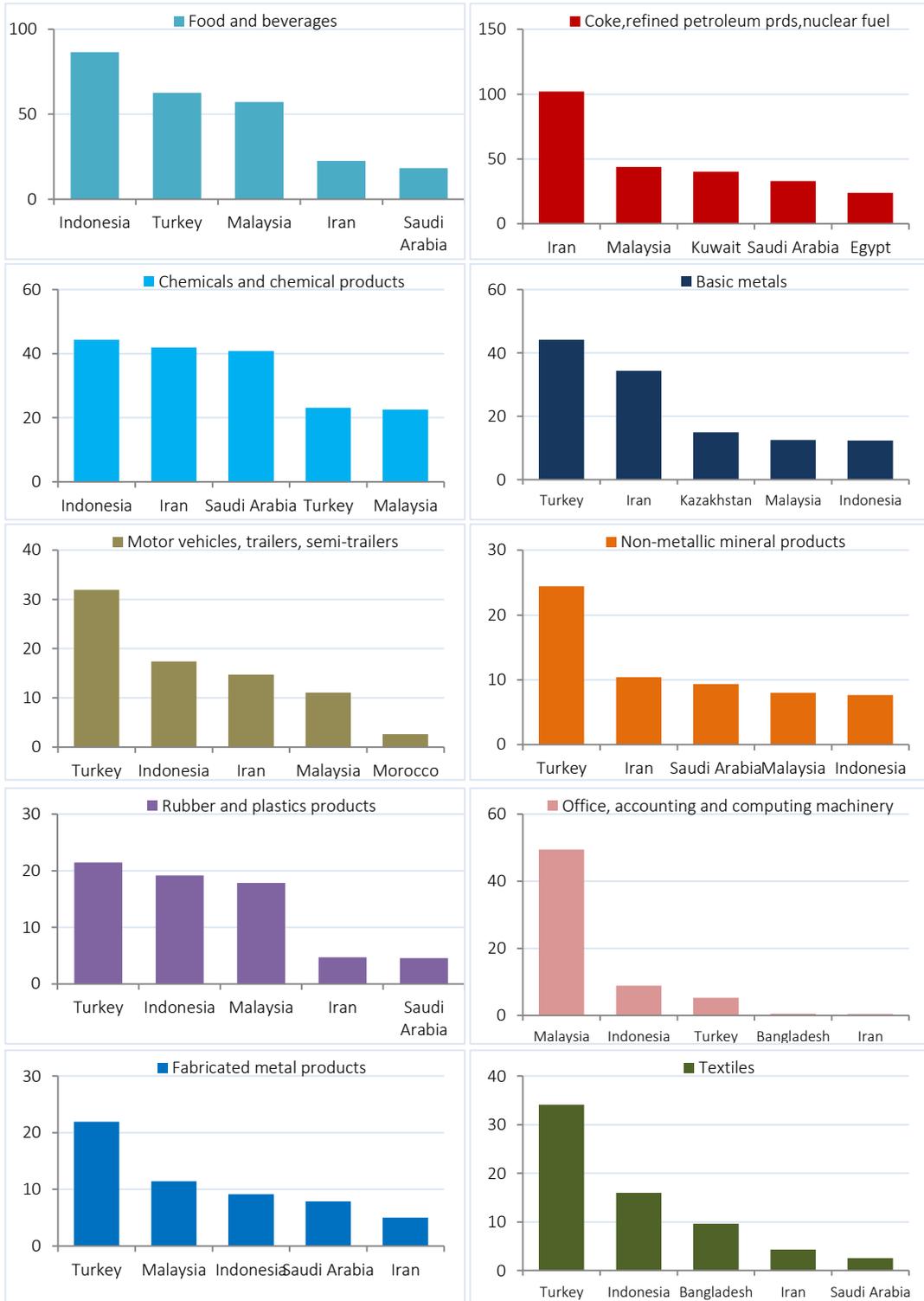
Figure 5.11: Top OIC Countries in Employment of Top Manufacturing Sectors (Thousands)



Source: SESRIC staff calculation based on UNIDO INDSTAT2 2017 Database. Note: Among the 28 OIC countries for which data are available after 2010.

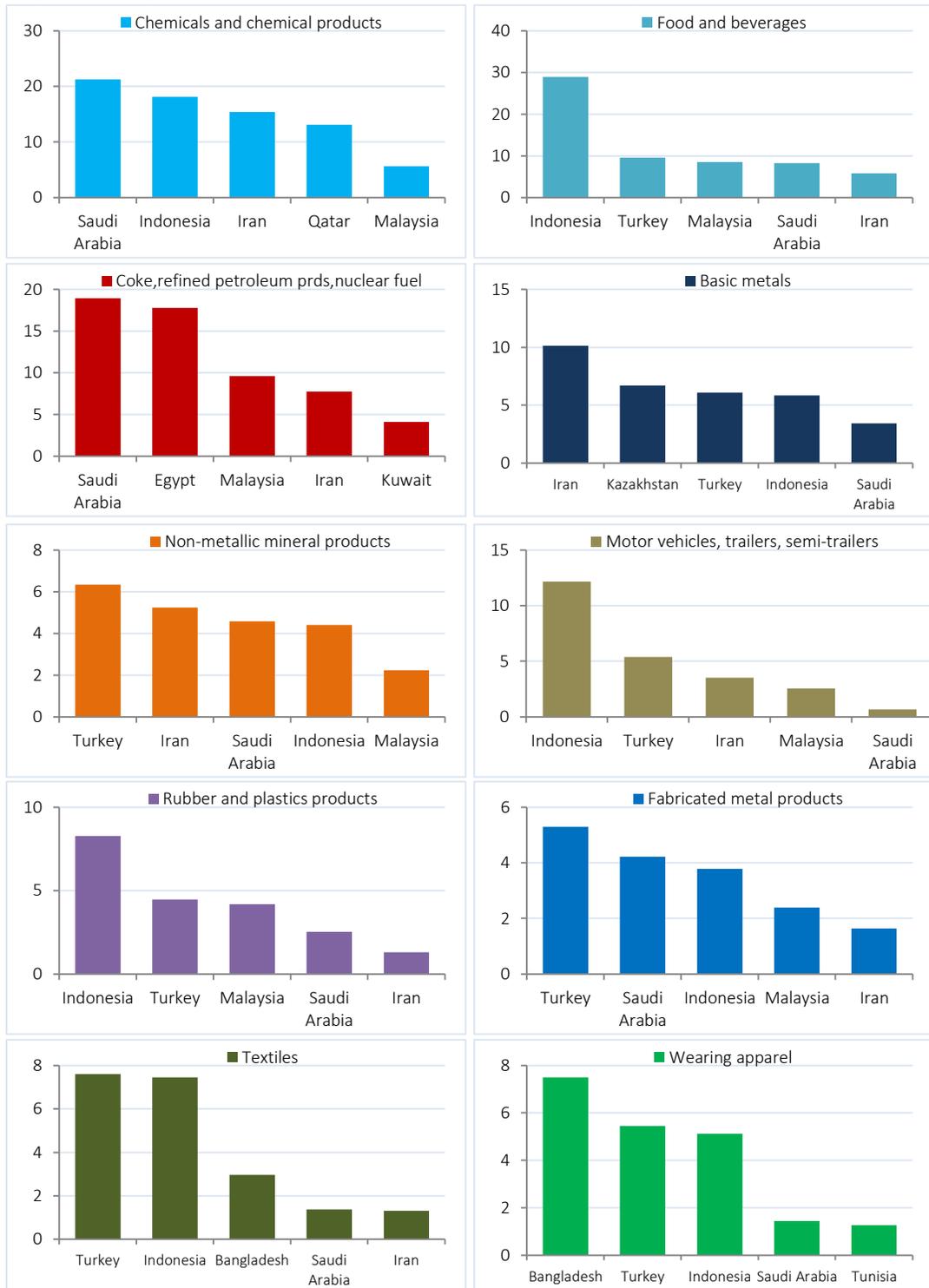


Figure 5.12: Top OIC Countries in Total Output of Top Manufacturing Sectors (Billions)



Source: SESRIC staff calculation based on UNIDO INDSTAT2 2017 Database. Note: Among the 28 OIC countries for which data are available after 2010.

Figure 5.13: Top OIC Countries in Total Value Added of Top Manufacturing Sectors (Billions)



Source: SESRIC staff calculation based on UNIDO INDSTAT2 2017 Database. Note: Among the 28 OIC countries for which data are available after 2010.

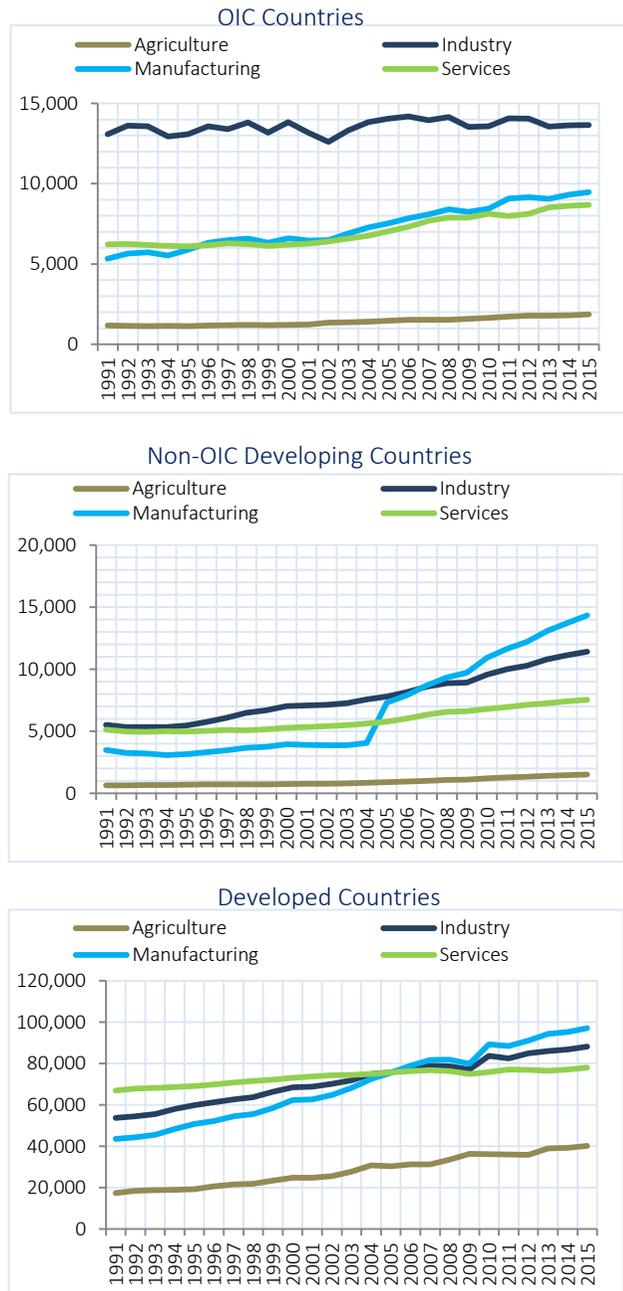


5.1.3 Productivity in Manufacturing

While manufacturing sector is expanding in some OIC countries, to which extent they are supporting productivity growth is another key question that needs to be investigated. There are cases where structural transformation does not increase overall productivity in an economy. According to UNECA (2015), it is possible to observe negative pattern of structural change, particularly in oil- and mineral-dependent countries. It states that, countries with comparative advantage in natural resources in Latin America and Central, East, Southern and West Africa are those that experienced the most negative, productivity-reducing structural change. In those regions, labour moved in the reverse direction from what is expected from growth-enhancing structural change: from more to less productive activities, often to informal activities, with negative effects on productivity and economic growth.

Figure 5.14 compares the labour productivity in major economic sectors in OIC countries, non-OIC countries and developed countries, measured as value added per employed. In OIC countries, labour productivity in industry⁶ remained rather stagnant at around USD 14,000, which is largely driven by mining and utilities (see Figure 5.15 below). Agriculture sector experienced a slow but steady increase in labour productivity. On the other

Figure 5.14: Labour Productivity by Sector (1991-2015)



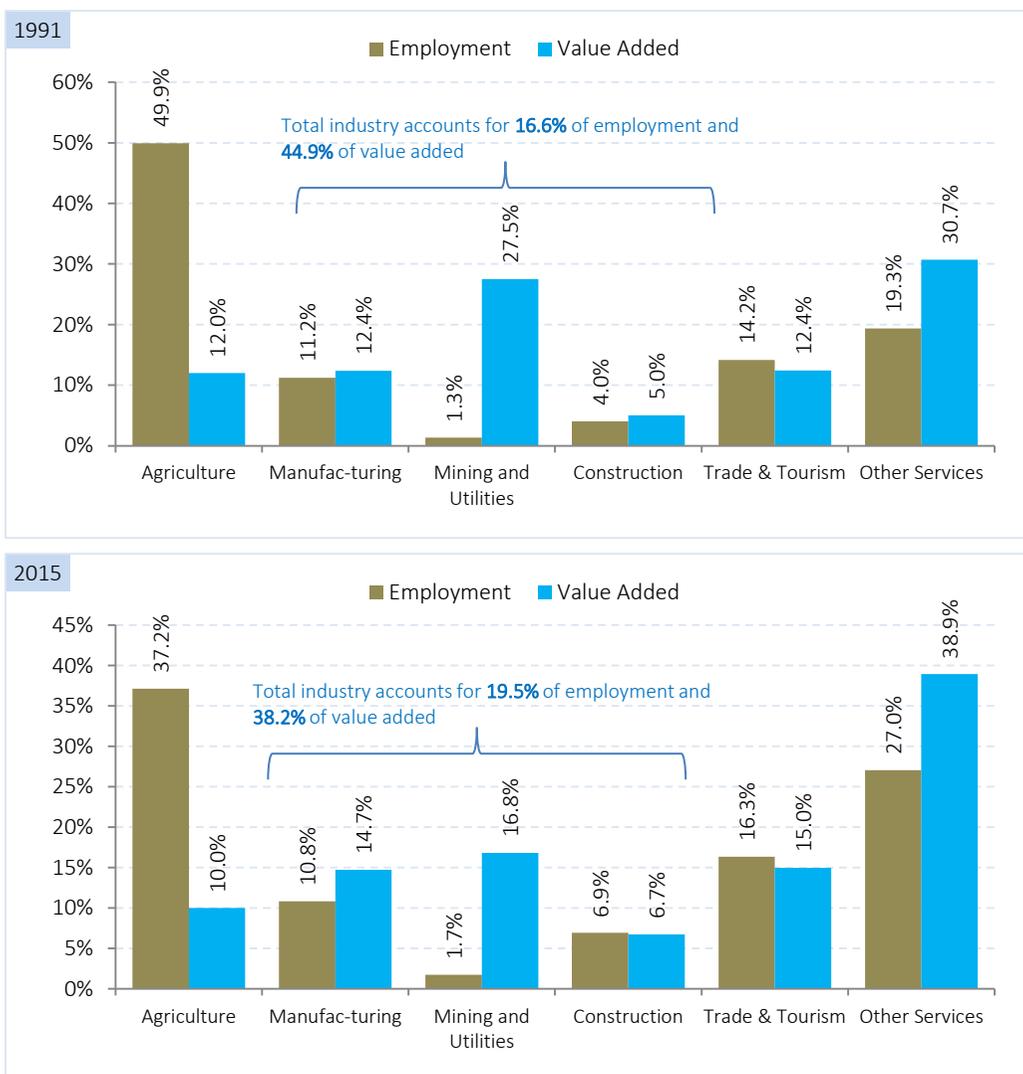
Source: SESRIC staff calculation based on UNSD and ILO databases.
Note: Sudden increase in productivity level in manufacturing sector in non-OIC developing countries is due to availability of Chinese data after this date.

⁶ In addition to manufacturing sector, industry sector includes construction, mining and quarrying, and utilities (electric, gas, etc.) as well.

hand, labour productivity in manufacturing and services expanded at higher rates. More importantly, it expanded more in manufacturing sector than in services sector, which grew by around 80% and 40%, respectively, during 1991-2015.

In contrary to OIC countries, labour productivity in industry sector has been growing in both developed and non-OIC developing countries. It is more than doubled in non-OIC developing countries and expanded more than 60% in developed countries. Productivity growth in agriculture sector has been stronger in these country groups compared to OIC countries. As of 2015, manufacturing sector has the highest level of labour productivity in developed and non-

Figure 5.15: Distribution of Employment and Value Added by Sector in OIC Countries (1991 vs 2015)



Source: SESRIC staff calculation based on UNSD and ILO databases.

Notes: Trade & Tourism: Wholesale & Retail Trade, Hotels & Accommodation services; Other Services: Transport, Communication, Finance and Other Services



OIC developing countries, but industry sector remains the most productive in OIC countries.

Figure 5.15 compares the distribution of employment and value added by economic sectors in 1991 and 2015 for 53 OIC countries. Share of manufacturing in total employment has fallen from 11.2% in 1991 to 10.8% in 2015, but its share in total value added increased from 12.4% to 14.7%, reflecting an obvious labour productivity growth in manufacturing. Mining and utilities had a very small share in total employment (1.3%), but a large share in total value added (27.5%) in 1991. Its share in total employment increased to 1.7%, but its share in value added decreased to 16.8% in 2015. As the last component of industry, construction sector expanded in terms of both employment and value added during the period under consideration. On aggregate, industry sector increased its share in total employment from 16.6% to 19.9% but reduced its share in total value added from 44.9% to 38.2%.

When the contributions of other sectors to total employment and value added are considered, it is observed that there is a decline in the share of agriculture in both total employment and value added and a rise in the share of services in both employment and value added. Obviously, there is a structural transformation away from agriculture to services, but industrialization process remains rather sluggish. In order to avoid the premature deindustrialization trap, it is critical for OIC countries to invest in manufacturing capacities to support industrialization process. More discussion on possible policy options are provided in chapters 6 and 7.

5.2 Opportunities for Economic Diversification through Industrialization

Evidently, there is a strong growth in MVA in OIC countries since more than two decades, but the share of manufacturing in total employment and value added is still low. There is a strong growth in trade deficit in manufacturing products, reflecting the inadequate manufacturing production capacity in OIC countries. However, a well-diversified economy requires a strong and sophisticated manufacturing industry in order to enhance and retain its competitiveness in the global economy. Analysis in the previous subsection reveals that manufacturing activities are intensively concentrated in few OIC countries and remaining countries have negligible contribution of manufacturing in total economic activities.

In order to further stress the importance of economic diversification and the role of manufacturing in enhancing economic competitiveness and complexity, this subsection reviews the composition of manufacturing in selected OIC countries with a view to providing a base for discussion on economic diversification and complementarity issues. It also analyses the industrial competitiveness of OIC countries as well as the relationship between economic complexity and manufacturing activities.

5.2.1 Composition of Manufacturing in Selected OIC Countries

Comprehensive dataset is not available for many OIC countries to make an in-depth analysis on the composition of manufacturing as well as potential complementarities. In order to lay the ground for more exhaustive studies, state of manufacturing sector in few OIC countries will be analysed. These countries are selected based on availability of data, as provided by the UNIDO

INDSTAT4 2017 (Revision 4) database, and include Indonesia, Turkey, Saudi Arabia, Egypt and Senegal.⁷ In addition to the analysis on composition of manufacturing, case studies discuss output and trade balance in manufacturing sectors.

Indonesia

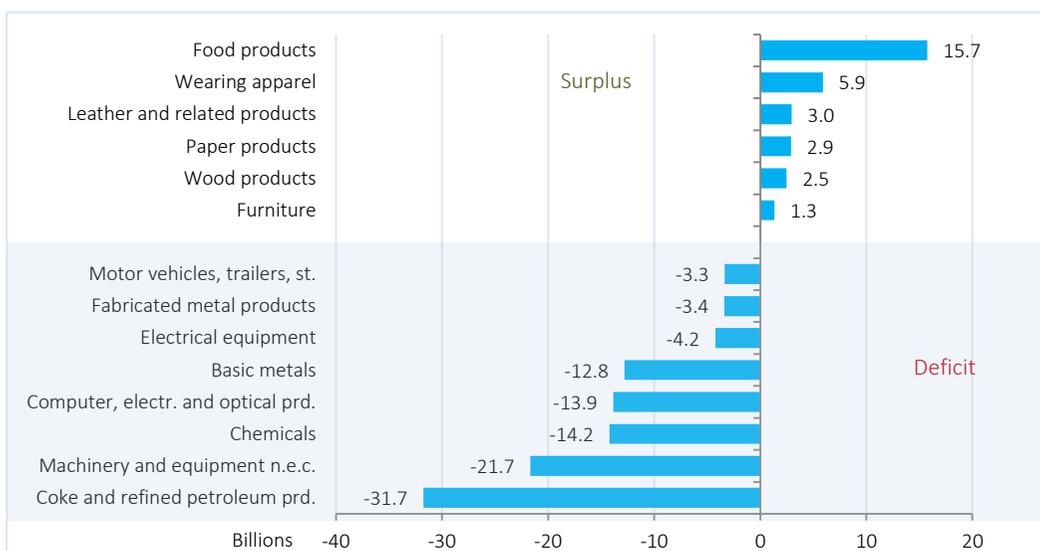
As shown previously in Figure 5.5, Indonesia accounts for almost one quarter of total MVA in OIC countries. It is therefore an important player in manufacturing activities. Detailed country level data (ISIC Rev.4) for Indonesia are available only for 2010-2013. Analysis of the data reveals that manufacturing activity in Indonesia is

Table 5.4: Composition of Manufacturing in Indonesia

	2010	2013
Food products	20.5%	27.7%
Chemicals and chemical products	12.2%	14.6%
Tobacco products	5.5%	6.4%
Motor vehicles, trailers and semi-trailers	7.3%	6.1%
Textiles	5.6%	5.6%
Paper and paper products	5.5%	4.8%
Basic metals	6.7%	4.3%
Electrical equipment	3.2%	4.2%

Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.

Figure 5.16: Manufacturing Sectors with Highest Trade Surpluses and Deficits in Indonesia (2013)



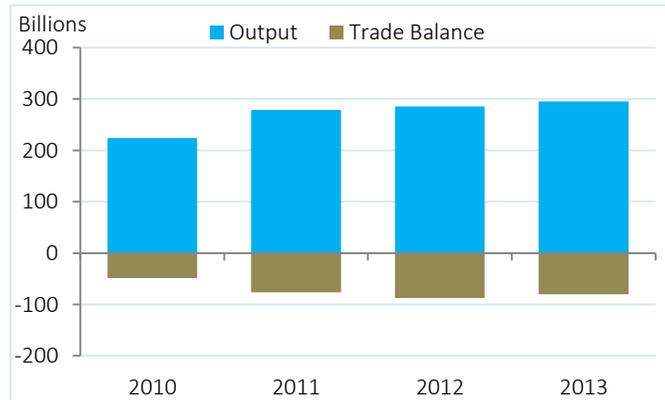
Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.

⁷ Revision 4 of International Standard Industrial Classification of All Economic Activities (ISIC Rev.4) is the latest version of the classification of economic activities and data at this classification are reported only after 2005. Therefore, while it differs across countries, case studies cover a range of data during 2008-2014 in our sample. Moreover, data provided at four-digit ISIC classification level are aggregated to two-digit level for the analyses in this subsection. In few cases, however, there are missing data in detailed classification of the statistics. Therefore, the aggregate numbers may be slightly lower than the actual numbers at two-digit level. In total, there are 24 sectors at two-digit level.



heavily dominated by food sector and its share is increasing. It was accounting for 20.5% of total manufacturing activity in 2010, but increased to 27.7% in 2013. Another growing sector is chemical products. Its share increased from 12.2% to 14.6% during the same period. Perhaps more interestingly, tobacco products constitute the third largest manufacturing sector in Indonesia and it has also an expanding trend. On the other hand, motor vehicles and basic metal sectors experience a decline in their share in total manufacturing activity (Table 5.4).

Figure 5.17: Total Manufacturing Output and Trade Balance in Indonesia



Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.

Strong presence of food sector is also reflected in trade figures, which generated USD 15.7 billion trade surplus for the economy (Figure 5.16). While not among the top sectors of the economy, wearing apparel and leather products also the sectors with trade surplus. However, there are huge trade deficits in several sectors, particularly in coke and refined petroleum products (\$ 31.7 billion) and machinery (\$ 21.7 billion). Overall, Indonesia has trade deficit in manufacturing between USD 50 and 100 billion during the period under consideration (Figure 5.17). Nonetheless, total manufacturing output seems to be growing, which reached almost USD 300 billion in 2013.

