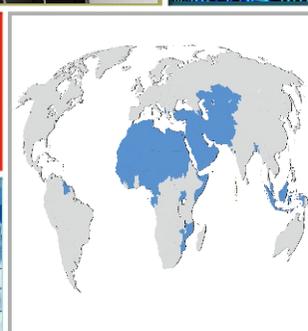
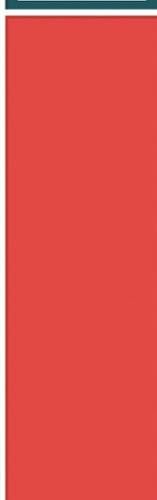
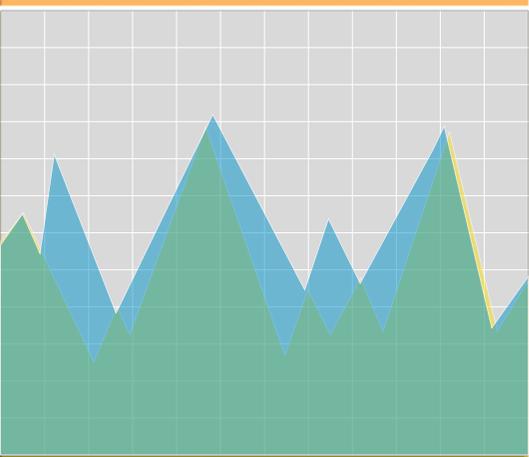
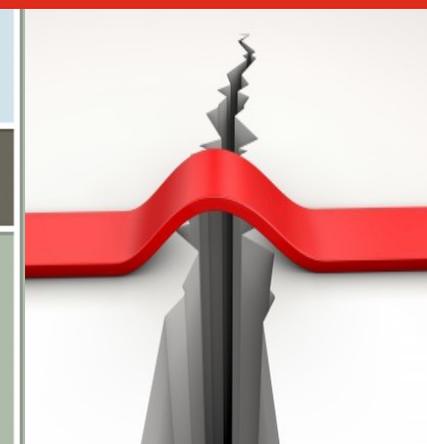
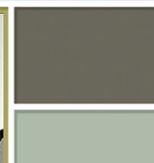


# D-8 ECONOMIC OUTLOOK 2016 / 2017



*ENHANCING PRODUCTIVITY AND COMPETITIVENESS*





# D-8 ECONOMIC OUTLOOK

2016/2017

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**“ENHANCING PRODUCTIVITY  
AND COMPETITIVENESS”**

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This report has been prepared by a research team at SESRIC led by Kenan Bağcı and comprising Cem Tintin and Cihat Battaloğlu. Sections 3, 4 and 5 of this report are largely adopted from OIC Economic Outlook 2014.

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# ACRONYMS

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CFM	Council of Foreign Ministers
D-8	Developing 8 (Organization for Economic Cooperation)
EDBI	Ease of Doing Business Index
FDI	Foreign Direct Investment
FFI	Financial Freedom Index
GCF	Gross Capital Formation
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on Research and Development
GNI	Gross National Income
HIPC	Heavily Indebted Poor Countries
ICT	Information and Communication Technology
IFS	International Financial Statistics
ILO	International Labour Organisation
IMF	International Monetary Fund
IPR	Intellectual Property Rights
IsDB	Islamic Development Bank
LAC	Latin America and the Caribbean
LDC	Least Developed Countries
LDOD	Long-term Debt
LP	Labour Productivity
LPI	Logistics Performance Index
MENA	Middle East and North Africa

MFP	Multi-Factor Productivity
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OIC	Organisation of Islamic Cooperation
OTJT	On-the-Job-Training
PPP	Purchasing Power Parity
PPPs	Public Private Partnership
R&D	Research and Development
RCA	Revealed Comparative Advantage
SSA	Sub-Saharan Africa
STD	Short-term Debt
TFP	Total Factor Productivity
UAE	United Arab Emirates
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNSD	United Nations Statistics Division
USD	United States Dollar
VET	Vocational Education and Training
WB	World Bank
WDI	World Development Indicators
WEF	World Economic Forum
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

# FOREWORD

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Member countries of the Developing 8 Organization for Economic Cooperation (D-8) are also members of the Organization of the Islamic Cooperation (OIC) and they account for a significant share of total population and total economic activity of the OIC group. Improved economic cooperation among D-8 countries will undoubtedly reflect in and contribute to enhancing the economic cooperation among the OIC countries as well. In this connection, SESRIC prepared this report “*D-8 Economic Outlook*” with a view to contributing to the policy dialogue and cooperation among D-8 countries and thereby to the advancement of the level of economic cooperation among the members of both the D-8 and OIC.