Turkey

As the second largest OIC economy in terms of its share in total MVA, Turkey presents a more diversified manufacturing industry. There are nine manufacturing sectors that have a share higher than 5% in total manufacturing output, representing a more robust picture in terms of economic diversification. Although food products are also the top sector in Turkey, its share fell to 14.4% in 2014 from 15.8% in 2009. On the other hand, basic metals, textiles and motor vehicles sectors claim bigger share in total manufacturing. While

Table 5.5: Composition of Manufacturing in Turkey

	2009	2014
Food products	15.8%	14.4%
Basic metals	10.4%	11.5%
Textiles	7.9%	8.9%
Motor vehicles, trailers and semi-trailers	8.2%	8.3%
Wearing apparel	6.9%	6.4%
Other non-metallic mineral products	5.9%	6.4%
Fabricated metal products	5.3%	5.7%
Rubber and plastics products	5.2%	5.6%
Electrical equipment	6.1%	5.5%

Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.

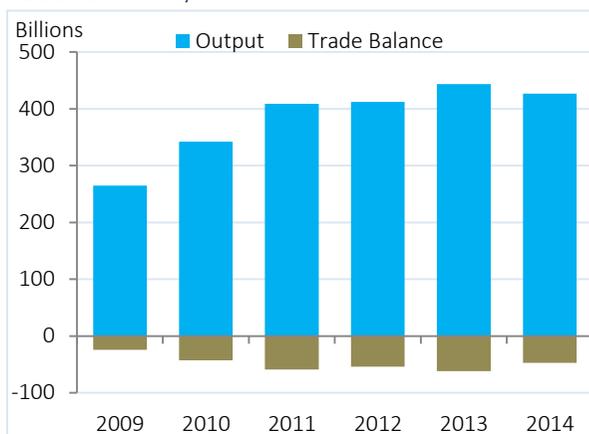
Figure 5.18: Manufacturing Sectors with Highest Trade Surpluses and Deficits in Turkey (2014)

Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.

remaining strong, wearing apparel and electrical equipment sectors experienced a decline their share in total manufacturing (Table 5.5).

Despite the fall in the share of wearing apparel in total manufacturing output, it generates the highest trade surplus for the economy (\$ 10.6 billion), followed by textiles (\$ 6.7 billion) and food products (\$ 6.5 billion). With a 4.5% share in total manufacturing, chemicals sector appears to have limited production capacity, causing the highest trade deficit with USD 23.9 billion in 2014 (Figure 5.18). Coke and refined petroleum products, computer, electronic and optical products and machinery are also the sectors with significant trade deficits.

Overall, Turkey has trade deficit in manufacturing that is typically less than USD 50 billion during the period under consideration (Figure 5.19). Nevertheless, total manufacturing output seems to be growing, which remains above USD 420 billion in 2014.

Figure 5.19: Total Manufacturing Output and Trade Balance in Turkey

Source: SESRIC staff calculation based on UNIDO IDSB 2017 Rev.4 Database.



Saudi Arabia

By accounting for 8.6% of total MVA in OIC countries, Saudi Arabia is the third largest contributor to MVA within the OIC region. However, compared to Turkey and Indonesia, it presents a more concentrated manufacturing sector. Chemical products constitute the largest share of the production in manufacturing with 25.8% in 2014, followed by coke and refined petroleum products (21.2%). Together with food sector, top three sectors account for 58.8% of total manufacturing activities in Saudi Arabia. However, a small increase is observed in the shares of sectors that had less than 5% share in 2010 (Table 5.6).

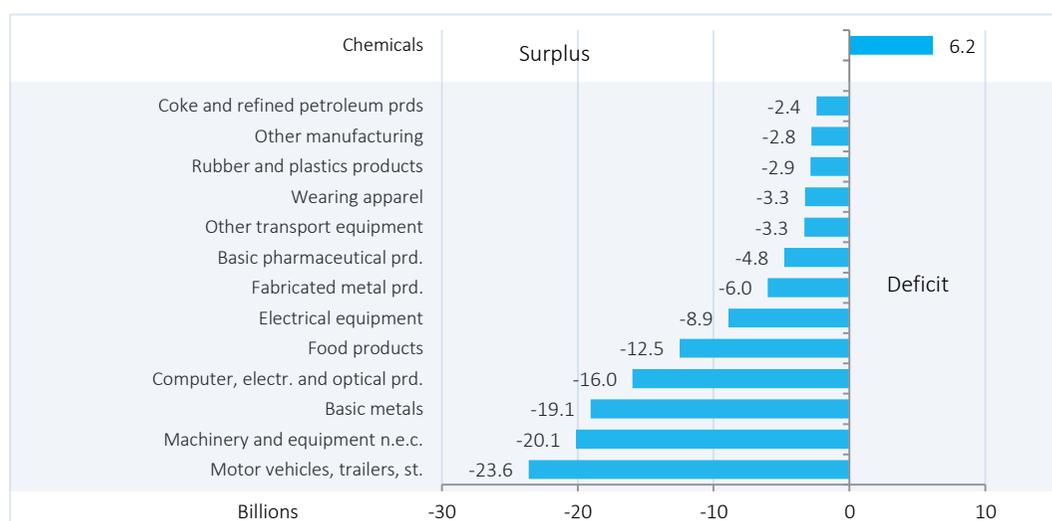
Table 5.6: Composition of Manufacturing in Saudi Arabia

	2010	2014
Chemicals and chemical products	24.7%	25.8%
Coke and refined petroleum products	22.7%	21.2%
Food products	12.4%	11.7%
Other non-metallic mineral products	6.3%	6.0%
Fabricated metal products	5.0%	5.1%
Basic metals	4.5%	4.9%
Electrical equipment	4.1%	4.2%
Rubber and plastics products	2.5%	2.9%

Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

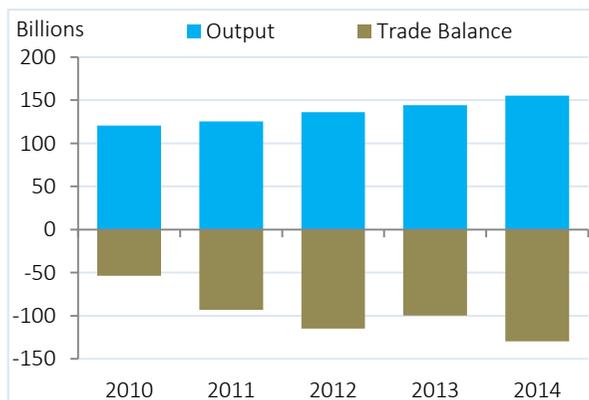
Except USD 6.2 billion trade surplus in chemicals sector, Saudi Arabia has trade deficit in all remaining manufacturing sectors (Figure 5.20). The largest deficits are recorded motor vehicles (\$ 23.6 billion), machinery (\$ 20.1 billion) and basic metals (\$ 19.1 billion). In total, almost USD 130 billion worth of trade deficit was recorded in manufacturing products, which shows also a dramatic increase when compared with the value in 2010 (\$ 54 billion). Trade deficit increases in Saudi Arabia despite the rise in manufacturing output, which exceeded USD 155 billion in 2014 (Figure 5.21).

Figure 5.20: Manufacturing Sectors with Highest Trade Surpluses and Deficits in Saudi Arabia (2014)



Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

Figure 5.21: Total Manufacturing Output and Trade Balance in Saudi Arabia



Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

Table 5.7: Composition of Manufacturing in Egypt

	2010	2014
Coke and refined petroleum products	27.0%	29.8%
Food products	14.6%	16.7%
Chemicals and chemical products	7.4%	10.2%
Basic metals	11.4%	10.2%
Other non-metallic mineral products	7.3%	7.0%
Electrical equipment	5.6%	3.7%
Basic pharmaceutical products and pharmaceutical preparations	3.7%	3.5%
Textiles	3.6%	2.9%

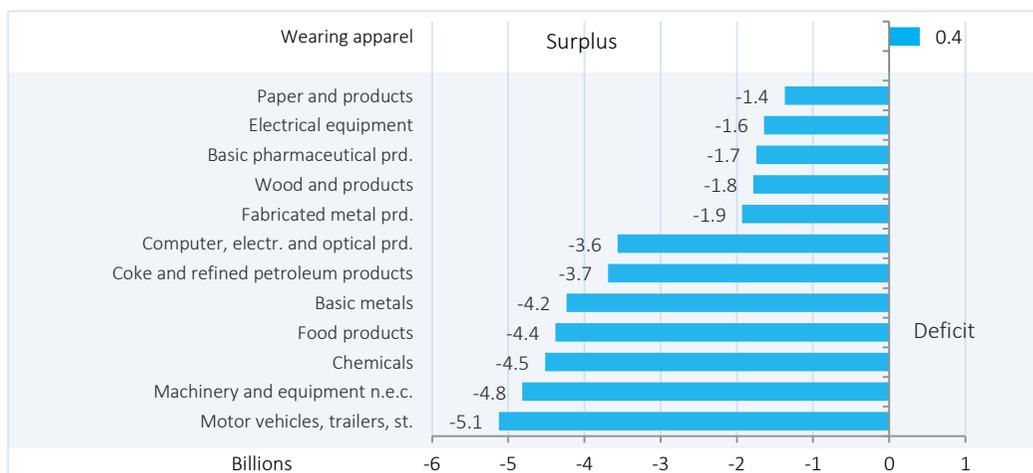
Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

Egypt

With a 4.4% share, Egypt is the seventh largest economy in terms of its share in total MVA of OIC countries. As in the case of Saudi Arabia, manufacturing in Egypt also looks pretty much concentrated in few sectors. Particularly, coke and refined petroleum products account for almost 30% of total manufacturing activity in the country, followed by food products (16.7%) and chemical products (10.2%). More importantly the

shares of top three sectors are increasing, which leads to growing concentration of manufacturing activities in few sectors. In 2014, top four sectors accounted for 66.8%, or two-thirds of all manufacturing production. Moreover, the shares of other emerging sectors, including electrical equipment, pharmaceutical

Figure 5.22: Manufacturing Sectors with Highest Trade Surpluses and Deficits in Egypt (2014)



Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.



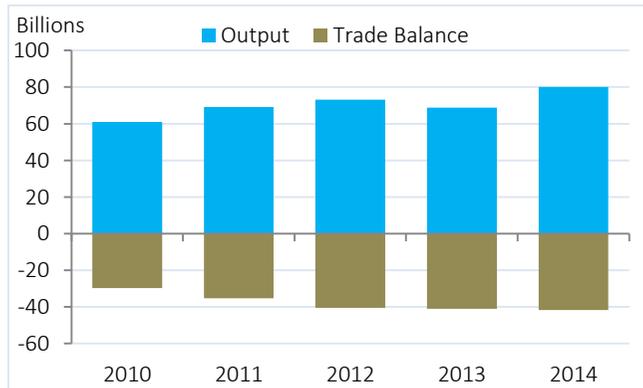
products and textiles, are falling, further intensifying the economic concentration (Table 5.7).

If we ignore the small trade surplus in wearing apparel, Egypt records trade deficits in all manufacturing sectors (Figure 5.22). The highest deficit was recorded in motor vehicles sector with USD 5.1 billion, followed by machinery and equipment (\$ 4.8 billion) and chemical (\$ 4.5 billion). In total, Egypt experiences a trade deficit of around USD 40 billion over the last three years (Figure 5.23). Total manufacturing output appears to grow steadily, which reached USD 80 billion in 2014 compared to USD 60.1 billion in 2010.

Senegal

Senegal is one of the OIC countries that has negligible share in total MVA of the OIC region. Although there is no strong manufacturing presence

Figure 5.23: Total Manufacturing Output and Trade Balance in Egypt



Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

the last three years (Figure 5.23). Total manufacturing output

Table 5.8: Composition of Manufacturing in Senegal

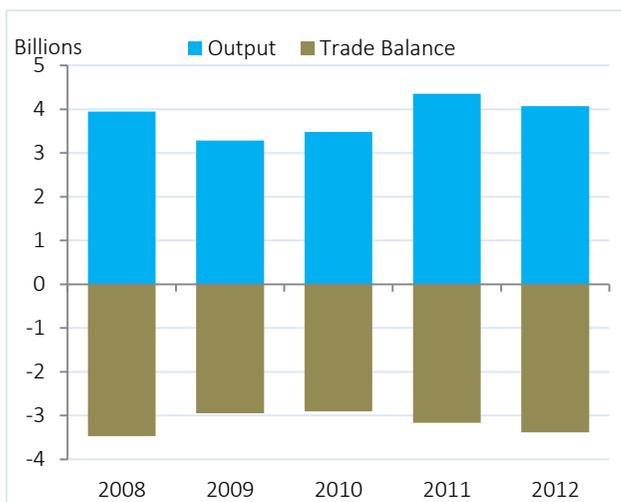
	2008	2012
Food products	31.4%	32.1%
Coke and refined petroleum products	21.9%	17.6%
Chemicals and chemical products	12.2%	12.4%
Other non-metallic mineral products	10.2%	12.3%
Rubber and plastics products	3.4%	3.6%
Tobacco products	3.1%	3.1%
Basic metals	2.9%	2.7%

Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

Figure 5.24: Manufacturing Sectors with Highest Trade Surpluses and Deficits in Senegal (2012)



Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

Figure 5.25: Total Manufacturing Output and Trade Balance in Senegal

Source: SESRIC staff calculation based on UNIDO IDSDB 2017 Rev.4 Database.

in the country, whatever produced is highly concentrated in few sectors. Almost one third of manufacturing production takes place in food sector (Table 5.8). Top four sectors, involving food products, coke and refined petroleum products, chemical products and other non-metallic mineral products, account for 74.3% of all manufacturing output.

Excluding small surpluses in the trade of non-metallic mineral products and tobacco products, Senegal is also a net importer of manufacturing products (Figure 5.24). The largest item in trade deficit is food products with USD

0.86 billion. In total, Senegal records trade deficit in the amount of over USD 3 billion. Its total production in manufacturing industry was just over USD 4 billion in 2012 (Figure 5.25).

5.2.2 Competitiveness in Industrial Performance

Shifts in the relative position of countries in terms of MVA and industrial exports can be attributed to changes in individual countries' industrial competitiveness. Industrial competitiveness is defined as the capacity of countries to increase their presence in international and domestic markets while simultaneously developing industrial sectors and activities with higher value added and technological content (UNIDO, 2014). UNIDO assesses and benchmarks industrial competitiveness through its Competitive Industrial Performance (CIP) index. It is composed of eight indicators assessing industrial performance based on an economy's ability to competitively produce and export manufactured goods. Each indicator is weighted on a scale of 0 to 1 and grouped along three dimensions of industrial competitiveness. The first dimension relates to a country's capacity to produce and export manufactures, the second dimension covers a country's levels of technological deepening and upgrading and the third dimension of competitiveness entails country impact on world manufacturing (for more information, see UNIDO, 2014). It includes data for 39 OIC countries, 37 developed countries and 68 non-OIC developing countries.

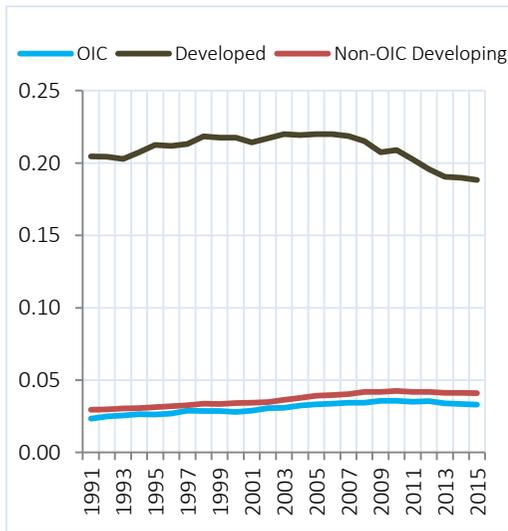
Figures 5.26-29 compares the performances of OIC countries with other country groups in terms of CIP index and some of its sub-indicators. There is naturally a huge gap between developed and developing countries. In CIP index, there is a trend towards closing the gap between developed and developing economies, particularly due to the falling trend of the competitiveness in developed countries since around 2000. OIC countries increased its average



index value from 0.023 in 1991 to 0.033 in 2015, while it increased in non-OIC developing countries from 0.029 to 0.041 during the same period. Overall, OIC countries remain less competitive than other country groups in industrial performance.

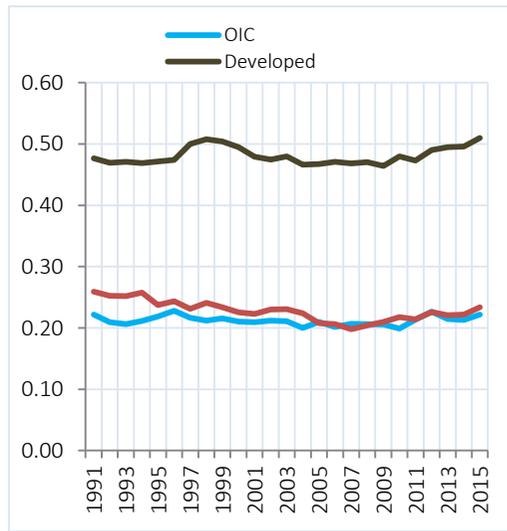
In addition to the overall CIP index, industrial intensity, share of medium and high tech activities in total MVA and export quality indices are also presented in Figures 5.27-29. A subcomponent

Figure 5.26: Competitive Industrial Performance Index (1991-2015)



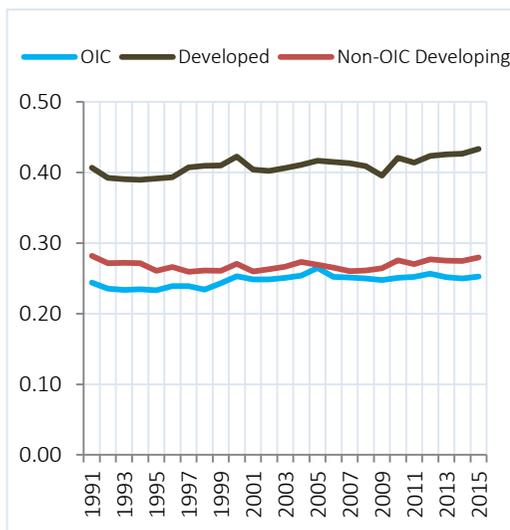
Source: SESRIC staff calculation based on UNIDO CIP 2017 Database.

Figure 5.27: Share of Medium and High-Tech Activities in Total MVA Index (1991-2015)



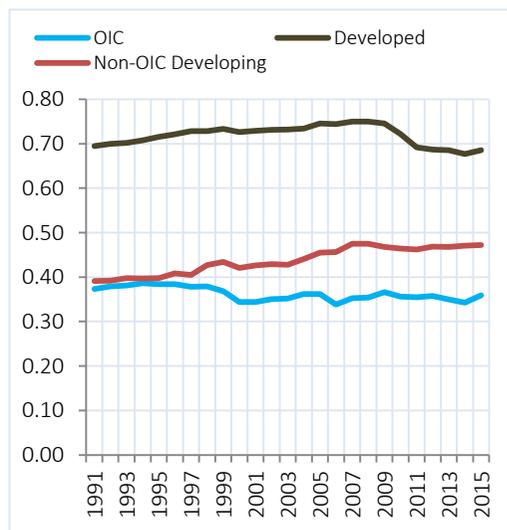
Source: SESRIC staff calculation based on UNIDO CIP 2017 Database.

Figure 5.28: Industrial Intensity Index (1991-2015)



Source: SESRIC staff calculation based on UNIDO CIP 2017

Figure 5.29: Industrial Export Quality Index (1991-2015)



Source: SESRIC staff calculation based on UNIDO CIP 2017 Database.

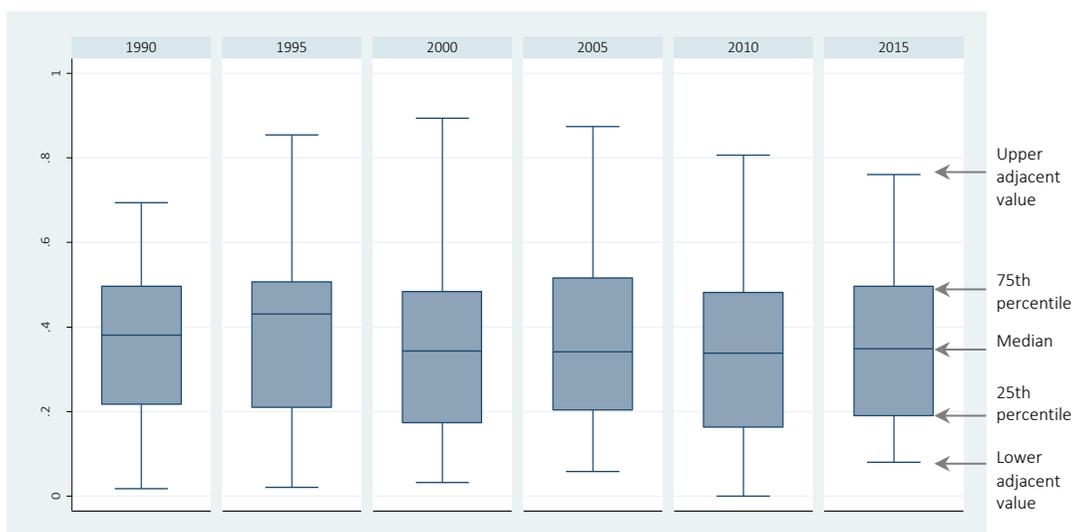
of industrial intensity index is the share of medium and high-tech activities in total MVA index. It captures the technological complexity of manufacturing, with higher values indicating higher technological complexity of the industrial structure of a country. As also discussed in previous section, development generally entails a structural transition from resource-based and low-tech activities to medium and high-tech ones. Higher complexity of the production structures implies more opportunities for learning and technological innovation within and across sectors. Figure 5.27 shows that despite huge differences with developed countries, OIC countries were able to improve its technological complexity more than non-OIC developing countries.

As one of the composite indicators of CIP index, industrial intensity index captures the role of manufacturing as well as the technological complexity of manufacturing in a country. Although OIC countries are closing the gap with non-OIC developing countries, the gap with developed countries did not change significantly during 1991-2015 (Figure 5.28).

Industrial export quality is another composite indicator of CIP, which captures the role of manufacturing in a country's export activity, manufacturing's technological complexity, the ability of a country to produce more technologically sophisticated products and to move into more dynamic areas of export growth. In this index, OIC countries unfortunately perform poorer than other country groups and more importantly, non-OIC developing countries expanded the gap with OIC countries particularly after 1997 (Figure 5.29). Distribution of overall performance of OIC countries over the years is also shown in Figure 5.30.

An overall comparison of OIC countries with other country groups in the CIP and five other components of the index for the year 2015 is shown in Figure 5.31. Except MVA per capita and medium-high tech per capita indices, non-OIC countries on average outperform OIC countries.

Figure 5.30: Distribution of Industrial Export Quality Index in OIC



Source: SESRIC staff calculation based on UNIDO CIP 2017

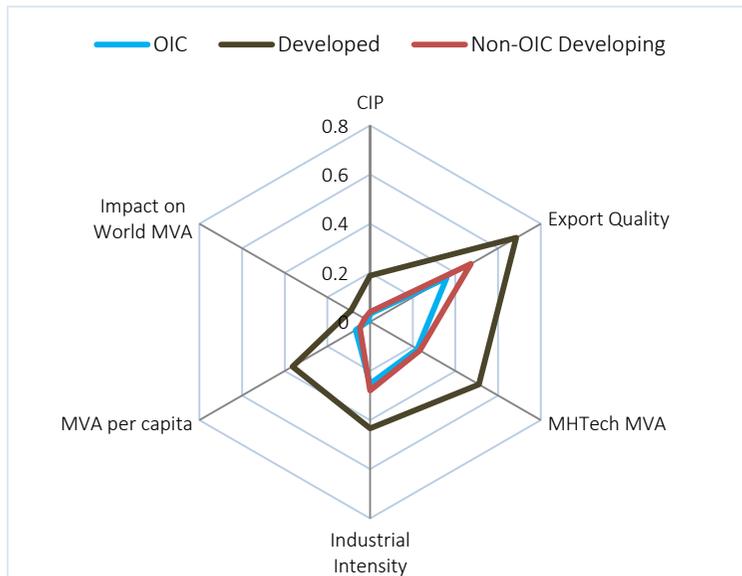


Analysis on industrial competitiveness reveals that OIC countries on average less competitive than non-OIC developing countries. The lack of competitiveness is also associated with poor economic diversification in industrial activities. In this context, this section concludes with some general discussions on economic complexity of OIC countries.