Similar to SESRIC flagship report series titled “*OIC Economic Outlook*”, *D-8 Economic Outlook* analyses the trends in major economic indicators for D-8 countries, as a group, during the latest five-year period (2011-2015). It investigates these trends in a comparative manner with the groups of other OIC countries, non-OIC developing countries, developed countries as well as the world economy as a whole and highlights a number of constraints and challenges confronting the D-8 countries in their efforts to enhance their economic development and progress.

The report also includes a comprehensive overview of productivity and competitiveness issues in D-8 countries, which are highly critical to achieve better standards of living which help positioning these countries in a comparably better situation at the global level. The analysis in this part highlights major factors that influence productivity and competitiveness and provides some policy implications for enhancing productivity and competitiveness in D-8 countries.

Amb. Musa Kulaklıkaya  
Director General  
SESRIC



# EXECUTIVE SUMMARY

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## Recent Economic Developments in the World and D-8 Countries

### Production, Growth and Employment

#### *Production*

Global GDP – expressed in current USD and based on PPP – has witnessed an increasing trend over the period 2011-2015, reaching US\$ 113.5 trillion in 2015 compared to US\$ 94.2 trillion in 2011. During the same period, developing countries witnessed more rapid increase in GDP as the total GDP in these countries climbed up from US\$ 51.5 trillion in 2011 to US\$ 65.3 trillion in 2015. On the other hand, developed countries witnessed comparatively a moderate increase as their GDP reached US\$ 48.2 trillion in 2015 compared to US\$ 42.7 trillion in 2011. Similarly, D-8 countries witnessed an increasing trend in economic activity and their GDP increased from US\$ 8.4 trillion in 2011 to US\$ 10.3 trillion in 2015.

#### *Growth*

Growth in the global economy slightly increased from 3.3% in 2013 to 3.4% in 2014, but then declined to 3.1% in 2015. The growth rate of the world economy is predicted to reach 3.2% by the end of 2016 and 3.5% in 2017. Developing countries have fuelled the world output growth rate since 2011, but the growth rates in these countries are steadily declining. While major developed economies remained sluggish, their overall growth performance started to improve. Developing countries are estimated to grow by 4.0% in 2015, which is almost two percentage points higher than the developed countries. On the other hand, the GDP growth of D-8 countries has slowed down to 3.8% in real terms in 2015, as compared to 4.5 % in 2014. Nevertheless, the average rate of growth in D-8 countries is expected to show a better performance in 2016, with average growth rate forecasted to be around 4.2%. This is expected to be consolidated further to 4.5% in 2017.

#### *Production by Sectors*

In terms of the average shares of the value-added by four major sectors in the global GDP in 2014, services sector recorded the largest share with 66.0%, followed by the industrial sector (29.5%) and agriculture, fishing and forestry (4.5%). The share of agriculture in the total GDP of D-8 countries has

gradually declined from 14.3% in 2000 to 13.2% in 2011, but it started to increase slowly over the last three years. In contrast, the services sector continued to play a major role in the economies of D-8 countries as the most important source of income. The average share of the services sector in D-8 economies has increased gradually in recent years from 50.3% in 2011 to 52.4% in 2014.

#### *GDP by Major Expenditure Items*

When the shares of the major expenditure items in the total GDP are considered, the share of final consumption (both by household and government) continued to be the highest in the total GDP over the years, although the share of household consumption declined globally by 2.8 percentage points during the period 2000-2014. In 2014, household consumption in D-8 countries accounted for the lion share of 65.2%, followed by gross capital formation (24.2%) and general government final consumption (11.1%), while the share of net exports accounted -0.3%. Similarly, in global level the share of net export was negligible and recorded 0.9% in 2014. The share of final consumption in total GDP of non-D-8 developing countries was recorded at 67.5% in 2014 and household consumption, with a 51.7% share in GDP, was again the main source of final consumption expenditure in these countries.