5.2.3 Economic Complexity

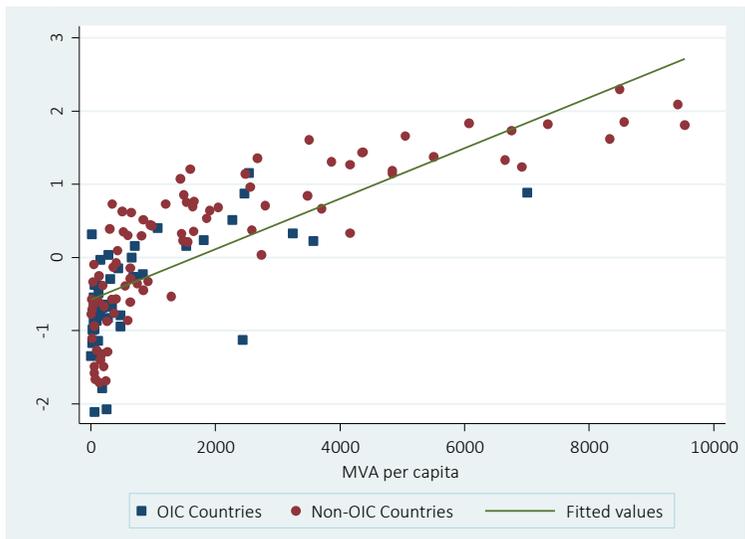
Countries do not simply make the products and services they need, but they make the ones they can do with the available knowledge and resources. While some goods require large amount of knowledge and large networks of people and organizations, others require less knowledge and lower density of networks. The composition of a country's productive output, or its economic complexity, determines the set of goods that they can produce. Complex economies are those that can process vast quantities of relevant knowledge to generate a diverse mix of knowledge-intensive products. Simpler economies, in contrast, have a narrow base of productive knowledge and produce fewer and simpler products (Hausmann et al. 2014). Increased economic complexity is necessary for a society to be able

Figure 5.31: Industrial Competitiveness in Comparison (2015)



Source: SESRIC staff calculation based on UNIDO CIP 2017 Database.

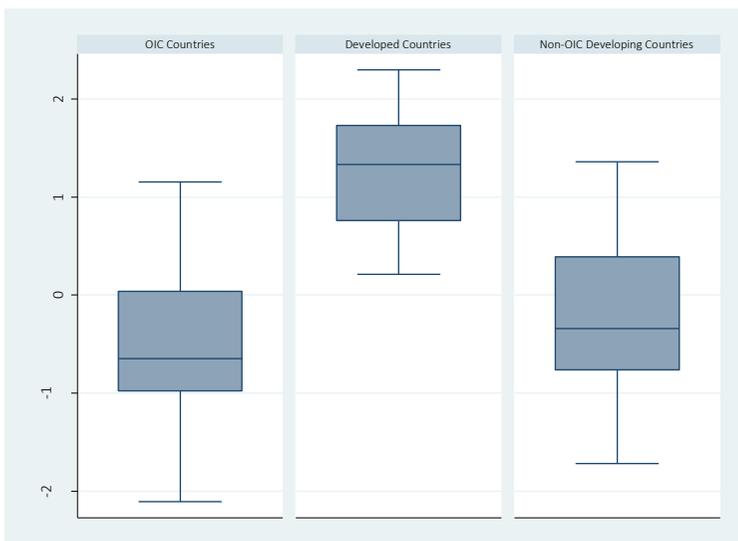
Figure 5.32: Economic Complexity and MVA per Capita (2015)



Source: SESRIC staff calculation based on MIT Economic Complexity Index and UNIDO MVA 2017 Database.

to hold and use a larger amount of productive knowledge, and an index developed by researchers at Harvard University and Massachusetts Institute of Technology (MIT), called the Atlas of Economic Complexity, can measure it from the mix of products that countries are able to make. Although it relies on exports data instead of production data, it offers some important insights on economic complexity of countries.

Figure 5.33: Distribution of Economic Complexity Index in 2015



Source: SESRIC staff calculation based on MIT Economic Complexity Index.

The underlying logic of economic complexity can also be understood as follows. Consider a random product in a particular country and check how many other countries can make the same product if this country cannot make it. If only few other countries are able to make a product that this country cannot make, this would suggest that this is a complex economy. There is also a strong

Figure 5.34: OIC Countries with Highest and Lowest Economic Complexity (2015)



Source: SESRIC staff calculation based on MIT Economic Complexity Index.



association between economic complexity and MVA per capita. As depicted in Figure 5.32, countries with higher economic complexity tend to have higher MVA per capita.

Figure 5.33 shows the distribution of economic complexity index in three country groups for 2015. Evidently, OIC countries have lower economic complexity compared to non-OIC developing countries. As expected, there is a significant variation across OIC countries. Figure 5.34 shows the OIC countries with highest and lowest economic complexity. Malaysia, Qatar and Saudi Arabia appear to be the most complex economies, according to the index. Guinea-Bissau, Nigeria and Bangladesh have the lowest index values in terms of economic complexity. Economic complexity is a useful tool in explaining differences in the level of income of countries and predicting future economic growth. It is not easy to accomplish, but the countries that do achieve it tend to reap important rewards.

5.3 Factors Preventing Industrialization in OIC Countries

Given the global experiences in different parts of the world in achieving industrial development as well as ongoing attempts of many OIC countries to industrialize, it is crucial to have a solid understanding on the major elements that hinders successful industrialization in OIC countries. Current and future initiatives in designing industrial policies should carefully consider these factors in order to increase the likelihood of achieving successful economic transformation.

As reviewed in section 4, international experience has decisively indicated that excessive inward-looking policies inhibit development in the long run because domestic economies were denied a great source of information, technology and, most importantly, competition. Furthermore, many developing countries have small domestic markets, and an import substitution strategy prevents the utilization of economies of scale. The growth experience and trade performance of countries that have followed import substitution industrialization (including Latin American and African countries) have been less impressive than those of countries (such as South Korea, Taiwan and Singapore) that have followed an export oriented industrialization strategy, although they also began their industrialization with import substitution.

Analyses in this section clearly show that current level of industrial development in OIC countries is disappointing. Even relatively more industrialized OIC countries experience trade deficits in manufacturing goods. In order to identify the major causes of mostly failed industrialization policies, country specific experiences should be investigated from very initial phase of designing the policies to particular approaches used in the implementation processes. In certain settings, size of the economy, lack of financial development and good governance may be the key. In others, more specific issues such as research and development capacity, exchange rate appreciation and labour market regulation may have significant effects on industry. A brief overview of these challenges is summarized below but issues related to addressing some of these challenges are discussed more broadly in sections 6 and 7.

Some OIC economies are too small to develop a well-diversified industrial base. There is a significant positive relationship between manufacturing expansion and domestic demand. In

other words, larger countries tend to have a higher manufacturing share due to greater potential of economies of scale. Economic openness is important not only for small but also large economies. Export-oriented industrial strategy would allow access to large markets and support a large scale industrialization programs, as in the case of successful Asian countries. Economic openness is important not only to access to large markets, but also to access to foreign capital, technology and innovation. Enterprises in a relatively closed or protected economy will have lesser chance to learn and transfer latest developments in their fields.

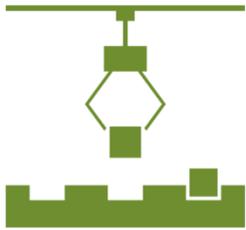
Perhaps the most critical factor in achieving industrial development is good governance. Having well-functioning institutions to implement and monitor the industrialization policies. Industrial policies typically entail government interventions and significant support for certain sectors to grow, which can be easily captured by politically powerful groups who then manipulate it for their own purposes. Therefore, government should ensure that there is high level of transparency and accountability. Government interventions in an inconvenient way could create additional distortions and lead to economic inefficiency, instead of economic development.

An important challenge for OIC countries is the lack of high-skilled human capital stock. Technically and scientifically qualified personnel support the industrial development process by contributing to the technology, innovation, production and marketing. As highlighted in SESRIC (2007), current skills levels of the labour force in OIC countries is comparably low. Therefore, governments should increase government support to education, and improve vocational education and training to upgrade the skills base.

Another important factor that can support industrialization is macroeconomic stability. Lack of macroeconomic stability and long-term predictability can be a major obstacle in achieving industrial development in OIC countries. In a macroeconomic environment with stable exchange rate, low inflation, predictable borrowing rates, suitable deficit and public debt, investments will be able to make better decisions and face less difficulty in accessing to financial and capital markets. In the economic literature, it is also commonly argued that low exchange rates help export sectors to compete, especially sectors which generate more learning externalities.

Finally, inadequate level of financial development hampers the access to capital in financing critical investment opportunities, particularly for newly established innovative enterprises. A well-developed financial system also allows resources to be allocated efficiently. The current level of financial development, as discussed in section 3, is rather underdeveloped. Therefore, there is a need to improve the financial development to increase the ability of firms to obtain adequate financing for their innovative and potentially competitive investment opportunities.





CHAPTER SIX

Designing Industrial Policies for Structural Transformation



An important step in achieving economic diversification and industrial development is a well-designed industrial policy. While designing the policy, it is critical to understand the issues behind the successful and failed experiences of previous industrialization attempts, identification of sectors and industries where individual countries can invest with existing resources, capacities and prevailing multilateral agreements and other external conditions. It is also important to utilize other economic policy instruments in order to complement and support the industrial development process. This section offers a broad perspective on these issues with a view to providing some insights on designing industrial development strategies in OIC countries.

6.1 Past Experiences of Industrial Development and Policy

There have been distinct policy directions of OIC member countries over the last several decades to promote industrial development. Industrial development strategies have been constantly evolving over time with new emerging issues, challenges and opportunities. In this regard, this subsection reviews the experiences of some major OIC economies in their attempts to achieve industrial development.

Egypt

Egypt has long embarked on import substitution industrialization (ISI), which intensified in the post-independence years starting the 1960s, with a complete shift to a planned economy where the state took direct control of industrial production with massive wave of nationalization. During this period, industrial policies were highly selective: the state not only indirectly influenced flows of labour and investment into different economic sectors through discriminatory incentives (such as differential tax rates) but also very directly as the country's largest investor (Galal and El-Megharbel, 2005).

During the period 1974-1990, central planning policies were partially reversed with the adoption of partial liberalization, which was often called the 'Open Door' (*Infitah*) policy period. Reforms concentrated on the liberalization of the foreign exchange market and consumer imports. In 1991, a structural adjustment program was adopted and the government undertook a first phase of reforms that helped to shift the economy partly from central planning towards market-based mechanisms, more trade openness and a more leading role for the private sector. This included macroeconomic stabilization reforms, the introduction of a competitive exchange rate, and partial price liberalization. This phase also witnessed the privatization of some public enterprises but not the financial sector (Galal and El-Megharbel, 2005; Ali and Msadfa, 2016).

A new wave of reform was launched in 2004 with the aim of, among others, stabilizing the exchange rate, reducing and rationalizing the tariff structure, and employing more efforts to reform the business environment and promote the private sector. Nevertheless, the public sector remained a key actor and domestic industries continued to be protected through both relatively high tariff rates (e.g. in the textile and clothing and food industries) as well as the substantial energy subsidies which primarily benefit capital intensive sectors (Ali and Msadfa,



2016). Moreover, R&D spending remained at a low of 0.2 percent of GDP in both the 1990s and 2000s (Atiyas, 2015).

An Industrial Development Strategy was developed in 2005 with the goal of transforming the industrial sector into an engine of growth. The strategy takes a vertical approach to industrial policy, focusing on selected manufacturing sectors that the government should support, including engineering, food processing, chemicals & pharmaceuticals, textiles and clothing, building materials, furniture, paper & paperboard and leather. In fact, sectoral policies continued in Egypt throughout the last four decades, even during the more liberal policy framework of the 2000s (Atiyas, 2015). In an attempt to assess the outcomes of industrial policies in Egypt, Ali and Msadfa (2016) found that the country experienced a reallocation of labour from high productivity sectors to low productivity sectors during the period 1999-2008. This growth-reducing structural change could be the result of a combination of many factors, such as the exchange rate appreciation, over-dependence on commodity exports and inefficiency in the banking sector.

Indonesia

After a shift away from a closed economy and heavily interventionist policies to a more market oriented economy during the late 1960s until the Asian economic crisis of 1997, economic growth in Indonesia was very rapid, averaging 7% per year (Hofman et al., 2004). Preferential treatment for state enterprises was reduced. New investment laws provided the same incentives to domestic and foreign investors. Export and import procedures were simplified. Indonesia also moved to a unified, fully convertible fixed exchange rate, which gave a boost to exports and foreign direct investment. During the 1970s, Indonesia experienced a rapid growth of income due to an increase of oil production. Indonesia reverted to a public sector-dominated economic strategy emphasizing import substitution and public financing (Hofman et al. 2004). However, once the oil boom ended at the beginning of the 1980s, this strategy could not be sustained. A series of deregulation measures were introduced to improve the investment climate. Foreign and domestic direct investments started rising rapidly in the late 1980s. From the mid-1980s onwards, manufacturing has been the driving force behind economic growth. The importance of resource-based manufactures diminished in the 1980s and, by the early 1990s, they had been overtaken by low- and medium-technology manufactures (Kniivilä, 2007).

Overall, since late 1960s, the country moved from a predominantly agricultural production base to a more industrialized base. The industrial policy in Indonesia is then shaped by the 2008 National Industrial Policy and the Indonesian Master Plan for Acceleration and Expansion of Indonesia Economic Development launched in 2011 with a vision to become a strong industrialized nation by 2025 (Tijaja and Faisal, 2014). Today, the Master Plan of National Industry Development 2015-2035 serves as guidance for the government and industrial stakeholders in industrial planning and development for the next twenty years.

Kazakhstan

In its early years after independence in 1991, economic activities and investments in Kazakhstan were concentrated on the resource sector, with many large international firms operating in oil, gas and mining industries. This helped to stabilize the economy in the early years, but created problems later in the form of ‘Dutch disease’. There was a sharp decline in prices for the main export commodities of Kazakhstan after the Asian crises in 1996-97 and Russian crisis 1998. This situation demonstrated how vulnerable was the domestic economy, and spurred the government to seek a more sustainable model of economic development. In 1997, it announced the Strategy-2030 with the goal of entering into the list of 50 most developed countries of the world. The strategy established a framework for the development of industrial policy in Kazakhstan.

In order to ensure sustainable development of Kazakhstan through diversification and modernization of the economy, the government in 2003 launched the Strategy of Industrial and Innovation Development of Kazakhstan for 2003-2015 (SIID). This program included specific targets for agriculture, industry, transport, social welfare, health, education, and the public sector (Felipe and Rhee, 2013). It sought to increase the competitiveness of non-oil sector domestic companies in international markets through public-private efforts. The SIID set up relevant development institutions to support industrialization, including the Development Bank of Kazakhstan, Investment Fund of Kazakhstan and National Innovation Fund. This strategy required equal treatment of all sectors of the economy and no specific incentive mechanisms for the development of manufacturing sector. This in turn failed to offset the negative effects of the symptoms of the Dutch disease to the development of the manufacturing industry. The SIID proved to be an inefficient diversification policy for Kazakhstan (Konkakov and Kubayeva, 2016).

In response to that, the government decided in 2009 to launch the State Program of Accelerated Industrial-Innovative Development of Kazakhstan (SPAIID) for 2010-2014, which marks the transition to active industrial policy in Kazakhstan in order to reduce dependence on global commodity prices. To achieve this, financial and non-financial support tools were included in industry support measures within the SPAIID. The new strategy also aimed at advancing diversification through the development of sectors in four priority areas. It brought important results over first five years in terms of productivity, foreign investment and exports (Konkakov and Kubayeva, 2016).

Taking into account the experiences on the first-stage implementation of SPAIID, the second five-year program of the SPAIID for 2015-2019 focused only on the manufacturing sector and set real indicators of competitiveness of the manufacturing sector. With successful implementation of the strategy, economic diversification in Kazakhstan is expected to continue over the coming years.

Malaysia

Initially, from 1957 to 1969, the import substitution of consumer goods was attempted under the strong performance of primary commodity exports. However, the gap between the ethnic Chinese, who were rich and urban, and the ethnic Malays, who were poor



and rural, caused the racial riot of May 1969. In the 1970s, a clear policy shift was made from *laissez-faire* to ethnicity-based affirmative actions to ease social tension and secure national unity. The New Economic Policy (NEP) imposed comprehensive rules in allocating public positions, business management, workforce, and other incentives in favour of indigenous Malays (Bumiputra). Since 1972, Free Trade Zones (FTZ) were opened to attract export-oriented FDI in light manufacturing activities to expand employment opportunities following the identification of manufacturing as the engine of growth in the Second Malaysia Plan of 1971-75 (Rasiah, 2015).

After 1981 (under the leadership of Mahathir Mohamed), aggressive industrial policy was introduced. Since 1986, policy emphasis shifted back partly from social equity to wealth creation with more pro-market and outward-oriented measures. The Malaysian Government initiated Industrial Master Plans (IMPs) to support the development and transformation of the manufacturing sector. The First Industrial Master Plan (1986-1995) laid the foundation for the manufacturing sector to become the leading growth sector of the economy and promoted the processing of natural resources instead of exporting them in raw form. The Second Industrial Master Plan (1996-2005) contributed to the further development of the sector, by strengthening industrial linkages, increasing value-added activities and enhancing productivity (MITI, 2006).

The Third Industrial Master Plan (2006-2020) outlines the industrial strategies and policies which form part of the country's continuing efforts towards realising Malaysia's objective of becoming a fully developed nation by 2020, as stated in Vision 2020 of the country. The main objective of the IMP3 is to achieve global competitiveness through innovation and transformation of the manufacturing and services sectors. Emphasis is given to technological upgrading, attracting and generating quality investments, developing innovative and creative human capital, and integrating Malaysian industries and services into the regional and global networks and supply chains. Overall, with the effective formulation and implementation of industrial policies since the mid-1980s, the Malaysian economy has transformed from a commodity-based to a manufacturing-based economy.

Tunisia

In early 1970s, Tunisia adopted both import substitution and export promotion along with private sector development. There was a particular focus on manufacturing, especially of textiles. Firms that exported all of their products enjoyed duty-free raw materials and equipment imports and corporate tax holiday. Heavy industry, transport, water and electricity were still reserved for the public sector (AfDB, 2012). The policy framework of import protection started to change in the 1990s and the government started to reduce trade barriers.

Ali and Msadfa (2016) present that the industrial policy in Tunisia after 1996 can be assessed in three phases. The first phase (1996-2000) was for the consolidation of the physical and intangible investments of all firms. In the second phase (2000-2005) there was an effort to improve the business environment that supports industrial activities. The third phase, after

2005, was characterized by the promotion of certification and standardization of products and processes and promoting innovation and competitiveness.

However, it is shown that Tunisia's industrial policy was used as a vehicle for rent creation for the president and his family. Rijkers et al. (2014) found that firms linked to the President outperform their competitors in terms of employment, output, market share, and profits, as well as employment and profits growth, and sectors in which they are active are disproportionately subject to authorization requirements and FDI restrictions. The Tunisian experience thus demonstrates how interventionist industrial policy may become captured, and that the proliferation of regulation may be in fact be a consequence of corruption. As such, it cautions against overly optimistic embrace of highly interventionist policies, especially in contexts where checks and balances are limited (Rijkers et al., 2014).

Turkey

Industrial development strategy in Turkey during 1960-1980 was characterized by import substitution industrialization. There were special policies for investment promotion. Particularly after 1984, it shifted to more liberal and market oriented economic policies with reduced barriers to trade and capital flows. Trade barriers were reduced from around 76% in 1983 to 21% in 1994 (Özler and Yılmaz, 2009). During post 1980 period, it adopted selective promotion strategies for particular sectors and regions, which were regularly updated. There was also a strong focus on export promotion in the 1980s and early 1990s, with grants, export tax reductions, subsidized credits, preferential allocation of foreign exchange and duty-free imports, which are estimated to raise the exports around 15-25% (Arslan and van Wijnbergen, 1993). There were, however, widespread allegations of over-invoicing and corruption.

With the World Trade Organization (WTO) membership and customs union agreement with European Union (EU) in 1995, Turkey had to adapt to new economic environment. While WTO membership reduced the capacity to implement sector specific incentive programmes, customs union agreement required a number of harmonization in state aids. As a result, starting with 1995, industrial policy moved away from sectoral targeting and started to focus more on horizontal mechanisms such as support for research and development (R&D), environmental protection, and subsidy programs for SMEs (Atiyas and Bakış, 2016). The incentive system evolved further in the 2000s, where investments and employment were promoted at regional level in order to achieve regional development across the country. Investments in organized industrial zones were also more strongly supported.

In 2009, a new incentive scheme was introduced, which aimed, among others, at directing the savings toward the investments with high added value, encouraging largescale investments with high content of technology and R&D, increasing FDI, and supporting R&D activities regarding the conservation of the environment. New scheme differentiated incentives according to regions, sectors, and the size of investment. For example, while in the more-developed regions the emphasis was on high-technology industries, priority in the less-developed regions in the south and southeast was placed on agriculture, light manufacturing, tourism, health, and education. In 2012, new incentives for "strategic investments" were



introduced in order to overcome the excessive dependence on imported inputs of industry (Atiyas and Bakış, 2016).

Since 2003, Turkey has made significant progress with the development of key industries and growing trade and investment. Today, it is the 17th largest economy in the world and it aspires to reach \$500 billion in total exports and rank among the top ten economies by 2023. However, given the fact that there has not been a significant shift in the quality and technological sophistication of its exports over the last decade (Sak and İnan, 2015), it needs novel policies for structural transformation towards high technology manufacturing sectors to become more competitive and achieve these targets.

Short summary of some other experiences

Iran: Iranian economy, during a long period from 1979 to 2013, faced a revolution, a prolonged war, international sanctions, institutional disruptions, and contradictory shifts in economic policies (Zonooz, 2013). Under these circumstances, it failed to attain great economic and industrial performance. During 1978-1988, economic institutions were disrupted, private ownership was undermined, foreign investments were nationalized and economic planning was abandoned. Import substitution policies implemented before and after the revolution caused adverse effects such as unproductive rent seeking and technological lethargy. During 1989-2004, Iranian government revised its economic policies, and embarked on privatization, and market oriented reforms in foreign trade and FDI regimes. In the period 2005-2013, Iran benefited from oil price surges and achieved high growth rates.

Morocco: Morocco followed import substitution policies throughout the 1960s and 1970s. The trade regime started to be liberalized in the 1980s, which was paralleled by a number of free trade agreements and in particular an Association Agreement with the European Union signed in 1996 and implemented since 2000. In the 1990s the main focus was on privatization. This was a period of rapid decline of trade protection. The period between 2002 and 2007 was characterized by a multiplicity of investment promotion and tax exemptions schemes. The “Emergence Program” was launched in 2005 and updated in 2009 to become the National Pact for Industrial Emergence with the goal of increasing industrial GDP and creating additional jobs by 2015. Six economic sectors have been identified and supported due to their strong potential for growth: aeronautics, offshoring, food industry, textile, electronics and automobiles. The pharmaceutical and chemical and para-chemical sectors were added to the list in 2013 (Ali and Msadfa, 2016). Morocco’s Industrial Acceleration Plan 2014-2020 also focuses on similar industries, as they are considered to offer a high potential for Morocco to better integrate into global value chains, which aims to increase industry’s contribution to 23% of GDP. It has created a USD 2.2 billion fund to identify and fill in the financing gap in industrial development. The government also attracts FDI into supporting industries to gradually reduce manufacturing’s reliance on imported input goods and to acquire the knowledge and expertise that domestic companies need (El-Mokri, 2016).

Nigeria: Immediately after its political independence, Nigeria adopted the import substitution industrialization as a development strategy. The aim was to reduce the dependence on

imported consumer goods and create employment opportunities. In the early 1960s up to late 1970s, industrial policies in the country remained inward-looking. Nigerian Indigenisation Policy is adopted in 1972 with a desire to make Nigerians own and control the industrial enterprises in the country. To stimulate non-oil exports and promote investment and efficiency of Nigeria's industrial sector, the IMF engineered Structural Adjustment Policy was adopted with the declaration of the New Industrial policy 1989. In 2004, the Federal Government launched the National Economic Empowerment and Development Strategy, which identified the private sector as the engine of growth. In 2007, the government instituted the National Integrated Industrial Development blueprint, but it has not achieved much success.⁸

Saudi Arabia: The efforts exerted by the government for the support of industrial development covered several basic spheres including implementation of required infrastructure, construction of industrial cities in various regions of the Kingdom, establishment of Saudi Industrial Development Fund (SIDF), and continued provision of other industrial support and incentives. The Saudi industry has made significant progress that was clearly manifested in the growth of industrial investment since the establishment of SIDF. Providing modern industrial cities is an additional form of support by the government for the national industries. The Kingdom has constructed and developed several industrial cities in the various regions and provided them with all required services and utilities. To upgrade the quality of services provided by the industrial cities, the Saudi Industrial Property Authority (Modon) was established in 2001, as an independent public agency to supervise the establishment and management of industrial cities and technology zones, in addition to the operation, maintenance and development of these cities in collaboration with the private sector (SIDF, 2017). Despite the progress made in diversifying the economic structure, there is a need for improving manufacturing activities in different sectors in order to reduce the challenges posed by high reliance on oil industry.

United Arab Emirates: Supported with large windfall gains, the country introduced Dubai Plan 2021 to make Dubai “an international hub for knowledge-based, innovation and sustainable Industrial activities”, through enhancing industrial coherence and integration with other economic sectors particularly strategic ones, and to create an attractive investment environment through a set of initiatives and incentives. Six industrial subsectors will be targeted: Aerospace, Maritime, Pharmaceuticals & Medical Equipment, Aluminium & Fabricated Metals, Fast Moving Consumable Goods and Machinery & Equipment. It identifies 75 strategic initiatives to transform Dubai into an international hub for knowledge-based, innovation and sustainable Industrial activities (Dubai, 2016).

6.2 Selective Promotion of Industries

In order to improve the business environment and attain a structural transformation towards sectors with high growth potentials, governments adopt diverse policy interventions. These interventionist policies can be selective or functional industrial policies. Selective (or vertical) policies aim to attain structural transformation by targeting specific sectors, technologies or

⁸ <http://bit.ly/2eH7kS9>



tasks. These sectors are believed to promote productivity, job creation, technology transfer, export and growth. On the other hand, the goal of the functional (or horizontal) policies is to improve overall business and investment climate by supporting the operation of markets in general. Trade policies to encourage export, competition policies to facilitate the entry of innovative firms or exchange rate policies to secure competitive advantage in global markets for all exporting firms are some examples of functional policies. In this connection, this section focuses on selective promotion of industries and the next section deals with functional policy measures.

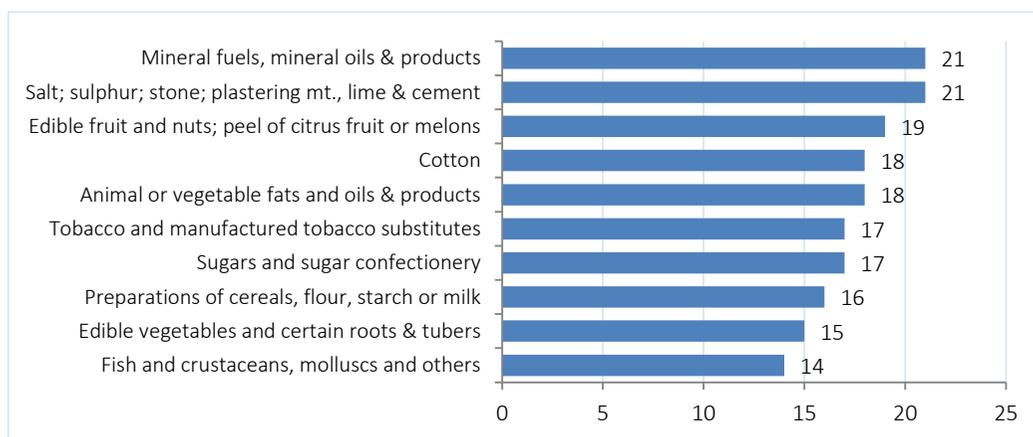
6.2.1 Profiling the Priority Sectors

There is an intense debate in the literature on the role of government in ‘picking’ or ‘creating’ winners. In case governments pick winners to achieve industrialization, it is commonly argued that this policy results in inefficiencies in the market without achieving the development goals. If governments opt to create an enabling environment where national champions arise by cost-discovery process, it is believed to be more successful in achieving the goals. In both cases, governments design their policies towards supporting certain sectors where they believe they will have comparative advantage and realize structural transformation.

There are contradicting views on whether industrial policy should conform to comparative advantage or defy it. Some argue that governments should promote the industries and sectors where they have comparative advantage until they build their capacity to target higher productivity industries. Otherwise, such efforts may result in wasting of already scarce resources and inefficiency without realizing additional competitive edge in the world markets.

Examples of these comparative advantage-defying strategies include Indonesia launching a ship construction industry in the 1960s, when its GDP per capita was only 10% of that of its main competitor at the time, the Netherlands. Another example is the attempt to build an auto industry in Turkey in the 1950s, when the country’s GDP per capita was 19% of the level in the industry leader, the United States (Lin and Treichel, 2014). These strategies may have failed at

Figure 6.1: Comparative Advantages of OIC Countries at Two-Digit Sectoral Level (2015)



Source: SESRIC staff calculation based on UN Comtrade Database.

that time, but these countries remain ambitious to become competitive in these sectors. The new Indonesian President Jokowi has declared his vision to make Indonesia the World's Maritime Axis and outlined an ambitious maritime doctrine to boost economic growth, although the shipbuilding industry is vastly dominated by China, Korea and Japan. Similarly, although Turkey is a major vehicle exporter today, it does not have a national car industry, for which it endeavours a lot.

Those who stand against a strategy that conform to comparative advantage argue that developing countries with labour and resource intensive industries have limited opportunity to compete in global markets and these industries offers limited prospects for economic growth due to few possibilities for learning and upgrading. In this regard, Chang (1994) argues that industrial policy is about building comparative advantages and creating entirely new sectors and industries, rather than following *static* comparative advantages. Therefore, industrial policy should support countries in discovering and realizing their *dynamic* comparative advantage.

A closer look at the existing patterns of comparative advantages in OIC countries reveals most of the OIC countries have comparative advantage at sectors and products that are less suitable for product development and diversification. By using the 2015 export data, out of 39 OIC countries for which detailed data are available, it is found that 21 OIC countries had comparative advantage in the sectors of mineral fuels and oils (HS Code 27) as well as salt, sulphur, stone etc. (HS Code 25). Other sectors where many OIC countries have comparative advantage include fruits, cotton, fats & oils, tobacco & products, sugar & confectionery, cereals, vegetables and fish (Figure 6.1).⁹ These sectors are largely agricultural, mineral and primary products with little processing and technological content, if any. At product level (HS 4 digit level), it is observed a similar pattern (Table 6.1).

Table 6.1: Comparative Advantages of OIC Countries at Four-Digit Product Level (2015)

HS Code	Number of OIC Countries	HS Code	Number of OIC Countries
4105	19	1515	14
2709	18	1701	14
1207	17	1902	14
0804	16	2104	14
2710	16	2402	14
0708	15	5201	14
2523	15	4819	13
3401	15	6305	13
4106	15	7108	13
1101	14	7214	13

Source: SESRIC staff calculations based on UN Comtrade Database. Product descriptions can be found at UNSTATS webpage: bit.ly/2eH7kS9

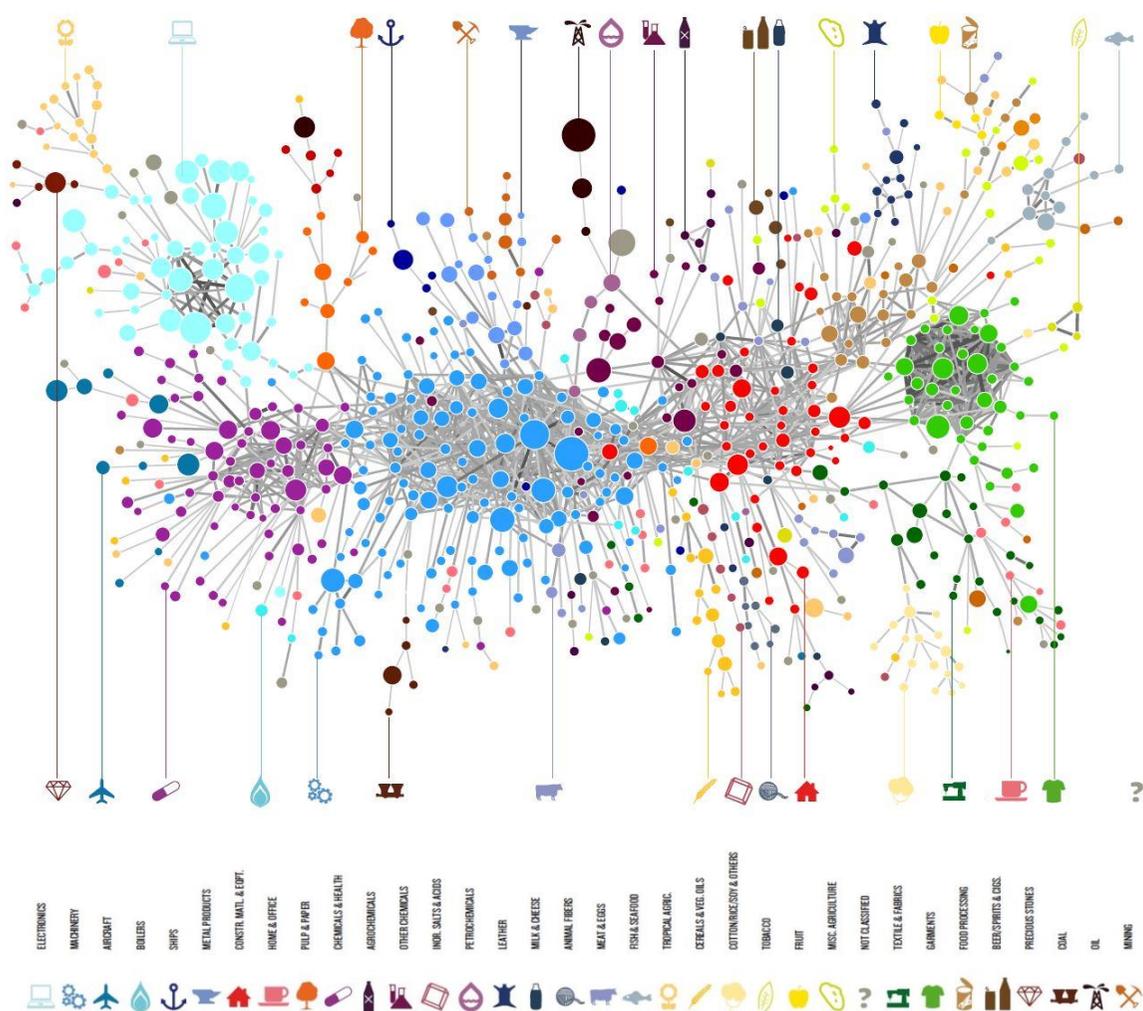
⁹ HS Codes of these sectors are 8, 52, 15, 24, 17, 19, 7 and 3, respectively. More detailed descriptions can be found at UNSTATS webpage: bit.ly/2eH7kS9.



This quick experiment clearly demonstrates that it would be not an ideal strategy for OIC countries to design a strategy that purely relies on existing comparative advantages. They are not offering enough room to scale of technological capacities and achieve long term productivity growth and competitiveness by producing more sophisticated products.

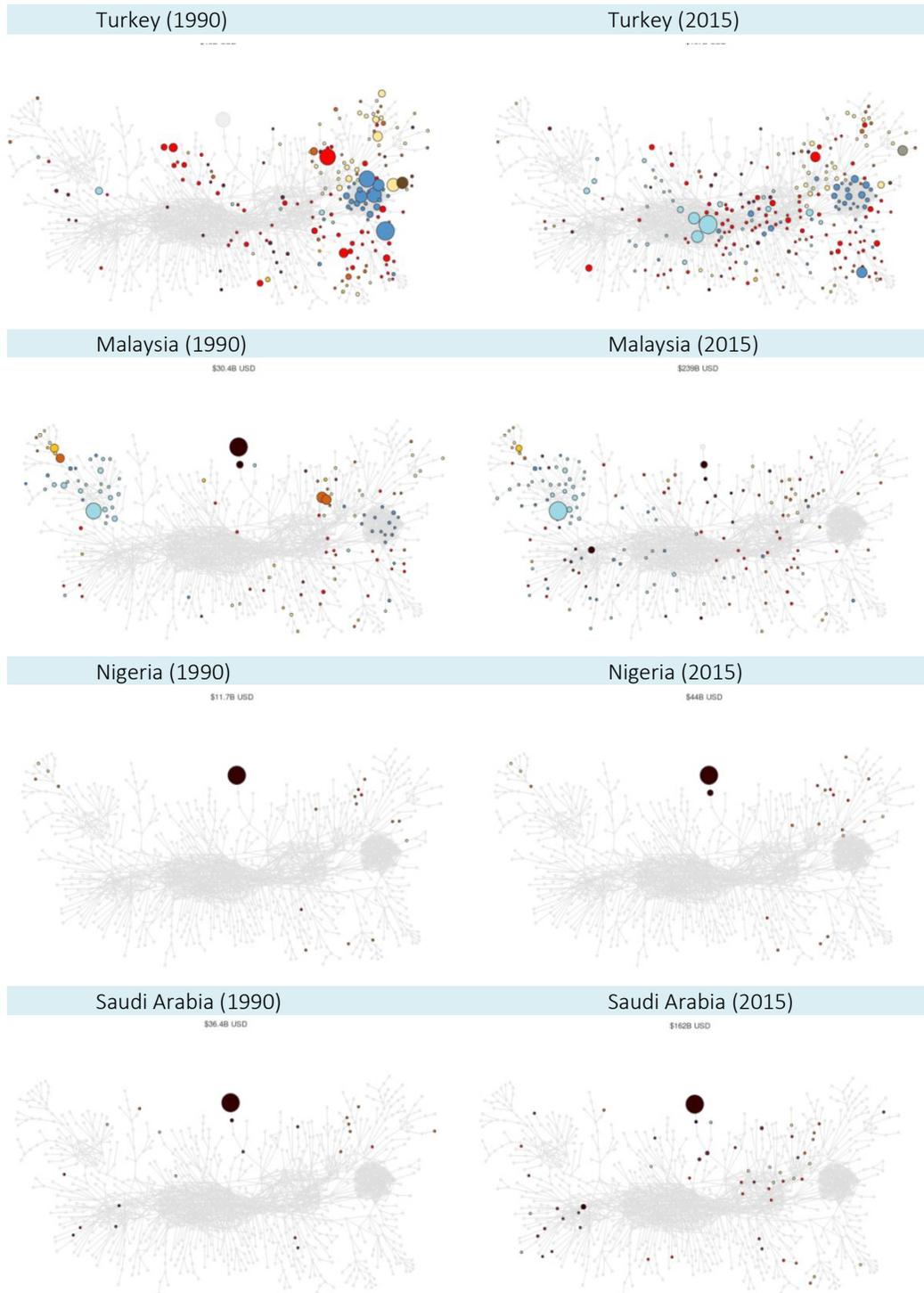
A recently developed tool that can be used for the identification of priority sectors is the product space approach. The theory of product space (or product-relatedness) is an application of network theory, depicting the network of connecting products that tend to be co-exported. Relatedness is associated with the similarity in the inputs required by a certain activity including everything from particular skills, institutional and infrastructural requirements, technological similarity and the like. The product space shows all products exported and how 'close' they are with each other (Figure 6.2).

Figure 6.2: The Product Space



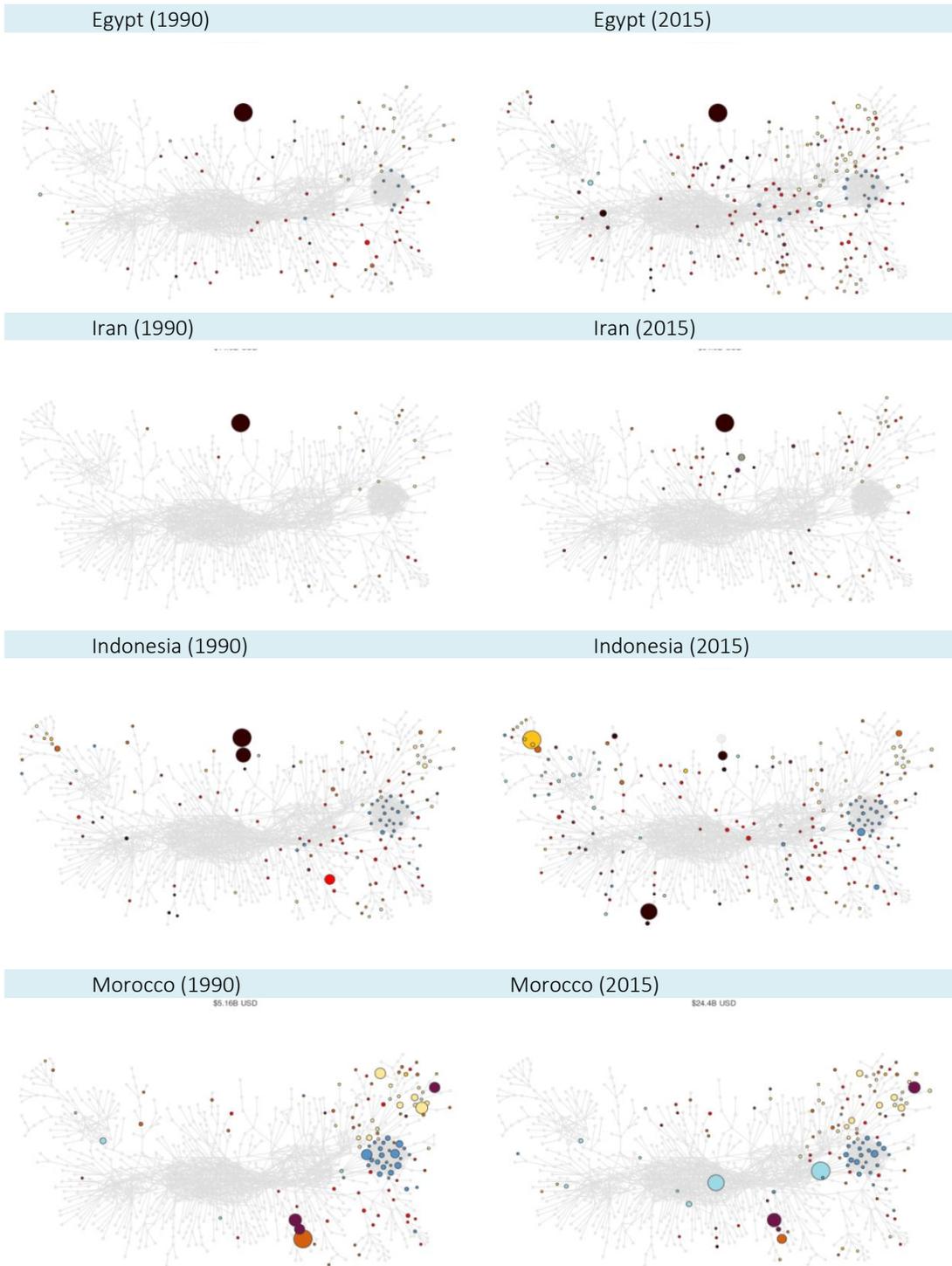
Source: The Atlas of Economic Complexity, Harvard University. Note: The Figure shows a visualization of the product space constructed using international trade data for the years 2006-2008.

Figure 6.3: Economic Complexity of Selected OIC Countries (1990 vs 2015)



Source: The Atlas of Economic Complexity, Harvard University. Note: Figures include only the sectors where countries have comparative advantage (RCA>1). Bubble sizes reflect the relative size of country exports.

Figure 6.4: Economic Complexity of Selected OIC Countries (1990 vs 2015)



Source: The Atlas of Economic Complexity, Harvard University. Note: Figures include only the sectors where countries have comparative advantage (RCA>1). Bubble sizes reflect the relative size of country exports.

Figures 6.3 and 6.4 present the economic complexity of selected OIC countries based on the product space approach for the years 1990 and 2015. They show only the sectors where the respected country has comparative advantage and the size of the bubbles reflects the relative volume of exports in that sector. Although all countries achieved some level of diversification over the last 25 years, significant reliance on single products/sectors remain a major issue for many countries. Among these countries, Turkey appears to have the most sophisticated economy, while Egypt, Morocco, Indonesia and Malaysia have relatively lesser diversified economic structure. On the other hand, economic activities appear to remain highly concentrated in Nigeria, Saudi Arabia and Iran.

Economic development is a dynamic process, which requires governments to play a proactive and facilitating role in achieving structural transformation. It is important to identify the potential areas where countries can be productive and competitive with right investments in capacities and interventions. They must intervene to allow markets to function properly by providing information about new industries in which achieving productivity growth and competitiveness is attainable with the country's existing resources and capabilities. Governments should also invest in improving existing human capital and physical infrastructure and coordinate investments by private sector to support the activities in new industries. Next subsection will discuss strategic instruments that governments may utilize in promoting industrial development.

6.2.2 Identifying the Strategic Instruments

Based on empirical findings, Weiss (2015) categorize the process of industrialization into three stages. Within each stage there is a choice between general horizontal measures available to all firms and selective vertical ones applied selectively to priority targets. Table 6.2 shows the objectives in each stage of industrial development. Broadly, the first stage is characterized by the transfer of low skilled workers out of agriculture into relatively less sophisticated labour-intensive activities using relatively simple technologies. In the second stage, the aim is to shift into stimulating a specialization in product lines which are relatively new to the economy and involves more sophisticated technologies. The late stage of industrialization is principally about supporting the development of activities using frontier technologies and infrastructure to develop new technologies and products.

There are five dimensions of industrial policy. These are related to the product market, labour market, capital market, land market, and technology (Weiss, 2015). Instruments are further categorized into market based instruments and public inputs. Market-based interventions impact on prices and taxes and thus operate through pricing links. Public inputs reflect the provision of goods or services, which firms themselves would not supply adequately. Table 6.3 shows the policy instruments available to low income (early stage) and middle income countries (middle stage).



Table 6.2: Objectives of industrial policies at different stages of development

Early Stage	Middle Stage	Late Stage
Diversification of exports away from primary goods into simple manufactures	Promotion of higher value-added medium and high technology products	Public-private R&D activity and support for research consortia (possibly combined with public procurement policy)
Processing (or 'beneficiation') of natural resources into resource-based manufactures	Development of local adaptations to foreign technology	Venture capital for high technology investments
Attraction of FDI to generate technology, management or marketing links	Upgrading of local firms within global value chains	Higher education investment in applied science-based subjects
Encouraging new start-up firms.	Establishment of international marketing links to develop own brand products	General educational improvements
	Integration of environmental policy as an aspect of IP.	Funding for enterprise restructuring
		Retraining for workers.

Source: Compiled from Weiss (2015).

In the product market domain, import tariffs and export subsidies have been among the most important instruments used in many countries, particularly in East Asia and Latin America. While not completely prohibited under the new global trading regime, the use of these instruments is largely restricted or discouraged (see section 6.3.1). In the capital market domain, directed credits and interest rate subsidies as well as development banks played a key role in the industrialization strategy of some newly industrialized economies in East Asia (UNCTAD, 2016b). In the labour market domain, policies are implemented to upgrade the skills level of the labour force and to support employment of people in more productive sectors.

In the land market domain, export processing zones (EPZs) and special economic zones (SEZs) are among the most popular instruments in developing countries to attract foreign investment through provision of high quality infrastructure and various tax incentives. In the domain of technology, industrial policy instruments aim to facilitate the absorption of foreign knowledge by supporting technology transfer and extension programmes.

As countries grow, the state institutions become more technically and administratively capable and private sector accumulate knowledge and capabilities, which allows governments to offer a number of incentives to upgrade their industrial strategies and sustain industrialization and development. According to Weiss (2015), new instruments become available mainly in the capital markets and technology domain, such as loan guarantees, R&D subsidies and grants.

Table 6.3: Industrial policy instruments in low and middle income countries

Policy domain	Early Stage		Middle Stage	
	Market-based	Public goods/direct provision	Market-based	Public goods/direct provision
Product market	Import tariffs, export subsidies, duty drawbacks, tax credits, investment/FDI incentives	Procurement policy, export market information/ trade fairs, linkage programmes, FDI country marketing, one-stop shops, investment promotion agencies	Import tariffs, duty drawbacks, tax credits, investment/FDI incentives	Procurement policy, export market information/trade fairs, linkage programmes, FDI country marketing, one-stop shops, investment promotion agencies
Labour market	Wage tax credits / subsidies, training grants	Training institutes, skills, councils	Wage tax credits / subsidies, training grants	Training institutes, skills, councils
Capital market	Directed credit, interest rate subsidies	Loan guarantees, development bank lending	Interest rate subsidies, loan guarantees	Financial regulation, development bank (first/second tier) lending, venture capital
Land market	Subsidized rental	EPZs/SEZs, factory shells, infrastructure, legislative change, incubator programmes	Subsidized rental	EPZs/SEZs, factory shells, infrastructure, legislative change, incubator programmes
Technology		Technology transfer support, technology extension programmes	R&D subsidies, grants	Public-private research consortia, public research institutes, technology transfer support, technology extension programmes

Source: Compiled from Weiss (2015).

Felipe and Ree (2015) broadly classify the instruments available to developing and developed economies into eight categories: (1) fiscal incentives, (2) investment attraction programs, (3) training policies, (4) infrastructure support, (5) trade measures, (6) public procurement, (7) financial mechanisms, and (8) industrial restructuring schemes. Fiscal incentives include instruments such as preferential tax credits, export credits and tax holidays. Fiscal incentives (tax holidays for firms with pioneer status and special zones with duty free imports) were used in Malaysia to attract FDI for promoted sectors and to meet specific objectives. Similarly, to attract foreign investments, Malaysia created technology parks as part of its Multimedia Super Corridor (Felipe and Ree, 2015).

Today, perhaps all OIC countries have a medium term economic development programme with special emphasis on economic diversification and industrial development. For example, a number of OIC countries in Africa have embarked on efforts to identify strategic sectors and design industrial policy measures accordingly (Table 6.4). In its Vision 2020, Nigeria has identified a number of priority sectors, and has launched programmes to promote growth in these areas, including in specific regions. Also, Côte d'Ivoire underlines the need to identify strategic sectors in the agro-processing and manufacturing areas in its National Development



Plan. These countries are generally working with the World Bank, UNIDO and other relevant international organizations to develop and implement a growth strategy built on their latent comparative advantage (Lin and Trechel, 2014). In general, before designing industrial policies, it is important to have a realistic approach in identifying the priorities and instruments for economic diversification and sectoral competitiveness.