#### *Unemployment*

Unemployment remained one of the most challenging issues across the globe. According to the ILO World Employment and Social Outlook 2016 report, the global unemployment rate remained at 5.8% of the global labour force, 0.1 percentage point lower than the year before. Due to mixed expectations about world economy for 2016, very little improvement is expected in the global labour market and the global unemployment rate is expected to stabilize at 5.9% between 2015 and 2017. According to the latest available data, D-8 countries recorded higher average unemployment rates compared to the world and non-OIC developing countries in recent years. In 2015, total unemployment rates in D-8 countries reached 6.5%, which was higher the world average of 5.8% and the average of non-OIC developing countries 5.0%. During the period 2010-2015, average unemployment rate in developed countries remained higher than the rate in D-8 countries. Similarly, average unemployment rate in other OIC countries also remained remarkably higher than the D-8 average during the period between 2000 and 2015.

#### *Inflation*

Inflation is on decline across the globe reflecting primarily the impact of decline in prices for oil and other commodities. In addition, 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 the short-term outlook, inflationary pressures are also projected to remain contained for D-8 countries.

#### *Fiscal Balance*

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. World fiscal balance deficit as a percentage of GDP

witnessed an increase from -3.5% in 2011 to -4.0% in 2015. An opposite trend is being observed in the developed countries group where fiscal balance deficit as percent of GDP has declined from -6.2% in 2011 to -2.9% in 2015. Developing countries also have registered negative fiscal balances but remained in relatively better position than the developed countries during the period under consideration. However, in 2015, the ratio was observed at -4.8% for developing countries group and it is expected to increase to -5.1% in 2016 before declining to -4.4% in 2017. During the period under consideration, D-8 countries as a group witnessed a negative trend. In 2015, D-8 countries recorded fiscal balance of -3.8% of GDP. The fiscal deficit is expected to increase to -3.9% in 2016 before declining to -3.4% in 2017.

## **Trade and Finance**

### *Merchandise Trade*

The total value of world merchandise exports was recorded at US\$ 16.4 trillion in 2015, as compared to US\$ 18.7 trillion in 2014. This corresponds to 12% contraction in total world export volume and reflects the weakening of global economic activity. After the sharp fall in total merchandise exports from D-8 countries following the global financial crisis in 2009, it started to increase rapidly over the years and reached its historically highest level of US\$ 882 billion in 2011. This upward trend was weaker than those observed in other OIC countries, resulting in a decrease in the shares of D-8 countries in total OIC exports from 43.7% in 2009 to 41% in 2011. Since then, this upward trend has been reversed and total exports of D-8 countries started to fall again. In 2015, total exports of D-8 countries reached its lowest level since 2009 with US\$ 693 billion. Accordingly, the share of D-8 countries in total world exports plunged to 4.3% in the same year, compared to 5% in 2011, but its share in total exports of OIC countries increased to 43.2% in 2015 from 38.9% in 2014.

### *Services Trade*

D-8 countries, as a group, remained net importers of services. D-8 member countries exported US\$ 144 billion worth of services in 2015, whereas their services imports were recorded at US\$ 162 billion in the same year. Between 2009 and 2014, services trade volume of D-8 countries exhibited a constant increase, but the year 2015 witnessed a fall in both exports and imports of services. The share of D-8 countries in both services exports and imports of developing countries have followed a downward trend since 2010. While D-8 countries accounted for 3.4% and 3.8% shares in total world services exports and imports in 2010, respectively, these shares dropped to 3% and 3.4% in 2015. Similarly, the collective share of D-8 countries in the total services exports of all OIC countries fell from 51.3% in 2010 to 47.3% in 2015 and their share in the total imports of OIC countries decreased from 35.7% to 31.4% during the same period.

### *Intra-D-8 Merchandise Trade*

After witnessing a sharp fall in 2009, total merchandise trade among the D-8 countries recovered quickly and, following a steep upward trend, reached US\$ 144 billion in 2012. During 2013-2015, however, this number decreased steadily to US\$ 100 billion. Accordingly, the share of intra-D-8 trade decreased from 8.3% in 2012 to 6.7% in 2015. During the period 2005-2012, this share had continuously increased, but this trend is reversed since 2012. Moreover, in 2012, intra-D-8 exports were recorded at US\$ 69 billion, but it decreased to US\$ 48 billion in 2015. Despite the major fall in export volume, the total amount can still be considered substantial when compared to total intra-D-8 exports of US\$ 34 billion in 2009 and US\$ 21 billion in 2005. The share of intra-D-8 exports in total D-