Table 6.4: National industrialisation strategies in Africa

Country	National strategy	Timeframe
Algeria	New Economic Growth Model	2016-20
Cameroon	Plan directeur d'industrialisation, within Vision 2035	2010-35
Côte d'Ivoire	National Development Plan	2016-20
Egypt	Industrial Development Strategy	2010-25
Gabon	Stratégie Nationale d'Industrialisation, within the Plan Stratégique Gabon émergent	2013-25
Mauritania	Stratégie pour le développement du secteur industriel en Mauritanie	2015-19
Morocco	Industrial Acceleration Plan	2014-20
Mozambique	National Development Plan	2013-33
Nigeria	Nigeria Industrial Revolution Plan	2014-19
Senegal	Accelerated Growth Strategy	2005
Tunisia	National Industrial Strategy	2011-16
Uganda	Integrated Industrial Policy for Sustainable Industrial Development and Competitiveness	

Source: AfDB, OECD, UNDP (2017).

6.2.3 Designing Policy Tools

Economic history shows that there are plenty of policy experiences towards achieving industrialization and they do not offer a set of procedures to be followed in designing and implementing an industrial policy. Successful as well as failed cases are to be explained largely by unique characteristics of national, institutional and other aspects. Although there is not a simple formula of effective industrial policy development, there are a lot of experiences from which to benefit in designing policies in national contexts. In this regard, the economic literature provides some general guidelines on how to effectively design, coordinate and implement industrial policy based on the existing evidence.

A framework suggested by Lin (2012a), the Growth Identification and Facilitation Framework (GIFF), can be useful for policymakers in developing countries in designing the industrial policies. The framework described in six steps and it provides guidance on how to identify industries with latent (or potential) comparative advantages and facilitate competitive private sector development. These steps are as follows:

Step 1: Choose the right target: Policymakers should identify tradable goods and services that have been growing dynamically for about 20 years in fast-growing countries with similar

endowment structures and a GDP per capita about twice as high as that of the developing country.

Step 2: Remove binding constraints: This is to give priority to some domestic private firms that have already entered spontaneously to the identified sectors, and remove constraints to quality upgrading and facilitate firm entry.

Step 3: Attract global investors: This is to encourage firms in higher income countries to invest in sectors identified in step 1, if these industries are completely new to domestic firms. The government may also set up incubation programmes to catalyse the entry of domestic private firms into these industries.

Step 4: Scale up self-discoveries: This is to promote spontaneous self-discovery process by private enterprises and give support to scale up successful private innovations in new industries with a view to seizing new opportunities with their unique endowments.

Step 5: Recognize the power of industrial parks: This is to promote special economic zones or industrial parks in countries with poor infrastructure and less attractive business environments so that to attract domestic private firms and/or foreign firms that may be willing to invest in the targeted industries and encourage industrial clusters.

Step 6: Provide limited incentives to the right industries: This is to provide limited incentives (such as tax incentives and direct credits for investments) to domestic pioneer firms or foreign investors that work within the list of industries identified in step 1 in order to compensate for the non-rival public knowledge created by their investments.

This framework would be suitable for OIC countries, because it does not advice sticking on static comparative advantages and also does not advocate for new adventures into unknowns. This is also in line with the product space theory discussed in the previous subsection: given the existing resources, capabilities and experiences, countries should invest in sectors where they are more likely to succeed.

Whatever strategy is adopted, implementation process should be carefully managed. A common issue is that industrial policies are too easily captured by politically powerful groups who then manipulate it for their own purposes rather than for structural transformation. There is considerable evidence that certain sectors in Tunisia—banking, telecommunications, and transport—received protection from domestic and foreign competition because the former President Ben Ali's family had business interests in these sectors. The 'Ben Ali firms,' which accounted for 1% of private-sector output and 3% of employment, had 21% of the profits in the economy. The monopoly power granted to these sectors raised prices to the point that Tunisia's exporting sector was no longer competitive (Devarajan, 2016).

In this context, Rodrik (2008a) argues that industrial policy must possess three key design attributes: embeddedness, carrots-and-sticks and accountability. Embeddedness concerns how close state-business relations should be. It should be a strategic collaboration and coordination between the private sector and the government with the aim of uncovering where the most



significant bottlenecks are, designing the most effective interventions, periodically evaluating the outcomes, and learning from the mistakes being made in the process.

The expression ‘carrots and sticks’ refers to the combination of incentives (carrots) and discipline (sticks) that industrial policy should seek. As observed in some successful cases, while tax incentives (Taiwan) and credit subsidies (Korea) were generous, they were conditioned on performance, and especially on export performance. Firms were penalized by withdrawal of subsidies and in other ways if they do not abide the ‘rules of the game’. This is also to reduce the chances of rent-seeking and corruption. Therefore, an industrial policy should encourage investments in non-traditional areas, but also discard projects and investments that fail. Finally, accountability refers to the need to monitor bureaucrats and hold them responsible for how they spend public money. This is to ensure transparency on how decisions are made in this domain and why certain activities or firms are favoured.

Empirically, it has been very difficult to demonstrate that under which conditions industrial policy actually works in practice. Therefore, the frameworks suggested by Lin (2012a) and Rodrik (2008a) provide important elements on how to design industrial policies and reduce the risks of failure. Otherwise, industrial policy will be only an invitation to corruption and rent-seeking, and result in a transfer income to politically connected groups.

6.2.4 Integration into Global Value Chains

Over the last several decades, the world economy witnessed a shift in how production processes were structured. Geographically dispersed economic activities increasingly organized in complex transnational production networks, which is now known as global value chains (GVCs). GVCs link the different value-added stages required to bring a product from conception and design to the final consumer and to its disposal (Kaplinsky, 2013). Therefore, GVCs can help OIC countries to set up the type of new and more productive activities that are behind structural transformation. At the firm level, it will facilitate to move up the value chain into higher value added activities and enhance productivity and competitiveness.

GVCs are an important feature in today’s global economy. Increasing importance of regional and global trade and production networks open new potential opportunities for industrialization in developing countries. Although such value chains are not a new feature of the global economy, their importance is reflected in the large volume of trade in intermediate goods, which amounted to 46% of total merchandise trade in 2014 (UNCTAD, 2016a).

Participation to GVCs will facilitate the transfer of capital, technologies and know-how. It will help developing countries to enter sophisticated industries without having the domestic capacity to perform all major production steps of complex manufactured products. The experiences of the East Asian countries, especially China and Singapore, show how GVC participation can bring great benefits. For instance, China integrated into GVCs by specialising in the activities of final product assembly and was capable of upgrading its participation by building a competitive supply base of intermediate goods and by enhancing the quality of its exports (UNECA, 2013). However, the presence of high-tech goods in a country’s export basket

does not imply the presence of advanced industrial capabilities, but merely the presence of the respective assembly operation in that country.

In recent years, production networks have evolved to encompass multiple countries involved in different stages of the assembly process and with proliferating South-South linkages (UNCTAD, 2015a). This offers also opportunities for intra-OIC economic cooperation. OIC countries can engage in the production of more sophisticated complex manufactured products by utilizing the capacities of different country in the region. This will require effective coordination among the governments as well as private sector. Effective participation in GVCs will also require investments in sector specific skills and human capital as well as infrastructure, financial services and an investment-friendly policy framework.

Finally, it should be emphasized that not every activity in GVCs contributes to the industrial development and structural transformation. For example, call-centres and other service activities that India has come to specialise are low-skill-based and haven't brought about much technological upgrading (Milberg et al., 2014). Assembly manufacturing brought about large benefits in Korea, Taiwan and Singapore, because they used it as a basis for building higher-level productive capabilities in achieving ambitious industrial policy strategies (UNECA, 2016). Malaysia has not been able to use its GVC participation for upgrading productive capability (as much as these countries have done) and remained in a middle-income trap (Cherif and Hasanov, 2015).

6.3 Expanding Policy Space for International Competitiveness

In addition to policies that favour specific industries and firms, there are also industrial policy measures that are generic to most of the sectors and firms in the national economy and there is no special treatment at sector or firm level. Such 'horizontal' policies do not discriminate across sectors and addresses some common issues in promoting industrial development. However, even these instruments intrinsically involve favouring some sectors or firms over others. For example, R&D subsidies and protection of intellectual property rights support firms that have more capacity to innovate and exchange rate policies typically favour tradable activities at the expense of nontradable ones. With this understanding, this section concentrates on three key horizontal policy dimensions in promoting the industrial development: trade, competition and exchange rate policies.

6.3.1 Trade Policy

Trade policy measures, including import substitution and export subsidies, were among the most widely used industrial development policies before the formation of the World Trade Organisation (WTO) in 1995.¹⁰ However, the WTO disapproves any government interventions against free trade. In terms of tariffs, WTO membership requires member countries to bind

¹⁰ This section greatly benefits from UNECA (2016), which provides more detailed information on trade policy options in promoting industrial development.



their tariffs at a certain level beyond which it cannot be increased.¹¹ Actually applied tariffs can be anywhere between zero and the bound limit. Today, most developing countries have already bound their tariffs on many sectors and are constantly under pressure to bind the remaining ones. Average tariff rates are already at historically low levels. Moreover, developing countries were forced to reduce their applied tariffs as part of various reform programmes introduced by international institutions such as the World Bank and IMF.

Nowadays, trade policy instruments appear to be limited in promoting industrial development. However, when today's industrialized countries were at similar income levels of developing countries, they were benefiting from various trade policy instruments. For example, towards the end of the 19th century when the United States was trying to catch up with Britain by way of infant industry protection, its average applied tariffs on manufactured imports were close to 50%, which is today less than 20% in developing countries (UNECA, 2016).

Similar to tariffs, subsidies are generally considered by the WTO as trade-distorting measures that give the subsidising country unfair price advantages in a free trade environment. Therefore, sector specific subsidies for export promotion and enforcing the use of local content in manufacturing are prohibited. There are some exceptions for least developed countries (LDCs) in certain policy aspects, such as export subsidies (which is illegal for other countries). Export taxes are also permitted for developing countries. Moreover, subsidies for R&D, upgrading of disadvantaged regions in the country and for developing environmentally friendly technology can be used more actively (UNECA, 2016).

Despite the limited policy options faced by developing countries due to multilateral agreements, there are still a number of industrial policy measures which can be used legally. UNECA (2016) provides a list of policy measures that are not directly prohibited by WTO agreements. These are:

- Targeted infrastructural investments;
- Targeted and/or subsidised investments in skills development;
- Strategic government-mediated mergers of local firms in fragmented industries (e.g., through special loans from government-owned banks, equity injection by development banks or sovereign wealth funds), to achieve scale economy and reduce 'wasteful competition';
- Tax benefits to encourage investments, such as exemption of corporate income tax for a fixed period, accelerated depreciation allowances;
- The encouragement of industry-university links through non-subsidy measures (e.g., creating a forum for dialogue, reducing legal barriers to university-industry collaboration, re-prioritising and re-channelling of government research funding to targeted areas);

¹¹ A way of increasing bound tariffs is to resort to the so-called 'Government Assistance to Economic Development' provisions under GATT Article XVIII, which allow developing countries to raise their tariffs "to promote the establishment of a particular industry" if they are faced with "low standards of living" and "are in the early stages of development". This also requires a lengthy procedure involving notification to the WTO, negotiations with countries having a substantial interest, compensating them by way of other tariff reductions and approval of WTO members (UNECA, 2016).

- The establishment of government-funded R&D centres, to transfer technologies to private sector firms, especially SMEs, at lower but technically non-subsidised prices;
- Exemption of SMEs from certain anti-trust laws, so that they can cooperate more in areas like R&D and export marketing;
- Government procurement (e.g., US defence, Finland telecommunications, Japan mainframe computer industry);
- Use of SOEs to start and/or develop ‘infant industries’ that the private sector is not willing to engage in;
- Worker training requirements for large firms;
- Export taxes to restrict the export of certain products (e.g. to prevent the export of raw materials and encourage that of more value-added products in the chain).

An important policy instrument that is widely used is the local content requirement. Global trade is evolving towards trade in components due to falling trade costs and advancements in communication and information technology. This is largely dominated by transnational corporations and international production networks to benefit from low labour and production costs in different regions. In this new environment, raising domestic content requirement may give countries a chance to manufacture technology intensive parts and components, which is fundamental for industrial upgrading.

6.3.2 Competition Policy

Competition policy refers to government policy to preserve or promote competition among market players and to promote other government policies and processes that enable a competitive environment to develop (UNCTAD, 2009). Competition law and competition advocacy are the two major instruments of competition policy. The competition law contains rules to restrict anti-competitive practices as well as an enforcement mechanism. Competition advocacy is particularly important for industrial policy, which can be used to promote less anti-competitive means of achieving other policies’ goals. Objectives of competition policy include encouraging the process of competition in order to ensure efficient use of resources, promotion of SMEs, restriction of undue concentration of economic power and ensuring fair competition, thereby promoting economic development.

As discussed in Section 5, industrial policies had a more protectionist nature before the 1980s, driven mainly by import substitution industrialization or export-led growth models. In the 1980s, international markets increasingly opened up to competition with deregulation and trade liberalization, as advocated by major international institutions. After the 1980s, industrial policy evolved towards the promotion of exports through EPZs and FDI. Competition law and policy were increasingly supported and recognized by policymakers, and become an important policy in many countries after 1990s.

An effective competition policy is a must for attracting foreign investors. However, some elements of industrial policy typically provide some firms or sectors with privileges that help them to grow faster than the rest of the economic players. Therefore, competition policy in many cases appears to be contradicting with industrial policy. Cartelization is one area where



industrial policy measures collide with competition policy. In various stages of development, some countries supported cooperation and merger among their infant industries in order to help increase their international competitiveness. However, the lack of exposure to competition at domestic markets makes it difficult for these firms to compete in international markets. Figure 6.5 shows that intensity of local competition in developing countries is rising over the years, but a higher improvement is observed in non-OIC developing countries compared to OIC countries.

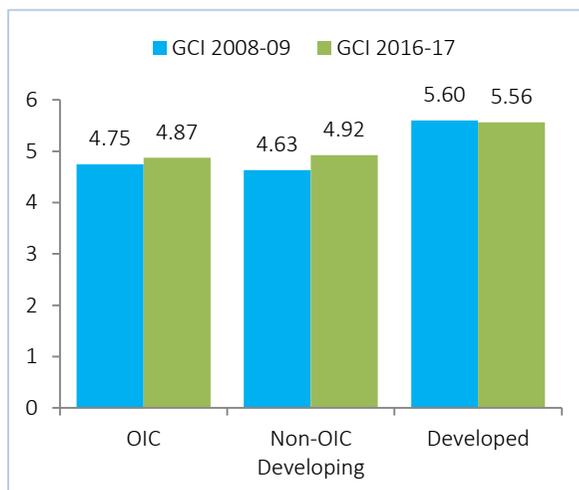
Although competition policy and industrial policy have conflicting nature in many instances, an effective industrial policy requires competitive markets. Competition law and policy aim to ensure that

domestic firms are not subjected to anti-competitive practices from foreign or domestic firms. Otherwise, it will be also challenging to attract foreign investors, who may be critical in transferring the most needed technology, know-how and finance. If competition in input markets is distorted, this may increase production costs and reduce export competitiveness (UNCTAD, 2009). On the other hand, competition and industrial policies may be harmonious. For example, while the promotion of SMEs is part of industrial policy in many countries, competition laws usually have provisions supporting the participation of SMEs in the economy.

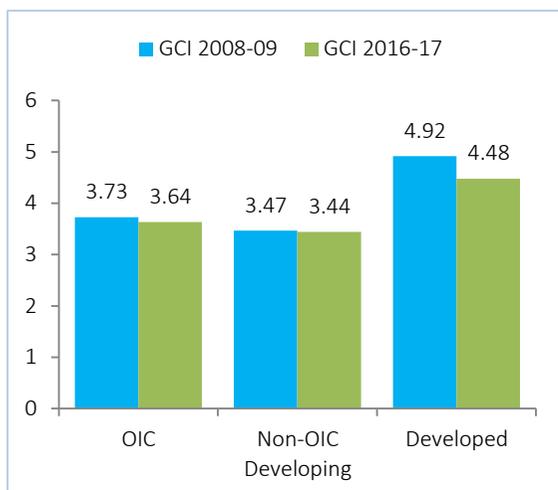
In general, selective industrial policy is at odds with competitive policy, while functional industrial policy instruments are more likely to complement with competition policy. In fact, if adequately designed, competition policy can be an instrument of functional industrial policy that aims to promote productivity, efficiency and competitiveness of overall economic activities. In this respect, the Finnish case offers many lessons for a pro-competition industrial policy. In 1990s, Finland adopted an industrial strategy towards developing and promoting a national innovation system through industrial clusters to benefit from knowledge spillovers. Aim of this strategy was to achieve industrial growth through promoting competition and networking among firms, universities and research institutes (for more information, see Dahlman et al., 2006).

Competition authorities can facilitate entry in sectors previously dominated by a small number of firms having a lot of market power. This is also to facilitate the cost-discovery approach in industrial development. Competition can affect firms' efficiency by altering the incentives to innovate. For example, a comparison of the export performance of various Japanese industries

Figure 6.5: Intensity of Local Competition



Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = not intense at all; 7 = extremely intense.

Figure 6.6: Extent of Market Dominance

Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = dominated by a few business groups; 7 = spread among many firms.

in the 1980s reveals that the sectors in which domestic competition was more intense exported more than those in which competition was more muted (Sakakibara and Porter, 2001). Figure 6.6 shows that all country groups, more or less, experienced a reduction in the average market domination by few business groups.

Industrial policy and competition policy clearly have different means and perspectives for achieving the goal of increasing wealth and prosperity. In this connection, it can be argued that industrial policy should not favour incumbents but rather promote entry into markets for facilitating the discovery of productive advantages. It should not

pick winners or reward the losers, but create conditions for innovation to take place (OECD, 2009). Industrial policy should not create economic goliaths that end up having no incentive to innovate or to initiate the necessary structural changes. Therefore, a well-designed industrial policy should be complemented with supportive competition policies.

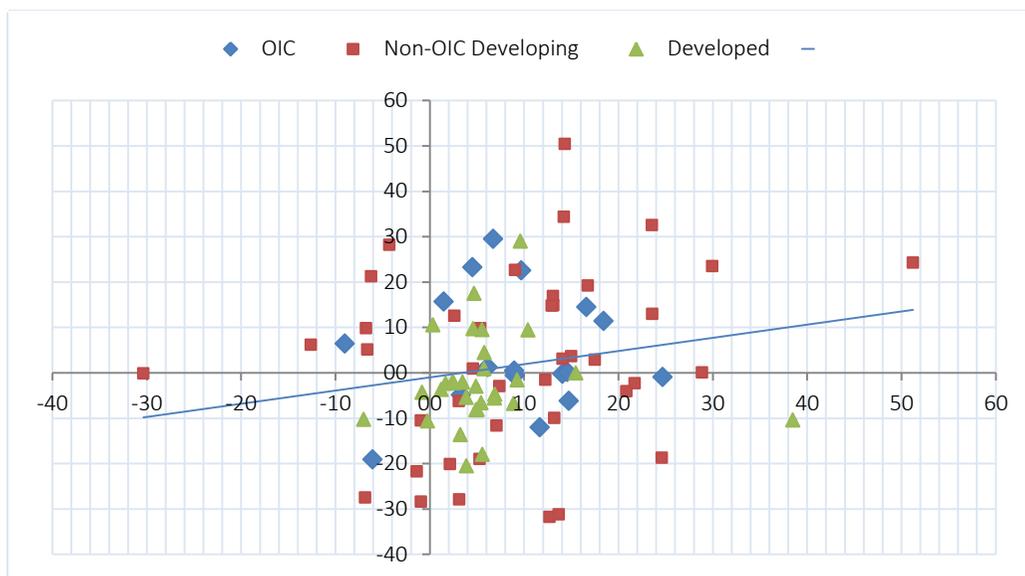
6.3.3 Exchange Rate Policy

Primary commodity exporting countries face a problem of non-competitive exchange rates that erodes the development prospects of other tradable sectors and hence economic diversification. The lack of diversification then aggravates the problems of dependence on the terms of trade and leads to high macroeconomic volatility and vulnerability, which is also known as the resource curse (Guzman et al. 2016). In this regards, towards the achieving the goal of industrial development, exchange rate policies can be a critical instrument in transforming the economies by supporting the sectors that are more conducive to learning.

The real exchange rate (RER) is the price of foreign goods in terms of domestic goods. A competitive exchange rate is crucial for new sectors, as 'infant industries' must go through a learning process to become competitive. There are a variety of historical experiences that support the claim that competitive RER policies are good for economic development, as demonstrated by a number of Asian economies (Rodrik, 2008b). Therefore, a high RER, or a depreciated domestic currency, implies more competitiveness for domestic industries. Figure 6.7 also shows that labour productivity growth during 2010-2016 is positively associated with real effective exchange rate depreciation in a sample of 89 countries for which data are available.



Figure 6.7: Labour Productivity Growth vs Real Effective Exchange Rate Depreciation (2010-2016)

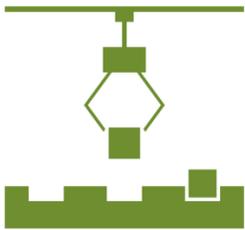


Source: SESRIC staff calculations based on World Bank WDI and ILO KILM databases.

The RER affects the productivity growth, which in turn supports structural transformation and economic growth. Astorga et al. (2015) provides two reasons for this relationship. Due to high reliance on imported capital goods in total investment, a lower RER would reduce the prices and foster the replacement of old equipment. Moreover, it intensifies competitive pressures in both domestic and foreign markets as foreign goods become cheaper and domestic firms are not protected by a high RER. Although the RER is not fully controlled by the government, it is assumed that macro policies do have an influence on this variable (Astorga et al., 2015).

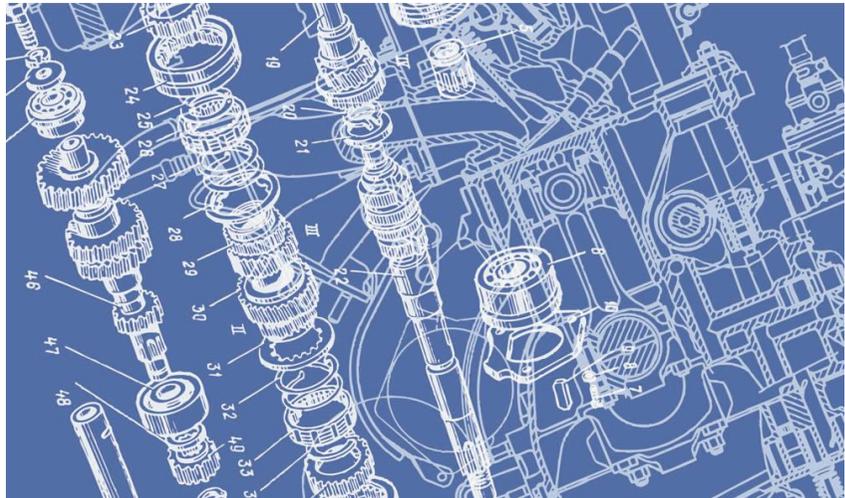
Exchange rate policy should depend on the policies that promote the development of strategic sectors. An increase in the RER allows domestic firms to flourish and compete in new sectors by providing them price advantages in international markets, and thereby promotes export diversification. If industries heavily rely on imported goods for production, a low RER would be a suitable strategy to support new industries in obtaining foreign technology and capital goods at lower prices, if there is a high dependency on them. Therefore, it is critical that exchange rate policy is well connected with the industrial development policy objectives.

In the absence or weak formation of industrial policies, a low RER, or a appreciated domestic currency, will result in a loss of competitiveness for more technology-intensive sectors and a shift of employment to lower productivity sectors. On the other hand, a competitive exchange rate and an active industrial policy will favour economic diversification and productivity growth (Astorga et al., 2015).



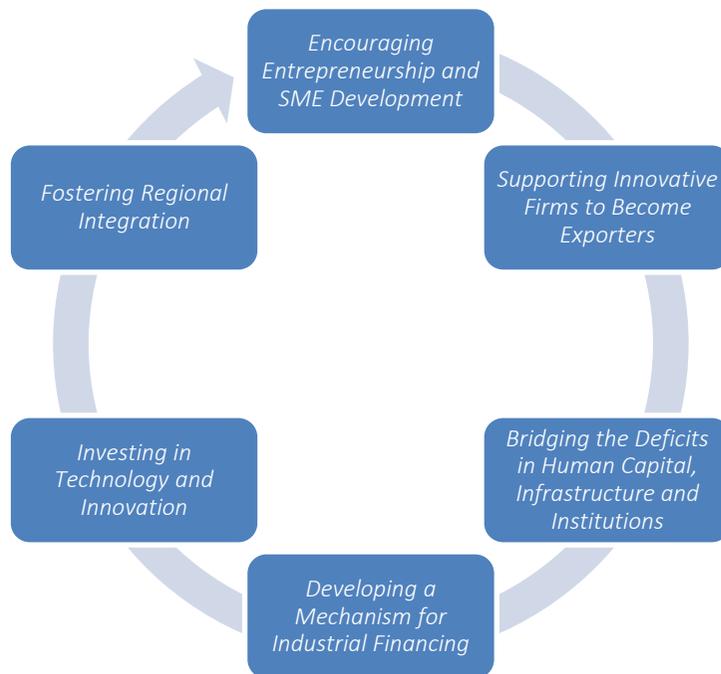
CHAPTER SEVEN

Policy Measures for Accelerating Industrial Development



Industrial development requires inclusive strategies that bring in all potential actors who can contribute to the development process. Starting from individuals to finance institutions, probably most segments of a society can be supportive part of this process. However, in all cases, governments will have facilitator role, because they will have the oversight on capacities, resources and requirements for successful transformation. They will have the power to incentivize people to engage in entrepreneurial activity, innovative SMEs to enter foreign markets, identify the gaps in human capital, infrastructure and institutions and bridge those gaps, establish special finance institutions and financial mechanisms to finance industrial development projects, build the technology and innovation capacity of their countries and engage in regional partnership to make use of potentials of greater markets (Figure 7.1). In line with this understanding, this section discusses some policy measures for how to achieve an inclusive industrial development with the facilitating role of governments.

Figure 7.1: Policy Measures for Accelerating Industrial Development



7.1 Encouraging Entrepreneurship and SME Development

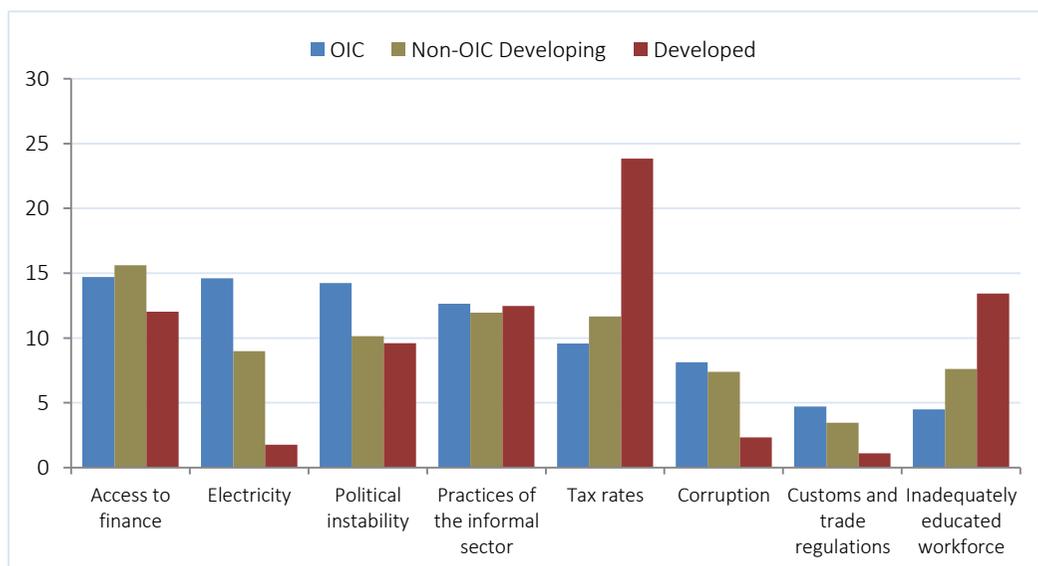
Industrialisation is not just about large-scale production involving long production runs, large investments and many workers. Small firms can play an important role in realizing industrial development (Weiss, 2011). Although they are considered as an important source of employment, their role is not limited to that only. Small firms can also be a source of dynamism. In developed countries, they played a dynamic role in innovation activities, including electronic

parts and components and computer software, and significantly contribute to the industrial development process.

Innovation requires risk taking behaviour and the tolerance of entrepreneurs is high in risk taking. They engage in a ‘cost-discovery’ process to find out whether new goods can be produced at lower cost and sold at competitive prices, as discussed in chapter 4 (see also Hausmann and Rodrik, 2003), and generate new information on the viability of their activities for other economic agents. Entrepreneurship also accelerates industrialisation and structural transformation by efficiently shifting resources away from traditional sectors into more modern ones. It is therefore important to promote entrepreneurial activity to foster innovation and encourage diversification into new sectors. By introducing new products and organizations processes, entrepreneurs also contribute to the productivity growth. They also put pressure on older firms to innovate, or otherwise exit the market, which is described as ‘creative destruction’ by Schumpeter (1942).

Many countries support entrepreneurship for the purpose of alleviating poverty and generating new employment opportunities instead of backing industrialization. There are also some OIC countries that have effectively integrated entrepreneurship development into their industrialisation strategies. Morocco, for example, included special measures to support entrepreneurship in its Industrial Acceleration Plan 2014-2020, which aims to increase industry’s contribution to 23% of GDP and create 500 thousands new jobs by 2020. It employs a number of instruments to foster growth and competitiveness, particularly the massive development of infrastructure in industrial clusters (El Mokri, 2016). Similarly, Côte d’Ivoire adopted a plan to promote the creation of new firms by reducing start-up costs, investing in infrastructure and improving the legal framework in the ICT sector (World Bank, 2016).

Figure 7.2: Biggest Obstacles faced by Firms



Source: World Bank Enterprise Survey.

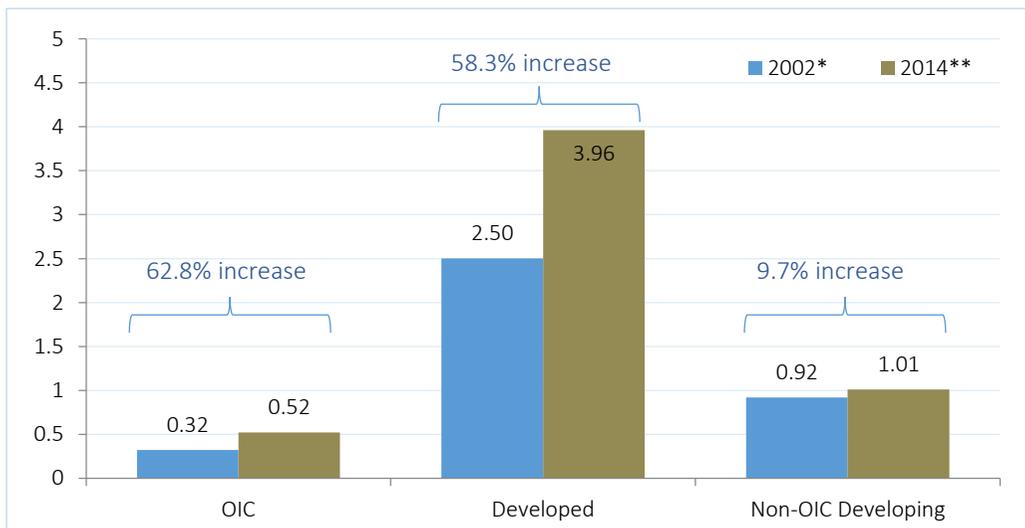


Entrepreneurs face major challenges and constraints when starting firms or upgrading their operations. Since these challenges differ across countries, it is important to identify them before designing policies. These challenges are typically related to financing, infrastructure, skills and business environment. Figure 7.2 shows the most important challenges faced by firms in OIC countries as compared with other country groups. Most of the firms in OIC countries identify the access to finance (14.7%), electricity (14.6%) and political stability (14.2%) as the biggest obstacle. In MENA region, political stability is seen as the major obstacle by 30.1% of firms (see World Bank Enterprise Survey).

Entrepreneurs need better infrastructure and a more supportive business environment. Infrastructure is a key component in promoting industrialisation, raising incomes, accumulating human capital and facilitating access to markets (Lin, 2012). Unreliable electricity supplies will create major obstacles for entrepreneurs relying on technological inputs. On the other hand, improving general economic conditions through sound fiscal and monetary policies and appropriate exchange rates, boosting the business environment and enforcing stable regulatory frameworks can impact enterprise performance and their contributions to industrialisation (AfDB/OECD/UNDP, 2017). These policies need to be tailored to the specific conditions, needs and existing capabilities of individual countries.

Lack of access to credit is a problem that is common to many countries. Small firms in developing countries lack access to credit for a number of reasons. In most cases, small firms lack the assets or collateral that can be used as a guarantee against the loan they take out (Weiss, 2011). Credit constraints prevent firms from growing. Start-ups are more subject to credit constraints and are less resilient against financial shocks. One of the most promising solutions for providing capital to start-up entrepreneurs and SMEs is crowdfunding. Venture

Figure 7.3: Entrepreneurship Development (new business entry density)



Source: SESRIC staff calculations based on World Bank data. (*) 2002 or earliest year after 2002. (**) 2014 or latest year before 2014.

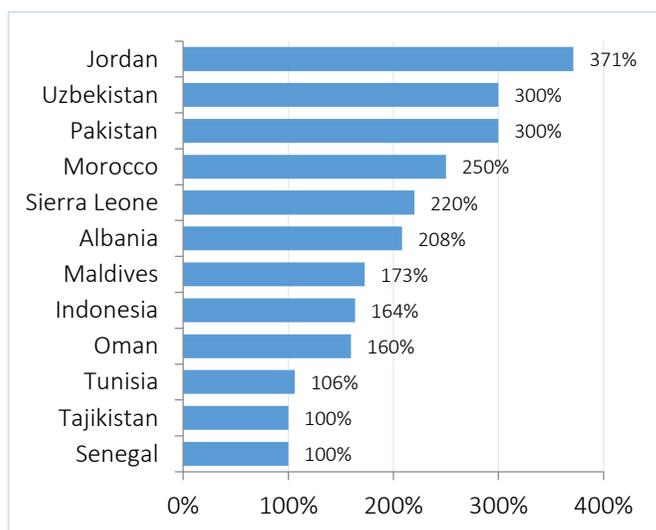
capital and angel investment are also widely used tools to address the credit constraints of innovative entrepreneurs.

Upgrading skills is particularly important to better use the opportunities of new technologies for industrialisation. Improving managerial skills is also essential to strengthen entrepreneurial capacity in OIC countries. Despite the challenges in overall education systems in OIC countries, formal education could better integrate entrepreneurship training to raise awareness and upgrade skills necessary for successful entrepreneurship. In order to address the skills mismatch, there is a need for institutions and programmes that can actively bridge the gap between industry needs and education in OIC countries (SESRIC, 2017). Massive Open Online Courses (MOOCs) can also be an effective tool in supporting and training high-tech entrepreneurs.

In overcoming these obstacles, small firms can benefit considerably from establishing sub-contracting relationship with larger firms and in some instances from clustering in specific locations to undertake joint activities and to take advantage of interactions with similar firms (Weiss, 2011). Business clusters can indeed help firms to grow by overcoming the common barriers and contribute to industrial development. Clustering offers four broad benefits. First, the proximity of firms enables the transfer of knowledge, ideas and technology, and thereby facilitates innovation. Second, it allows firms to benefit from common infrastructure and shared services, lowering fixed costs. Third, clustering creates a pool of labour, raw materials, suppliers, etc. which allows firms to focus on tasks in which they hold a comparative advantage. It also enables firms to tap into large markets (AfDB/OECD/UNDP, 2017).

The effectiveness of cluster depends, among others, on the availability of adequate infrastructure and services as well as proximity and linkages with customers and markets.

Figure 7.4: Entrepreneurship Development



Source: SESRIC staff calculations based on World Bank data.

Industrial parks and special economic zones are clusters established by the state for industrial development with the aim of attracting businesses in certain areas by providing public goods and preferential regulations. High-tech start-up accelerators are also an important tool in providing a combination of services, including mentorship, funding, networking, training and office space to innovative entrepreneurs. Silicon Valley in the USA is probably the most famous and most successful example of clusters.



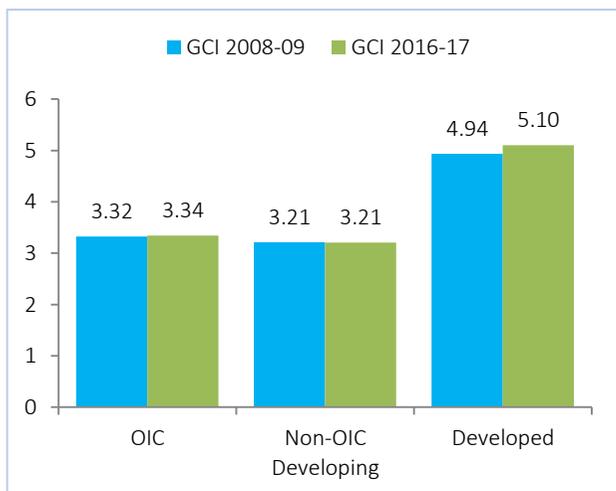
To measure the entrepreneurial activity, the World Bank collected data from 136 countries (including 32 OIC countries) on the number of newly registered firms for the period between 2002 and 2014. Data is provided on new business entry density, defined as the number of newly registered corporations per 1,000 working-age people. As shown in Figure 7.3, OIC countries have the lowest density of new business entry, which corresponds to 13% of the density in non-OIC developing countries. Nonetheless, growth rate was highest in OIC countries. Figure 7.4 shows the top OIC countries that experienced an increase of at least 100% in new business entry.

7.2 Supporting Innovative Firms to Become Exporters

Successful entrepreneurs and SMEs should be supported with adequate instruments to enter in foreign markets and face the international competition to become more productive. Thereby, they can benefit from access to know-how and cutting-edge technology, increased efficiency and economies of scale and increased proficiency by entering more competitive markets. A study published by the European Commission (EC, 2010) found that 26% of internationally active SMEs launched products or services that were new for their sector in their country, while for other SMEs the figure was only 8%. The internationally active SMEs were also more successful with process innovations that were new for their sector in their country (11% vs 3% for other SMEs). Therefore, while exporting firms are more productive than non-exporters, they also more likely to be innovative and promote industrial development.

Productive SMEs face particular challenges in entering international markets. This commonly includes the potential customers and their needs, information about how to access to market, existing competition in the market and finding the right partners in doing business. It is also often difficult for SMEs to get information on how to comply with foreign laws, particularly on custom rules, industrial property rights, contract enforcement and other technical regulations and standards. According to the OECD (2006), the main barriers reported by SMEs include (i) not enough working capital to finance exports; (ii) the difficulty of identifying foreign business opportunities; (iii) not enough information to locate/analyse markets; (iv) inability to contact potential overseas customers; (v) the difficulty of obtaining reliable foreign representation; (vi) lack of managerial time to deal with internationalisation; and (vii) not enough and/or untrained staff.

Since most of SMEs that are productive enough to be exporter do not have capacity to overcome such challenges, specific support mechanisms should be developed. Considering the above listed challenges, it is important to start with building internal capacities to identify and manage the associated risks and opportunities. For this purpose, special mentoring and training programmes can be designed to upgrade the skills required for this purpose. Moreover, governments can be more proactive in helping to acquire information on market opportunities, and rules and regulations. *First Flight* programme of Ireland to support internationalization of firms can be considered as a good example of such initiatives (Box 7.1).

Figure 7.5: Nature of Competitive Advantage

Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = primarily low-cost labour or natural resources; 7 = primarily unique products and processes.

Depending on the specific needs of individual firms, tailored support can be provided to firms after assessing the readiness of firms to foreign competition. Firms with particular strength and competitive advantage can be prioritized in overcoming their challenges in internationalization process. As a general assessment, Figure 7.5 shows the competitive advantage of companies in international markets. Average performance of OIC countries and non-OIC developing countries remain very close to each other and almost unchanged since 2008. Firms from developed countries, on the other hand, remain the most competitive and strengthen their competitiveness even further.

BOX 7.1: First Flight Programme of Ireland to Support Internationalization

Enterprise Ireland, a government organisation responsible for the development and growth of Irish enterprises in world markets, designed a programme called 'First Flight' to prepare firms to enter a new export market. The programme is aimed at assisting companies — by assessing and developing key capabilities — to manage the risks, time and expenses associated with going international. It aims specifically at companies that are new exporters or early-stage exporters (with exports of less than EUR 30,000).

First Flight is a process designed to assist clients with their international development needs, as developing new markets is an essential aspect of business development which is expensive and time consuming. The 'First flight' programme assists the company's management team to structure the planning process into a systematic and consistent order by introducing the broad range of issues to consider.

When exporting for the first time, there are many issues that need to be addressed including potential customers, their needs, routes to market, existing competition in the market, competitive advantage of firms, cash flow considerations, and company resources and capacity. *First Flight* helps with this by placing potential exporters with experienced mentors. Working with a mentor, clients complete an assessment of the companies export readiness and then produce an action plan to maximise strengths and address any gaps that have been identified.

Overall, *First Flight* provides high-impact and high-value information that can be directly used by participating SMEs. The process is managed to minimise risk to the company and is tailored to the needs of the company. *First Flight* is viewed as the first step to a long-term internationalisation and exporting strategy.

Source: Enterprise-ireland.com and EC (2014).



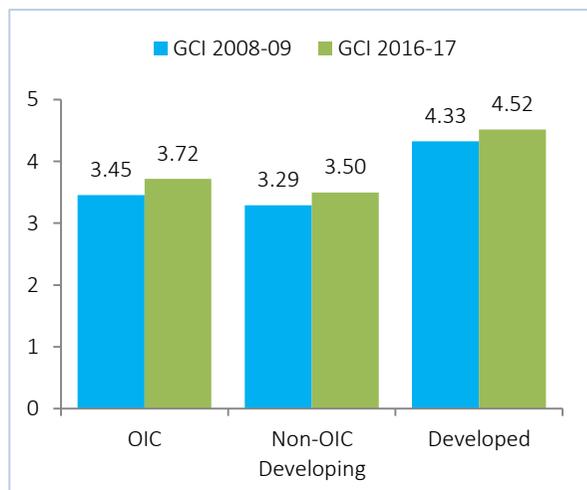
Networks and clusters can be alternative tools to support the internationalization of firms. Participation in big business associations or government agencies facilitates the flow of information towards firms and establishing contacts. Clusters, as discussed in the previous subsection, can be instrumental in supporting firms to grow, but also to export. SMEs hosted in clusters and business networks can benefit from customised services provided by cluster and network organisations. They will also facilitate SMEs to have easier access to global value chains, develop strategic alliances with research organisations in similar clusters or networks, expand their commercial activities abroad, and obtain appropriate skills and tailored professional advice (EC, 2011).

For example, Germany has made extensive use of industry clusters, which act as critical mechanisms in making the German economy one of the strongest in the world. Clusters collaborate and compete with one another to obtain a 'leading edge cluster' designation, which receive funding for dedicated research and development from the Federal Ministry for Research and Education, adding incentive to be innovative and competitive both globally and locally. It is also interesting to note that about one third of the most competitive clusters in Germany are privately funded (Snyder et al. 2012).

Figure 7.6 shows the state of cluster development in the group of OIC countries in comparison with other country groups. It reflects how widespread are well-developed and deep clusters in terms of geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field. OIC countries made significant improvement over the years and perform better than non-OIC developing countries, but lag behind the average of developed countries.

It is also important to note that high-technology and medium high-technology industries and more productive firms are on average generally more likely to become exporter than less technology-intensive industries and less productive firms (Golovko and Valentini, 2011; Bagci, 2013). Tailor-made support programmes would be particularly successful for such companies. An important aspect in supporting internationalization of SMEs is, however, to set clear measurable objectives and targets, and regularly monitor and assess the outcomes. This is to ensure the effectiveness of support measures and avoid the misallocation of resources.

Figure 7.6: State of Cluster Development



Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = non-existent; 7 = widespread

7.3 Bridging the Deficits in Human Capital, Infrastructure and Institutions

In order to achieve industrial development, there are certain prerequisites including skilled labour force, a supportive infrastructure and functioning institutions. The development of the industrial sector relies on the availability of these prerequisites and arrangements made to utilize them for industrial development.

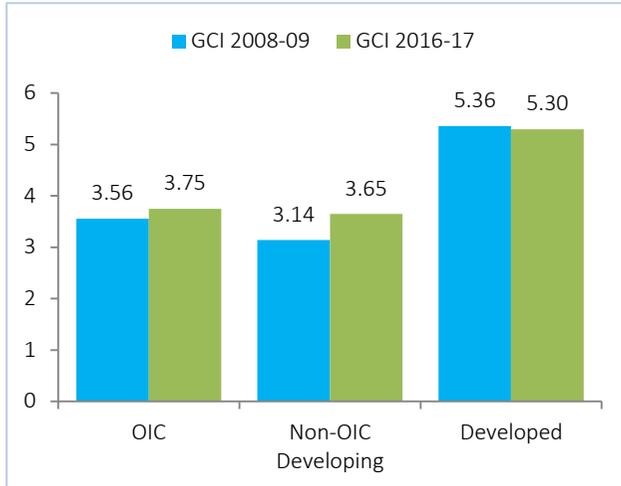
The industrial development requires a labour force with appropriate skills levels that can adapt and utilize the knowledge and technology developed elsewhere. For human capital development, there is a need for increasing the number of persons who have the skills, education and experience in different fields of industrial sectors. SESRIC (2016) discusses the importance of human capital for economic development by particularly focusing on the importance of utilizing young labour force. Moreover, throughout the implementation process of industrial development strategies, continuous investment in human capital is essential in ensuring that the industrialization process is sustainable. It will allow an upgrade of local capabilities and skills and facilitates the process of structural transformation.

In this context, Squicciarini and Voigtlander (2015) show that not initial literacy of the masses, but upper-tail human capital—the presence of knowledge elites—played an important role during industrial growth. In the spirit of Nelson and Phelps (1966), advanced knowledge is more important when the technological frontier expands rapidly. Consequently, upper-tail knowledge becomes particularly important for development during industrialization. It is also well documented that successful industrializers (particularly in Asia) have invested significant amounts in human capital formation to meet the constantly increasing demand from the expanding new industries.

As highlighted in SESRIC (2013), a well-functioning and efficient infrastructure is highly instrumental for economic and social development. It increases living standards, attracts more businesses, and supports the production process of agricultural and manufactured goods by reducing costs. It also helps economic integration and facilitates trade as it eases the access to goods and services. Better transport and communication links make it easier for many countries to access international markets, which is particularly of significant importance for landlocked countries. Infrastructure projects also have a stimulus effect in the economy and they are very likely to increase employment, not just for short term construction purposes but also for the longer term, as infrastructure facilities are believed to draw more companies in their areas. Following a demand-side approach, infrastructure projects also create a demand for skilled labour and intermediary materials to be used as inputs. Responding to this demand, initiatives such as labour training or local production of intermediary materials can be undertaken, which will further benefit the economy in the long term.

Industry and infrastructure development is also part of the sustainable development goals (SDGs) that supports building resilient infrastructure and promotes inclusive and sustainable industrialization. In the face of a rapidly changing global economic landscape and increasing inequalities, SDG-9 aims to ensure that sustained growth include industrialization that makes



Figure 7.7: Quality of Overall Infrastructure

Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = extremely underdeveloped—among the worst in the world; 7 =extensive and efficient—among the best in the world.

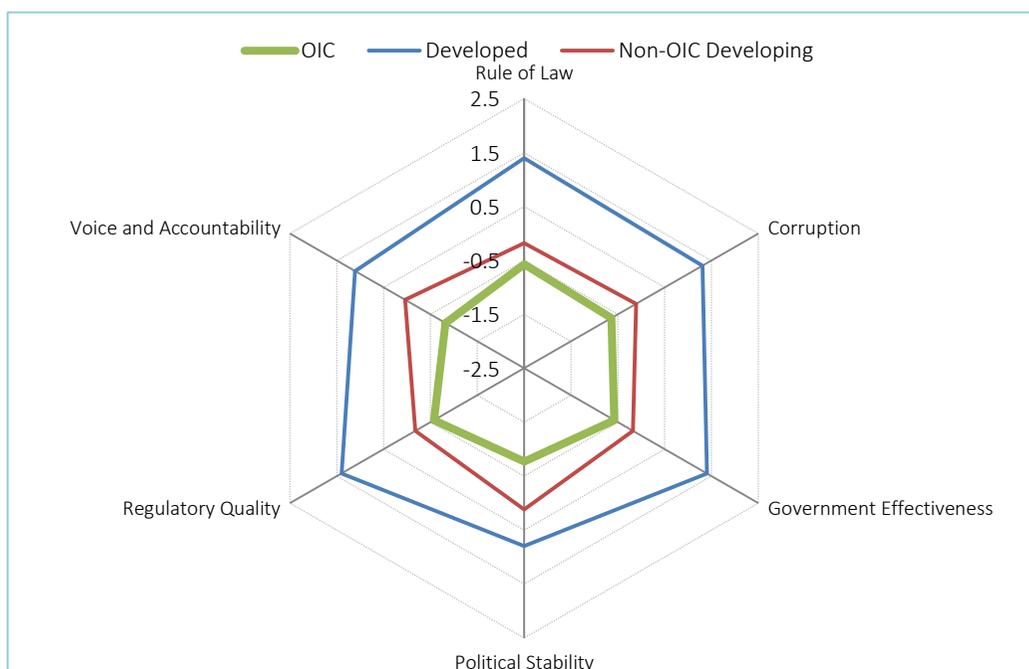
opportunities accessible to all people and is supported by innovation and resilient infrastructure.