8 exports continued to decrease since 2012 and reached 7.2% in 2015. Similarly, the share of intra-D-8 imports has decreased from 8.3% in 2012 to 6.4% in 2015

#### *Inward FDI Flows and Stock*

World total foreign direct investment (FDI) inflows amounted to US\$ 1.76 trillion in 2015, marking a more than US\$ 486 billion increase over previous year's value of US\$ 1.27 billion. During the period under consideration, FDI flows to D-8 countries generally remained below the potential. The total US\$ value of FDI inflows to D-8 countries was recorded at US\$ 62.6 billion in 2011. Since then, it generally showed a declining trend. In 2015, the total value of FDI flows to D-8 countries was recorded at US\$ 58.2 billion, registering a slight decrease from its previous year value of US\$ 59.7 billion. The share of D-8 countries in total flows to OIC countries, on the other hand, has generally been on the rise since 2011, which reached 50% in 2015.

#### *Financial Sector Development*

A commonly used indicator for determining the degree of financial deepening is the ratio of broad money to GDP. The average volume of broad money relative to the GDP of D-8 countries was recorded at 54.6% in 2015, compared to 62.3% in other OIC countries, 139% in non-OIC developing countries and 116.2% of world average. In 2015, the financial sector on average provided credit to the domestic economy as much as 65.4% of the GDP in D-8 countries whereas, in other OIC countries and non-OIC developing countries, this figure was 59.7% and 137.6%, respectively. Domestic credit by financial sector in developed countries, on the other hand, was on average in the excess of twice the size of GDP in 2015 (205%), which increased the world average to 170.9%.

#### *External Debt and Reserves*

The total external debt stock of D-8 countries showed an increasing trend during the period under consideration. In 2014, the total external debt of D-8 countries increased almost US\$ 50 billion over the previous year's value and reached US\$ 1.1 trillion. Average debt-to-GDP for the D-8 countries increased from 23.5% in 2011 to 28.9% in 2014. During the same period, total external debt stock of D-8 countries as percentage of total developing countries debt decreased slightly from 20.3% to 20.1%. On the other hand, wWorld total monetary reserves – including gold – increased from US\$ 9 trillion in 2009 to US\$ 12.5 trillion in 2014, but it decreased back to US\$ 10.6 trillion in 2015. However, the share of D-8 countries in total reserves of the developing countries declined from 6% in 2012 to 5.5% in 2015.

#### *ODA and Remittances*

Official development assistance (ODA) continues to be an important source of financing for many developing countries, including D-8 countries. In 2014, net ODA flows from all donors to developing countries reached US\$ 100.8 billion compared to US\$ 88.9 billion in 2009. During the period under consideration, ODA flows to D-8 countries exhibited an upward trend. As of 2014, D-8 countries, with US\$ 15.2 billion, accounted for 15.1% of the total ODA flows to developing countries and 28.2% of the total flows to OIC countries. The inflows of personal remittances to D-8 countries increased from US\$ 55.6 billion in 2009 to US\$ 84.5 billion in 2014, but sharply declined to US\$ 37.7 billion in 2015.

## Enhancing Competitiveness and Productivity in D-8 Countries

### Productivity and Competitiveness in D-8 Countries

The only way to reach sustainable positive economic growth rates is to innovate and enhance technology growth. Otherwise, diminishing returns to capital will halt economic growth in the long-run and hinders countries to generate additional output. In order to enable country institutions for innovation and technology growth countries need to review their national policies.

The selected productivity, competitiveness and economic growth indicators are analysed by using datasets (involving productivity, competitiveness and economic growth) compiled from different sources for D-8 countries in comparison with other OIC countries, non-OIC developing countries, developed countries and the world average. The analysis shows that D-8 countries, on average, have showed a striking performance in terms of change in GDP per capita levels. Nonetheless, despite recording some significant improvements in the average GDP per capita levels, D-8 countries still have remarkably lower average GDP per capita level than the average of developed countries and world average.

### Fostering Productivity and Competitiveness

Competitiveness is a reflection of the overall circumstances including institutions, policies and factors that have impact on the level of productivity. While the level of productivity is critical in determining the returns to investments, higher returns to investments bring higher growth rates. Therefore, more competitive economies with higher productivity levels are expected to generate higher income levels for their citizens. It is well-known that productivity is the main determinant of economic growth.