Overall quality of infrastructure (e.g., transport, communications, and energy) in OIC countries as a group is not improving enough (Figure 7.7). Although average quality is better than non-OIC developing countries, they are experiencing better improvements than OIC countries and likely to exceed the OIC countries in a few years if current trend continues. In terms of rail and road network density, SESRIC (2016b) shows that OIC countries as a group are

lagging behind from other developing countries as well as the world average. The situation is not better in other indicators of transport infrastructure. An efficient multimodal transportation system is, however, a fundamental element in sustainable economic development. Other elements of infrastructure development, including energy, ICT and water, are also critical for industrial development and need to be improved for sustainable industrialization. For example, South Africa faces tremendous challenge in terms of power supply, which significantly affects the industrial development in the country.

Finally, institutional development is also another important factor in achieving industrial development. It is commonly argued that industrial interventions are prone to political capture and corruption. Therefore, high levels of transparency and accountability are needed during the implementation process of industrial development strategies. Figure 7.8 compares the averages of the six governance indicators for OIC countries with other country groups in 2015, as estimated by the World Bank. While developed countries outperform developing countries in all categories, non-OIC developing countries also do comparably better than OIC countries. In none of the categories, OIC countries as a group attain a positive score. Non-OIC developing countries could attain a positive score only in political stability and voice and accountability categories. Voice and accountability and political stability categories are the weakest categories for OIC countries. On the other hand, regulatory quality, though negative, is the strongest category for OIC countries. All these reflect the lower level of institutional quality in OIC countries.

Figure 7.8: Institutional Quality and Governance (2015)



Source: SESRIC staff calculation based on World Governance Indicators 2016 of the World Bank.

7.4 Developing a Mechanism for Industrial Financing

In order to finance industrial development, many governments establish development banks or similar financial institutions and channel domestic as well as foreign savings towards medium- and long-term industrial projects. These are usually government-sponsored financial institutions to solve failures in credit markets inhibiting industrial growth. Existing historical accounts show that development banks exist at least since the 19th century with the creation of *Société Général pour Favoriser l'Industrie National* in the Netherlands (1822) and, later on, a group of institutions in France that had important influence on European infrastructure investments such as railways (Lazzarini et al. 2011). Today's industrialized economies such as Germany, Japan and the Republic of Korea have greatly benefited from the services provided by national development banks during their industrialization.

Today, many OIC countries have state-sponsored or privately owned financial institutions to support industrial development. Bahrain Development Bank, Bangladesh Development Bank, Development Bank of Kazakhstan, Industrial Bank of Kuwait, Industrial Development Bank of Pakistan, Development Bank of Turkey and Uganda Development Bank are some of the examples of national development banks in OIC member countries. There are also regional or multilateral development finance institutions such as Asian Development Bank, African Development Bank and Islamic Development Bank as well as global institutions like International Bank for Reconstruction and Development (IBRD, World Bank), where OIC countries are among their members.

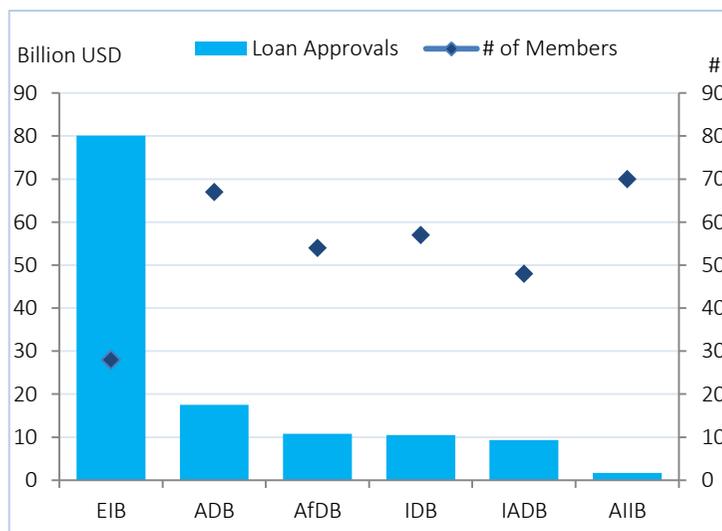


There are multiple roles that development banks perform. They typically finance infrastructure investments but also support structural changes in line with national development strategies, and to create an environment conducive to the improvement of the quality and competitiveness of goods and services in the domestic and world markets. They provide long-term capital to stimulate investments in strategic industries and contribute to industrial development. In addition to these, they support investments in periods of economic downturn, performing a counter-cyclical role. Moreover, development banks encourage innovation and new firm growth by supporting risky R&D intensive start-ups and innovative projects. Development banks can leverage resources by attracting other lenders that do not have the same technical capacity to assess a project's viability and potential. They can also provide resources to address societal challenges such as climate change or aging populations (Mazzucato and Penna, 2014; UNCTAD, 2016c).

It is clear that industrial development is not the only objective of development banks, which largely depends on the development level of countries. While the development banks in lower income countries tend to focus largely on industrial development, they target additional objectives at higher income levels such as creating employment, reducing regional and social inequalities and spurring technological change. The typical instruments that they use include loans, grants (to finance particularly risky innovative projects), equity investments (to promote long-term fixed investments), trade finance (to facilitate export), SME support and technical support (Guadagno, 2016).

If interventions are made in sectors that are not crucial for economic development or in an unsustainable, politicized or poorly managed fashion, expected benefits will not materialize. Moreover, it will create additional burden on national economy. In order to increase efficiency in allocation of resources to productive sectors, private sector may also play an important role. As one of the few examples of privately owned development bank, Industrial Development Bank of Turkey (TSKB), established in 1950 with World Bank support, derives resources from the Government and international financial institutions, and makes loans and investments based on consultations with the State Planning Organization. Interest rates on such loans were kept low, and the TSKB was not permitted to accept deposits and could not issue bonds in the market. This made the TSKB largely a vehicle to implement the State's policies of promoting manufacturing and influencing the allocation of investment, although there are already three state-owned development banks, namely İllbank, Eximbank and development bank (UNCTAD, 2016c). However, the importance of the development banks has declined over time. It is noted that the share of development and investment credits in total credits declined from around 25-30% during 1970s to around 10% in 1980s and then further declined to below 5% during the last decade (Öztürk et al., 2010).

The number of development banks worldwide is difficult to ascertain, due to definitional and data-related problems. According to latest estimations, the presence of development banks in the financial system remains significant, as they account for 25% of total banking assets around the world (Luna-Martinez and Vicente, 2012). At regional level, European Investment Bank (EIB) of European Union approved by far the largest amount of loans to its member countries, which

Figure 7.9: Total Loan Approvals by MDBs (2016)

Source: SESRIC staff calculations based on banks' annual reports.

to find resources for their economic transformation. The lack of financing mechanisms for industrial and economic development is in fact not due to a shortfall in global savings. It is reported that annual global savings are at around \$22 trillion and the stock of global financial assets is estimated to be about \$218 trillion (UN, 2014). If these savings could be channelled to long-term investments, they would support industrial and economic development across the world and probably get higher returns. National, regional and international development banks can bridge the largely available finance to potentially strong projects that can transform the economies.

are mainly industrialized economies. Other regional development banks' total lending remained around USD 10-20 billion (Figure 7.9). There are also several networks among the development finance institutions, including ADFIMI operating under the IDB (see Box 7.2).

Despite the presence of development finance institutions at national, regional and global level, many countries struggle

BOX 7.2: Association of National Development Finance Institutions (ADFIMI)

ADFIMI, which stands for Association of National Development Finance Institutions (DFIs) in Member Countries of the Islamic Development Bank (IDB), was established as an autonomous independent international organization. With a membership of around 50 in eighteen countries, the main objective of ADFIMI is to establish networking and solidarity among its member national development finance institutions this utilization of collective wisdom of its members.

ADFIMI also aims to enhance the effectiveness of DFIs and banks in its region. This would provide the member DFIs the opportunity to work together and successfully develop expertise, exchange mutually beneficial ideas and experiences and to promote cooperation in the region, to prepare policy papers, to undertake advocacy and to complement the IDB's activities.

ADFIMI conducts research, training and capacity building to meet the needs and requests of members and forms partnerships with other agencies or its members for the development and implementation and training and capacity building programs to meet the needs of its members.

Source: adfimi.org.



In this context, Islamic financial instruments would be another option to mobilize resources and finance industrial development in OIC countries. Islamic finance services has shown remarkable success in terms of growth, expansion, and institutional and product diversification. The asset-backed and risk-sharing nature of its products has strong potential to contribute to social and economic development through promoting entrepreneurship. Particularly in bridging the gap in infrastructure development, Islamic finance provides great complementarities. While Islamic finance seeks real assets to be financed, infrastructure investment provides those tangible assets for financing. Moreover, it offers a mechanism where investors can have ownership in assets and receives from the profits. The Sukuk market has been particularly instrumental for fund raising and investment activities.

7.5 Investing in Technology and Innovation

In order to achieve industrial development, it is fundamental to build technological capacities to be able to utilize latest technologies, design innovation policies to promote in-house innovation activities, and get prepared for the future opportunities and challenges.

7.5.1 Building technological capabilities

The term technological capability refers to the information and skills that allow productive enterprises to efficiently utilize equipment and modern technology and thereby contribute to the economic development (Lall et al., 2016). It has three main elements: production, investment and innovation. Production capability denotes the diverse capabilities required to operate and maintain production facilities. Investment capability refers to the abilities required for establishing new production facilities and expanding capacity. Innovation capability consists of abilities to create and carry new technological possibilities through to economic practice.

Technological development is understood as the process of building up such capabilities. Mere passive learning is insufficient as the technology becomes more complicated or market demands more rigorous. However, the development of technological capabilities does not necessarily imply building capacities to undertake cutting edge innovation only. It often involves efforts to absorb and build upon the knowledge that needs to be utilized in production to achieve higher productivity and product sophistication.

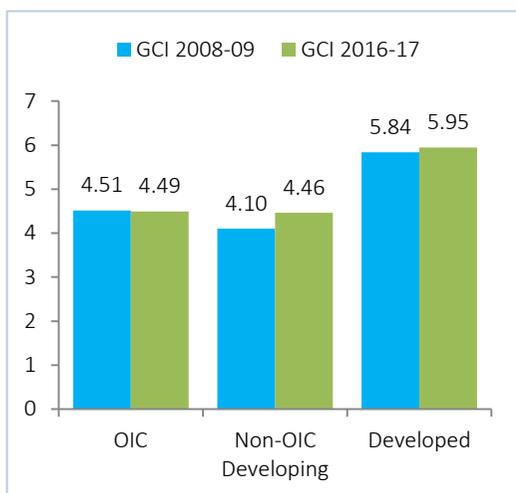
Building national technological capabilities is associated with government intervention in terms of the incentive regimes, the factor markets and the institutions that support industrial technology (Lall, 2001). Governments should support learning through policies that enhance the ability of firms to close the knowledge gaps with advanced countries' companies (Malerba and Nelson, 2011). They should assign a central role to indigenous technological effort in mastering new technologies, adapting them to local conditions, improving upon them, diffusing them within the economy and exploiting them overseas by manufactured export growth and diversification and by exporting technologies themselves.

Many countries have been making extensive investments in infrastructures to support the development of core technological capabilities, especially among small and medium-sized

enterprises (SMEs). Small-firm sector has strong growth potential - especially through the exploitation of technology. They are more likely to succeed when they operate in clusters, which enable entrepreneurs and workers to learn from each other and competitors to engage in collective action to overcome common constraints.

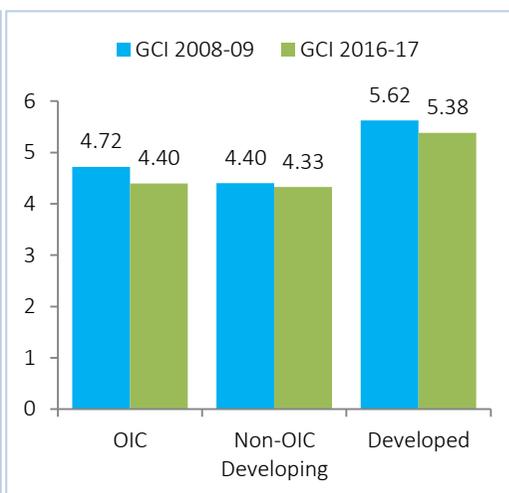
Figure 7.10 shows to what extent are the latest technologies are available. In 2008, OIC countries on average were performing much better than non-OIC developing countries in terms of accessibility to new technologies, but OIC countries could not improve its position and non-OIC countries achieved to catch-up the OIC countries in 2016. Similarly, 7.11 shows to what extent businesses adopt new technology. Although it is observed that all countries experienced a decline in capacity to absorb new technology, OIC countries experienced a decline at a higher rate than other country groups. These indicators imply that greater efforts should be made to transfer the new technologies and improve the absorptive capacities at firm level.

Figure 7.10: Availability of latest technologies



Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = not at all; 7 = to a

Figure 7.11: Firm-level technology absorption



Source: SESRIC staff calculations based on WEF Global Competitiveness Index. Note: 1 = not at all; 7 = adopt

7.5.2 Innovation policies for industrialization

Industrial policy is the coordination of governmental activities to upgrade the productivity and competitiveness of the whole economy and of particular industries in it. This process definitely requires complementary innovation policies to help firms to perform better and contribute to wider economic objectives. Indeed, innovation policies in many countries implicitly or explicitly directed at seeking to transform the industrial structure. Similarly, many industry development programs typically involve aspects of innovation such as knowledge transfer, technology acquisition and transfer, skills development, and collaboration between research centers and industry.

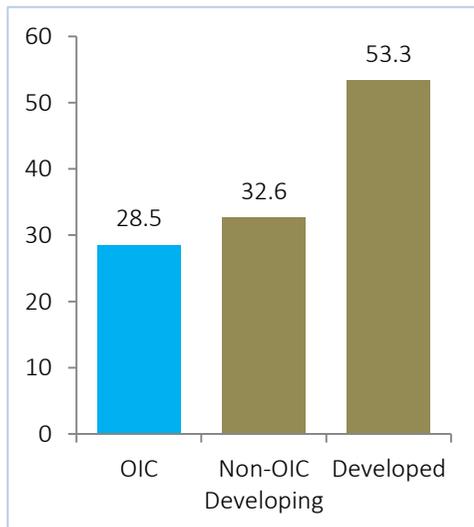


Although industry and innovation policies are closely related overlap on the question of promoting technological learning and competence building, it does not mean that either of them should be omitted. Innovation policy should be considered as one of the functional instruments of industrial policy in supporting the innovation capabilities across industries and allow them to discover their true potential and competitive advantage.

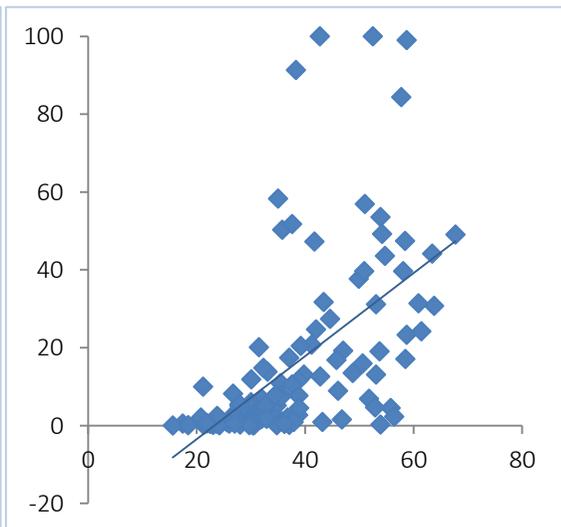
Industrial development cannot be achieved without promoting technological upgrading and innovation capacity. Currently, innovation capacity of OIC countries as a group lags behind the averages of other countries groups (Figure 7.12). This reflects that input and output elements related to innovation capacities are not well considered in designing innovation policies. Without an effective innovation policy, it is hard to expect to achieve a competitive position in global markets in industrial sectors. As shown in Figure 7.13, innovation capacity is highly correlated with high technology export, where economies with higher innovation capacities are more likely to export more high technology exports.

Science, technology and innovation (STI) policies are needed not only for industrializing countries, but also for industrialized countries. Many industrialized countries have been particularly active in four STI policy areas during 2014-16: (1) Financing business innovation and entrepreneurship, and increasing support to SMEs and their internationalisation; (2) Rationalising public research spending, improving ties between public and private research and encouraging interdisciplinary research and open science; (3) Ensuring the future supply of talent and building a culture for innovation; and (4) Improving STI policy governance, with strong attention given to policy evaluation and the design of responsible research and innovation policies (OECD, 2016). It is important to note from OECD (2016) that many countries have restructured their policy mix to include special assistance for SMEs and start-ups in accessing global markets as well as the internationalisation of clusters to connect SMEs to global knowledge networks.

Figure 7.12: Global Innovation Index, 2017 **Figure 7.13:** Innovation vs High Tech Export, 2017



Source: SESRIC staff calculations based on WIPO Global Innovation Index.



Source: SESRIC staff calculations based on WIPO Global Innovation Index.

In many cases, policies for industrial development are not articulated as industrial policies, but rather as industrial development strategies, or as national visions, or as part of periodic national developmental plans aimed at facilitating overall development and economic transition (UNCTAD, 2015b). Industrial development is not only about the rise of specific sectors, it is also about closing the productivity gap. This requires technological and technical support systems for the growth of specific sectors and investment in human capital. It is important to bring the private sector into the policy making process for more efficiency. Overall, in order for successful industrialization in OIC countries, it is critical to create an innovation ecosystem.

7.5.3 Getting Prepared for Industry 4.0

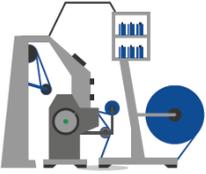
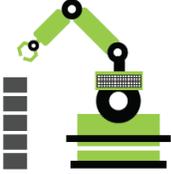
Industrialisation began with the introduction of mechanical manufacturing equipment at the end of the 18th century, when machines revolutionised the production process. It was followed by a second one that began around the turn of the 20th century with the introduction of electrically-powered mass production of goods based on the division of labour. This was superseded by the third industrial revolution that started during the early 1970s, which employed electronics and information technology (IT) to achieve increased automation of manufacturing processes (ISRA, 2013). The fourth industrial revolution is triggered by the entry of the internet into industrial organisations (Figure 7.14).

The fourth industrial revolution, or Industry 4.0 or Smart manufacturing, was first introduced in 2011 by Germany Trade and Invest (GTAI). They used the term to describe a situation where technological advances made a paradigm shift in conventional production process logic. Industrial production machinery no longer simply *processes* the product, but that the product *communicates* with the machinery to tell it exactly what to do (GTAI, 2014). In other words, Industry 4.0 is a state in which manufacturing systems and the objects they create are not simply connected, but also communicate, analyse, and use that information to drive further intelligent action back in the physical world to execute a physical-to-digital-to-physical transition (DUP, 2016).

Increased connectivity and ever more sophisticated data-gathering and analytics capabilities enabled by the Internet of Things (IoT) have led to a shift toward an information-based economy. These developments offer huge potentials for higher productivity and growth in manufacturing industry. First of all, systems can be continuously optimised during production in terms of their resource and energy consumption and allow firms to save resources and increase productivity. Moreover, it will make it easier to meet individual customer requirements. Industry 4.0 allows individual, customer-specific criteria to be included in the design, configuration, ordering, planning, manufacture and operation phases and enables last-minute changes to be incorporated. It thereby offers great flexibility in configuring different aspects of business processes, and opens up new ways of creating value and new forms of employment. It also facilitates optimised decision taking with end-to-end transparency in real time. Moreover, Industry 4.0 will enable people to keep working and remain productive for longer (ISRA, 2013).



Figure 7.14: A History of Industrial Revolutions

1 st Industrial Revolution	2 nd Industrial Revolution	3 rd Industrial Revolution	4 th Industrial Revolution
Late 18 th Century	Beginning of 20 th Century	1970s-2000s	2010 onward
			
Through introduction of mechanical production facilities with the help of water and steam power	Through introduction of mass production with the help of electrical energy	Through application of electronics and IT to further automate production	On the basis of cyber-physical production (CPP) systems, merging of real and virtual worlds

Source: Compiled by author from various sources.

Industry 4.0 presents many potential benefits for industrial development, but there are also important costs and risks. There will be winners and losers, and adjustments to make. Issues like cybersecurity, intellectual property and data privacy will pose major challenges. Despite the challenges, there is a growing interest in the implementation of Industry 4.0 in manufacturing processes and supply chains in developed countries. It makes it possible to manufacture entirely new things in entirely new ways and revolutionize supply chains, production, and business models (see Box 7.3 for an example of Industry 4.0 application). Considering the new developments and opportunities, manufacturers all around the world must decide how and where to invest in new technologies, and identify which ones will drive the most benefit for them. Governments should support manufacturers in their efforts to implement Industry 4.0 approach to achieve productivity and competitiveness in global markets.

A study on Turkey found that if Industry 4.0 is successfully implemented in Turkey, manufacturing sectors have the potential to achieve benefits of up to USD 13 billion (TÜSiAD, 2016). This analysis is based on an estimated increase in productivity of 4 to 7% in light of total production costs. Within the help of Industry 4.0 and integration with the global value chain, around 3% increase in industrial production is expected, which is to boost GDP by more than 1%. However, Turkey needs to invest USD 3-5 billion per year to integrate Industry 4.0 technologies into the manufacturing process over the next ten years.

Achieving the transformation towards Industry 4.0 will be exceedingly challenging for OIC countries. An initial step would be to build a platform where issues related to the implementation of the Industry 4.0 can be addressed, and the strategic and operational needs can be discussed in depth with the participation of all of relevant stakeholders responsible for transforming national industrial sectors. For example, Germany initiated a platform called

BOX 7.3: Industry 4.0 in Practice: Sensors seamlessly monitor product quality in supply chain



Initial situation: Whether, sensitive components or expensive finished products: although quality is monitored almost seamlessly during production, knowledge as to what happens during transportation and product use is frequently nebulous. For example, nobody knows for certain whether the specified transport conditions are really complied with, or whether vibration, excessive humidity, or shocks have caused invisible damage. In the worst case, components can no longer be used, resulting in high downtime costs.

Solution: This is exactly the application field of a new Bosch Industry 4.0 solution called “TraQ” (Tracking and Quality). The solution aims at the continuous monitoring of product quality along the entire supply chain. Transport packaging is furnished with integrated Bosch sensors that are connected to the Bosch IoT cloud. They continuously record data that are relevant for product quality, such as temperature, shocks or humidity.

The sensors transmit this data to the cloud, which means that the process can be smoothly integrated into the business processes. The Bosch IoT cloud evaluates quality-related incidents along the supply chain. Users are alerted in real time, and the supply chain partners can initiate countermeasures in good time. Furthermore, the position data supplied during transportation allow the products’ estimated arrival time to be determined. It is planned to launch this sensor solution, which has already been successfully tested in-house at Bosch, in 2017.

Benefits at a glance: Systematic incoming goods inspections improve quality management; Reduced costs: no error correction arising from rework, time-consuming tracking investigations, or compensation claims by customers; Continuous transport documentation allows conformance with compliance regulations, and enhanced complaints management; Real-time transparency along the supply chain for optimized transport and improved supply chain risk management.

Source: VDMA (2016).

‘Plattform Industrie 4.0’ to bring companies, associations, the academic community, trade unions and policy makers together in order to coordinate the digital transformation of industry. It is also important for OIC countries to focus on the transformation of manufacturing towards a modern manufacturing model involving an industry with a high-end value chain within the framework of Industry 4.0.

7.6 Fostering Regional Integration for Industrial Development

Global production processes are today highly interconnected. Opportunities due to greater market size and availability of diverse resources and factors of production in greater scale are two of these factors that significantly contribute to the growth of global value chains. It is



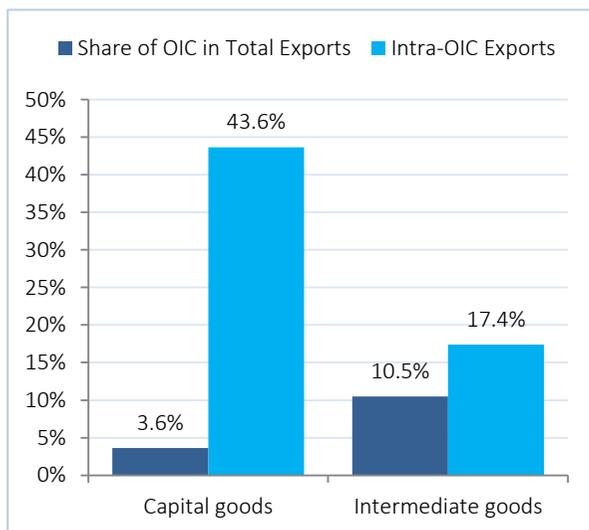
particularly challenging for small economies to develop a competitive industrial sector, because they may not have all the resources needed for an industry to grow. Some countries may be abundant in skilled labour force, some others in capital goods, natural resources or unskilled labour force. Moreover, minimum market size for an industry to grow may be too big for a small economy.

In order to achieve industrial development, establishing a strong collaboration at regional level may thus be essential. Regional integration offers a huge market for manufactures, thus allowing economies of scale for national industries. This in turn creates incentives to specialize and trade in diversified products, and improve production efficiency. Industries may also benefit from the agglomeration resulting from the integration process, which would create new cross-industry externalities such as technology transfer and knowledge spillover. Furthermore, domestic human capital stock is built up due to exposure to new and more sophisticated goods. Therefore, industrial policies in many OIC countries need a regional dimension to succeed.

Setting intra-regional trade target serves as a tool for fostering regional economic integration as well. However, in order to promote more substantive economic cooperation among the OIC member countries, specific sub-targets can be determined to promote cooperation in areas where economic integration also supports industrial development. Trade in intermediate goods, capital goods, consumption goods, manufacturing goods, high technology products and diversified products would be some of the alternatives that OIC community would target to improve in its strategic plans to better promote economic integration.

Figure 7.15 shows the case for the exports of intermediate and capital goods. OIC countries account for around 10.5% of all exports in intermediate goods, 17.4% of which are exported to

Figure 7.15: Intra-OIC Exports in Capital and Intermediate Goods



Source: SESRIC staff calculations based on UN COMTRADE database, BEC classification.

other OIC countries. This clearly indicates that current level of integration for industrial development is not at a desired level. On the other hand, they account for only 3.6% of all exports in capital goods, 43.6% of which are exported to other OIC countries. Although they account for a very small share of total exports of capital goods, a significant share of them are exported to other OIC countries, which is more promising than the trade in intermediate goods.

As highlighted in section 3, overall trade integration appears to be improving in OIC countries. Further improvement of economic

integration will mostly rely on trade and industry complementarities among the OIC countries, which is unlikely to be brought about by market forces alone in near future. Successful finalization of several ambitious industrial projects among the member countries will not only improve economic integration and industrial development, but also open the door for even more ambitious industrial investment projects.

Regional integration will hinge on common interests of the member countries depending on their political and socio-economic realities. If effectively managed, it can facilitate cooperation and convergence among the member countries. This process requires, among others, better connectivity in terms of infrastructure, transportation and logistics networks, energy and information and communication technology, integration of production processes (value chain), alignment of regulatory policies, and effective support to trade and investment policies.

Industrial development in the European countries has been strongly associated with regional integration in the continent. With the alignment of economic policies and regional incentive mechanisms, even small economies found opportunity to grow and become competitive in specific industrial sectors. Competition among the countries does not constitute a barrier for cooperation if the areas for common interests are identified and policies for economic cooperation are well designed and implemented. Despite the similarities in economic structures, EU countries trade around 60-65% with other EU countries. This reflects the fact that if regional integration policies are effectively designed and implemented under a well-functioning institutional setup, this would bring benefits for the whole community.

Despite the conflicting economic interests that may exist among the OIC countries, identification and realization of large common infrastructure projects remains an absolute necessity to bring down the cost of doing business across borders, help connect markets and enhance regional trade and investment. This will in turn support future cooperation in industrial activities and greater integration into regional value chain. This will then support the move from simple to more complex activities as countries learn from each other while producing a share of value added.

Overall, there is a need to create a synergy between trade and investment policies of the member countries, with particular attention given to the measures that stimulate product value chains in industrial development. Although such a process requires political commitment, it also needs a conducive business environment, proper protection of intellectual property and skilled human capital. Under such circumstances, private sector will be more able to identify and utilize the opportunities in connecting the markets. One of the key beneficiaries of this process will be productive SMEs that are facing challenges in entering foreign markets. Finally, by creating linkages outside the traditional sectors, the regional integration process will help to increase economic diversification and productivity.



References

- AfDB (2012), "Comparative Study on Export Policies in Egypt, Morocco, Tunisia and South Korea." African Development Bank: Tunis.
- AfDB, OECD, UNDP (2017). *African Economic Outlook 2017- Entrepreneurship and Industrialisation*. African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme. OECD Publishing, Paris.
- Ali, A. A. and Y. Msadfa (2016), Industrial policy, Structural Change and Global Value Chains Participation: Case study of Morocco, Tunisia and Egypt, The OCP Policy Centre Policy Paper 16/4.
- Ansu, Y. (2013), "Industrial Policy and Economic Transformation in Africa: Strategies for Development and a Research Agenda," in *The Industrial Policy Revolution II: Africa in the 21st Century*, J.E. Stiglitz, J.L. Yifu and E. Patel eds. International Economic Association, London: Palgrave Macmillan.
- Arslan, I. and S. van Wijnbergen (1993), "Export incentives, exchange rate policy and export growth in Turkey," *The Review of Economics and Statistics*, 75 (1):128–33. doi:10.2307/2109635.
- Astorga R., M. Cimoli and G. Porcile (2014), The role of industrial and exchange rate policies in promoting structural change, productivity and employment. In: *Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development*, Salazar-Xirinachs JM, Nubler I, and Kozul-Wright R, eds. International Labour Organization. Geneva: 79–112.
- Atiyas, I. (2015), "Structural Transformation and Industrial Policy," Policy Perspective No: 16, Economic Research Forum.
- Atiyas, İ. and O. Bakış (2015), "Structural Change and Industrial Policy in Turkey," *Emerging Markets Finance and Trade*, 51:6, 1209-1229.
- Bagci, K. (2013). "Export behavior of German SMEs in the Eurozone." *International Economics and Economic Policy*. December 2013, Volume 10, Issue 4, pp 613–629.
- Chandra, R. (1992), *Industrialization and Development in the Third World*, London: Routledge.
- Chang HJ (1994). *The Political Economy of Industrial Policy*. St. Martin's Press. New York.
- Chang, H.J. (2006), *The East Asian Development Experience: The Miracle, the Crisis, and the Future*, Zed Books and TWN, New York and Penang.
- Chenery, H.B. (1960) "Patterns of industrial growth," *The American Economic Review* 50(4): 624–54.
- Cherif, R. and F. Hasanov (2015). "The Leap of the Tiger: How Malaysia Can Escape the Middle-Income Trap." IMF Working Paper, WP/15/131. Washington, D. C.: International Monetary Fund.
- Clark, C. (1957), *The conditions of economic progress*. 3rd ed. London: Macmillan.
- Dahlman C, Routti J and Ylä-Anttila P (eds.) (2006). *Finland as a Knowledge Economy: Elements of Success and Lessons Learned*. World Bank Institute.

- Devarajan, S. (2016). Three reasons why industrial policy fails. The Brookings Institution. Available at <http://brook.gs/2vfKKTW>.
- Dicken, P. (1998). *Global shift: Transforming the World Economy*, 3rd ed. London: P. Chapman.
- Dubai (2016), 2021 Dubai Plan, Dubai Industrial Strategy 2030, Government of Dubai, www.dubaipplan2021.ae.
- DUP (2016). Industry 4.0 and manufacturing ecosystems - Exploring the world of connected enterprises. Deloitte University Press.
- EC (2011). *Small Business, Big World — a new partnership to help SMEs seize global opportunities*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, European Commission, Brussels. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0702:FIN:EN:PDF>
- EC (2014). *Supporting the Internationalisation of SMEs*. Guidebook Series on How to support SME Policy from Structural Funds. Brussels: European Commission.
- El Mokri, K. (2016), "Morocco's 2014- 2020 Industrial Strategy and its potential implications for the structural transformation process," The OCP Policy Centre Policy Brief 16/27.
- Felipe J. and C. Ree (2015), Issues in modern industrial policy (I): sector selection, who, how, and sector promotion. In: *Development and modern industrial policy in practice: issues and country experiences*. Felipe, J. ed. Cheltenham, UK: Edward Elgar Pub.
- Felipe, J. and C. Rhee (2013), "Report to the Government of Kazakhstan: Policies for industrial and service diversification in Asia in the 21st century," Manila: Asian Development Bank.
- Galal, A. and N. El-Megharbel (2008), "Do Governments Pick Winners and Losers: An Assessment of Industrial Policy in Egypt." In Ahmed Galal, ed., *Industrial Policy in the Middle East and North Africa: Rethinking the Role of the State*. The American University Press, Cairo and New York.
- Golovko, E. and G. Valentini (2011). "Exploring the complementarity between innovation and export for SMEs growth." *Journal of International Business Studies* 42: 362–380.
- Grossman, G. (1990), "Promoting new industrial activities: a survey of recent arguments and evidence," OECD Economic Studies No: 14, Paris: Organization for Economic Cooperation and Development.
- GTAI (2014). "INDUSTRIE 4.0—Smart manufacturing for the future," July 1, 2014, Germany Trade and Invest.
- Guadagno, F. (2016), "The role of industrial development banking in spurring structural change," Inclusive and Sustainable Industrial Development Working Paper Series 8, Vienna: United Nations Industrial Development Organization.
- Guzman, M., J.A. Ocampo and J.E. Stiglitz (2016). "Real Exchange Rate Policies for Economic Development." Initiative for Policy Dialogue Working Paper Series, Working Paper No: 300.
- Haque, I. (2007), "Rethinking Industrial Policy," UNCTAD Discussion Papers 183, UNCTAD/OSG/DP/2007/2.
- Hausmann, R. and D. Rodrik (2003), "Economic development as self-discovery", *Journal of Development Economics*, Vol. 72/2, Elsevier, pp. 603-633, [http://dx.doi.org/10.1016/S0304-3878\(03\)00124-X](http://dx.doi.org/10.1016/S0304-3878(03)00124-X).
- Hausmann, R., Hidalgo, C. A., Bustos, S., Coscia, M., Simoes, A., & Yildirim, M. A. (2014). *The atlas of economic complexity: Mapping paths to prosperity*. MIT Press.
- Hausmann, R., J. Hwang and D. Rodrik (2007), "What you export matters," *Journal of Economic Growth* 12(1): 1–25.
- Herrendorf B, R. Rogerson, and A. Valentinyi (2013), "Growth and structural transformation," in *Handbook of Economic Growth*, 2014, v. 2, pp. 855–941.



- Hofman, B., Rodrick-Jones, E. and Thee, K.W. (2004), "Indonesia: Rapid growth, weak institutions" A case study from *Scaling up poverty reduction, A global learning process and conference*, Shanghai, May 25-27, 2004, The World Bank.
- ILO (2014), *Global Employment Trends 2014: Risk of a Jobless Recovery?*, Geneva: International Labour Organization.
- IMF (2016), *World Economic Outlook Database, April 2016*, The International Monetary Fund, Washington, D.C.
- IMF (2017), *World Economic Outlook Database, April 2017*, The International Monetary Fund, Washington, D.C.
- ISRA (2013). Securing the future of German manufacturing industry - Recommendations for implementing the strategic initiative INDUSTRIE 4.0. Final report of the Industrie 4.0 Working Group. Industry-Science Research Alliance, Germany.
- Kaplinsky, R. (2013), "Global Value Chains, where they came from, where they are going and why this is important", *Innovation, Knowledge, Development Working Paper No. 68*, Open University.
- Kaplinsky, R., and M. Morris (2001). *A Handbook for Value Chain Research*. Ottawa: International Development Research Centre.
- Kniivilä, M. (2007), "Industrial development and economic growth: Implications for poverty reduction and income inequality," in *Industrial Development for the 21st Century*, New York: United Nations.
- Konkakov, A. and G. Kubayeva (2016), "Progress in diversification of the economy in Kazakhstan," Working Paper No. 2016/8, The Maastricht School of Management.
- Kuznets, S. (1966), *Modern economic growth*, New Haven, CT: Yale University Press.
- Lall, S. (2001). *Technological change and industrialization in the Asian newly industrializing economies: achievements and challenges*. In *Competitiveness, Technology and Skills*, Ed: S. Lall. E. Elgar Publishing.
- Lall, S., G.B. Navaretti, S. Teitel & G. Wignaraja (2016). *Technology and enterprise development: Ghana under structural adjustment*. Springer.
- Lavopa, A. and A. Szirmai (2012), "Industrialization, employment and poverty," UNU-MERIT Working Paper 2012-081. United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology.
- Lawrence, P. (2016), "Is There An Africa Problem?," in *Routledge Handbook of Industry and Development*, J. Weiss and M. Tribe eds. New York: Routledge.
- Lazzarini, S.G., A. Musacchio, R. Bandeira-de-Mello & R. Marcon (2011), "What Do Development Banks Do? Evidence from Brazil, 2002-2009," Working Paper 12-047, Harvard Business School.
- Lin JY, and Treichel V (2014). Making industrial policy work for development. In: *Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development*, Salazar-Xirinachs JM, Nubler I, and Kozul-Wright R, eds. International Labour Organization. Geneva: 65–78.
- Lin, J. Y. (2012b). *The Quest for Prosperity: How Developing Economies Can Take Off*, Princeton, NJ: Princeton University Press.
- Lin, J.Y. (2012a). *New Structural Economics*, World Bank, Washington, DC. <https://doi.org/10.1596/978-0-8213-8955-3>.
- Luna-Martinez J and C.L. Vicente (2012). Global Survey of Development Banks. World Bank Policy Research Working Paper 5969, WPS5969. February.
- Malerba, F., and R. Nelson (2011). Learning and catching up in different sectoral systems: evidence from six industries. *Industrial and Corporate Change*, 20(6), 1645–1675.
- Mazzucato, M., and C. Penna (2014), Beyond market failures. The market creating and shaping roles of state investment banks, SPRU Working Paper Series SWPS 2014-21.

- McMillan, M. and D. Rodrik (2011), "Globalization, Structural Change and Productivity Growth," in *Making Globalization Socially Sustainable*, M. Bacchetta and M. Jansen, eds., Geneva: International Labour Organization.
- Milberg, W., X. Jiang and G. Gereffi (2014). "Industrial Policy in the era of vertically specialized industrialization". In J. Salazar-Xirinachs, I. Nübler and R. Kozul-Wright (eds.), *Transforming economies: making industrial policy work for growth, jobs and development*. Geneva: UNCTAD and ILO.
- MITI (2006), *Third Industrial Master Plan (IMP3) 2006 – 2020*, Ministry of International Trade and Industry, Malaysia.
- Nelson, R. R. and E. S. Phelps (1966), "Investment in Humans, Technological Diffusion, and Economic Growth," *American Economic Review*, 56, 69–75.
- Nishijima, S. (2012), "Japanese Industrial Policy," *Perspective of the World*, Vol. 4, No: 3, pp: 73-93.
- ODI (2017). Supporting economic transformation: An approach paper. Prepared by M. McMillan, J. Page, D. Booth and D. W. Velde. London: Overseas Development Institute.
- OECD (2006), *Removing barriers to SME access to international markets*. Final background report of the OECD-APEC. OECD-APEC Global Conference, 6-8 November 2006, Athens, Greece.
- OECD (2009). "Competition Policy, Industrial Policy and National Champions." Policy Roundtables DAF/COMP/GF(2009)9. OECD Publishing. Paris.
- OECD (2016). *OECD Science, Technology and Innovation Outlook 2016*. Paris: OECD Publishing.
- Okazaki, T. (2017), "Industrial Policy in Japan: 70-Year History since World War II," Japan SPOTLIGHT, March-April 2017.
- Özler, Ş. and K. Yılmaz (2009). "Productivity response to reduction in trade barriers: evidence from Turkish manufacturing plants", *Review of World Economics* 145:339–360.
- Öztürk H, D. Gültekin-Karakaş and M. Hisarcıklılar (2010). The role of development banking in promoting industrialization in Turkey. *Région et Développement* No. 32.
- Pack, H. and K. Saggi (2006), "Is there a case for industrial policy? A critical survey," *The World Bank Research Observer* 21(2): 267-97.
- Page, J. (2013), "Should Africa Industrialize?" in *Pathways to Industrialization in the Twenty-First Century: New Challenges and Emerging Paradigms*, Eds: A. Szirmai, W. Naudé, and L. Alcorta, Oxford: Oxford University Press.
- Peres, W. (2013), "Industrial Policies in Latin America," in *Pathways to Industrialization in the Twenty-First Century: New Challenges and Emerging Paradigms*, Eds: A. Szirmai, W. Naudé, and L. Alcorta, Oxford: Oxford University Press.
- Prebisch, R. (1964), *Towards a New Trade Policy for Development*, Report by the Secretary-General of the United Nations Conference on Trade and Development, United Nations Publications, New York.
- Rasiah, R. (2015), "The industrial policy experience of the electronics industry in Malaysia," WIDER Working Paper 2015/123, United Nations University, World Institute for Development Economics Research.
- Rijkers, B., C. Freund and A. Nucifora (2014), "The Perils of Industrial Policy: Evidence from Tunisia," mimeo, the World Bank.
- Rodrik, D. (2004), "Industrial Policy in the twenty-first century," KSG Faculty Research Working Paper Series, Harvard University.
- Rodrik, D. (2008a), "Normalizing Industrial Policy," Commission on Growth and Development Working Paper No: 3, The World Bank.
- Rodrik, D. (2008b). "The real exchange rate and economic growth," *Brookings Papers on Economic Activity*, Vol. 39, No. 2: 365-412.



- Rodrik, D. (2015), "Premature Deindustrialization," *Journal of Economic Growth* 21, pp.1-33.
- Sak, G. and F. İnan (2015), "An Investment Policy Framework for Turkey in the Twenty-First Century," The Economic Policy Research Foundation of Turkey.
- Sakakibara, M. and M.E. Porter (2001). "Competing at Home to Win Abroad: Evidence from Japanese History," *The Review of Economics and Statistics* vol. 83(2).
- Schumpeter, J.A. (1942). *Capitalism, Socialism, and Democracy*, Harper Collins, Third Edition (2008), New York.
- SESRIC (2013), *OIC Economic Outlook 2013*, Ankara: Statistical, Economic and Social Research and Training Centre for Islamic Countries.
- SESRIC (2016), *OIC Economic Outlook 2016 – Transforming the Potentials into Impact*, Ankara: Statistical, Economic and Social Research and Training Centre for Islamic Countries.
- SESRIC (2016b), "Transportation Networks in the OIC Member Countries: Impact on Trade and Tourism," Ankara: Statistical, Economic and Social Research and Training Centre for Islamic Countries.
- SESRIC (2017), *OIC Labour Market Report 2017: Encouraging Participation to Labour Market*, Ankara: Statistical, Economic and Social Research and Training Centre for Islamic Countries.
- SIDF (2017), "Industrial Development in Saudi Arabia," Saudi Industrial Development Fund, available at <http://www.sidf.gov.sa/en/IndustryinSaudiArabia/Pages/IndustrialDevelopmentinSaudiArabia.aspx>
- Snyder, J.D., K. E. Corey, M. Snyder, K. Doyle & J. Gepper (2012). *A Global Review of Innovative Practices in Regional SME Exporting Strategies and Foreign Direct Investment Attraction*. Michigan State University, Center for Community and Economic Development.
- Squicciarini, M.P. and N. Voigtlander (2015), "Human Capital and Industrialization: Evidence from the Age of Enlightenment," *The Quarterly Journal of Economics*, 1825–1883. doi:10.1093/qje/qjv025.
- Stiglitz, J.E., J.Y. Lin, and E. Patel (eds.) (2014). *The Industrial Policy Revolution II: Africa in the 21st Century*, Houndmills, UK and New York: Palgrave Macmillan.
- Succar, P. (1987), "The Need for Industrial Policy in LDCs – A Restatement of the Infant-Industry Argument," *International Economic Review* 28: 521-534.
- Szirmai, A. (2012), "Industrialisation as an engine of growth in developing countries, 1950-2005," *Structural Change and Economic Dynamics* 23(4): 406-20.
- Tijaja J. and M. Faisal (2014), "Industrial Policy in Indonesia: A Global Value Chain Perspective", ADB Economics Working Paper Series No: 411, Manila: Asian Development Bank.
- TÜSİAD (2016), *Industry 4.0 in Turkey as an Imperative for Global Competitiveness - An Emerging Market Perspective*. Publication Number: TÜSİAD-T/2016-03/576. Turkish Industry and Business Association.
- UN (2005), "Rethinking the Role of National Development Banks," Background document for the Ad Hoc Expert Group Meeting on "Rethinking the Role of National Development Banks" (New York, 1-2 December 2005).
- UN (2014), *Report of the Intergovernmental Committee of Experts on Sustainable Development Financing*. New York: United Nations. Available at <http://www.un.org/esa/ffd/wp-content/uploads/2014/10/ICESDF.pdf>
- UNCTAD (2009), "The Relationship between Competition and Industrial Policies in Promoting Economic Development," Prepared by the UNCTAD Secretariat for the Tenth Session of the Intergovernmental Group of Experts on Competition Law and Policy. Geneva: United Nations Conference on Trade and Development.

- UNCTAD (2013a), World Investment Report 2013: Global Value Chains: Investment and Trade for Development.
- UNCTAD (2013b). Strengthening the Links between Intra-OIC FDI and Regional Integration, Global Investment Trends Monitor No: 14.
- UNCTAD (2015a). *Global Value Chains and South-South Trade*. New York and Geneva: United Nations.
- UNCTAD (2015b), Technology and Innovation Report 2015- Fostering Innovation Policies for Industrial Development.
- UNCTAD (2016a), *Trade and Development Report 2016: Structural Transformation for Inclusive and Sustained Growth*, New York and Geneva: United Nations Conference on Trade and Development.
- UNCTAD (2016b), *Structural Transformation and Industrial Policy*, Virtual Institute Teaching Material, Geneva: United Nations Conference on Trade and Development.
- UNCTAD (2016c), "The Role of Development Banks in Promoting Growth and Sustainable Development in the South," Economic Cooperation and Integration among Developing Countries, New York and Geneva.
- UNECA (2013), *Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation*, Addis Ababa: United Nations Economic Commission for Africa.
- UNECA (2015), *Macroeconomic Policy and Structural Transformation of African Economies*, Addis Ababa: United Nations Economic Commission for Africa.
- UNECA (2016), *Transformative Industrial Policy for Africa*, Addis Ababa: United Nations Economic Commission for Africa.
- UNIDO (2014), "Competitive Industrial Performance Report 2014," Research, Statistics and Industrial Policy Branch Working Paper 12/2014. Vienna: United Nations Industrial Development Organization.
- VDMA (2016). Industrie 4.0 in practice – Solutions for industrial applications. VDMA Industrie 4.0 newsletter. Frankfurt.
- Weiss, J. (2011). *The Economics of Industrial Development*. Routledge. New York.
- Weiss, J. (2013), "Industrial policy in the twenty-first century: Challenges for the future," In: *Pathways to Industrialisation in the Twenty-First Century, New Challenges and Emerging Paradigms*, A. Szirmai, W. Naude and L. Alcorta, eds. Oxford University Press. Oxford, UK.
- Weiss, J. (2015). Taxonomy of industrial policy. UNIDO Inclusive and Sustainable Industrial Development Working Paper No. 08/2015. United Nations Industrial Development Organization. Vienna.
- Williamson, J. (1990), "Latin American Adjustment: How Much Has Happened?" Washington: Institute for International Economics.
- Williamson, J. (2004), "A Short History of the Washington Consensus," Paper commissioned by Fundación CIDOB for a conference "From the Washington Consensus towards a new Global Governance," Barcelona, September 24–25, 2004.
- World Bank (2016). *Doing Business 2017: Equal Opportunity for All*. World Bank, Washington, DC.
- Zonooz, B. H. (2013), "An Overview of Industrial Policies in Iran and Korea in 1960-2012," Paper presented at the Conference of Korea and the World Economy.
- Levine, R. (2004), Finance and Growth: Theory and Evidence, NBER Working Paper No. 10766.
- IMF (2011), Financial Deepening and International Monetary Stability, SDN/11/16.
- Maziad, S., P. Farahmand, S. Wang, S. Segal, and F. Ahmed (2011), Internationalization of Emerging Market Currencies—A Balance Between Risks and Rewards, SDN/11/17: IMF.



Data Sources

ILO World Employment and Social Outlook 2017 Dataset

IMF Direction of Trade Statistics (DOT) Database, June 2017

IMF World Economic Outlook Database, April 2017

SESRIC BASEIND Database, July 2017

UN COMTRADE Database, July 2017

UN Services Trade Database, July 2017

UNCTAD Online Database, July 2017

UNIDO INDSTAT 2017 Database

UNIDO MVA 2017 Database

UNIDO CIP 2017 Database

UNSD National Accounts Main Aggregates Database, July 2017

World Bank World Development Indicators, July 2017