#### *Fundamentals for Enhancing Productivity and Competitiveness*

Long-run growth is determined by the level of technological progress, because growth cannot be sustained by increases in capital per worker or increases in the number of workers. In order to expand the efficiency with which an economy uses its inputs, productive capacities of each production factors should be improved. In this context, human capital development and technological innovation are considered to be the essential factors in enhancing productivity and competitiveness.

Formal education is highly instrumental to improve the production capacity of a society. Better education improves the production processes in several ways. Educated, or skilled, workers are able to perform complex tasks and thereby contribute to producing more technologically sophisticated products. Especially in developing countries, skilled workers increase the absorptive capacity of the country by acquiring and implementing the foreign knowledge and technology, which is of crucial importance in successful economic diversification and development.

For the development of human capital, key prerequisite is not only to increase the access and participation to education, but also to improve the progression and quality in education. D-8 member countries have made significant progress in improving the participation to education over that last four decades. However, the quality of education remains as a concern in some D-8 countries. A positive relationship between the quality of education and labour productivity in D-8

countries is observed. Therefore, for higher productivity and better economic performance, it is critical to improve the quality of education.

Innovation requires significant investment and long-term perspective. Therefore, available resources for research and innovation need to be allocated according to national development strategies and priorities. Today's knowledge economies heavily rely on research and development activities and innovative technologies to sustain their competitive status vis-à-vis other countries. On the other hand, the expected benefits of investment in innovative activities in low income countries may be disappointing due to insufficient framework conditions.

R&D expenditure in D-8 countries increases year to year but it is still unsatisfactory. Only two member countries of D-8, Malaysia and Turkey, spend more than 1% of their GDP for research and development, which are also the highest figures in all other OIC member countries. While expenditure on R&D reflects the importance given to the research and innovation, the number of patent applications shows how successful are the investments in these areas. In that regard, In D-8 countries, total number of annual patent application follows an upward trend over the last decade and reached over 37,800 in 2014.

#### *Boosting Multifactor Productivity Growth*

A number of factors for boosting productivity and competitiveness, including institutional quality, infrastructure development, economic stability and market efficiency, are discussed as they are considered to be important dimensions of realizing higher multifactor productivity growth.

Institutions promote productivity and competitiveness by reducing transaction costs which cover search and information costs, negotiation costs, policing and enforcement costs. According to the WB Governance Indicators, while developed countries outperform developing countries in all categories, other developing countries also do comparably better than D-8 and other OIC countries. In none of the categories, D-8 countries as a group attain a positive score. Other developing countries could attain a positive score only in political stability and voice and accountability categories.

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. In addition to its direct contribution to production process and GDP, infrastructure investment can increase total factor productivity by reducing cost of doing business and allowing effective use of resources.

Productivity growth is higher in countries with an adequate supply of infrastructure services. However, in many countries, enterprises are facing more than one infrastructural challenge. According to the World Bank Enterprises Survey, almost 75% of enterprises in Pakistan identified access to electricity as a major constraint for their businesses. In Bangladesh, it reaches over 50% of all enterprises, but it is a constraint for less than 20% of the enterprises in Malaysia, Turkey, Indonesia and Egypt. More optimistically, 10% to 20% of enterprises in 7 D-8 countries identified transport infrastructure as major constraints for their businesses.

An important element in the policy mix of boosting productivity and competitiveness is the need to maintain macroeconomic stability, since this would create a business environment free of

uncertainty and unanticipated costs. A stable macroeconomic environment would entail lower volatility in inflation rate, interest rate, exchange rate and a low fiscal deficit as a percentage of GDP. It would also require less volatility in terms of the size of economic transactions with the rest of the world.

By hampering the efficiency of the price system in effectively allocating resources, unanticipated changes in inflation (high inflation volatility) will lead to production and growth below the real potential and higher unemployment rates due to possible impacts on the labour market. Higher exchange rate volatility may discourage firms from acquiring or seeking to acquire more efficient foreign technologies and continue with less sophisticated domestically available technologies. Firms will refrain from more productive production processes that involve reliance on the imported materials due to price uncertainty. Finally, higher volatility in the financial system may discourage financial intermediaries from giving long-term loans even if project evaluations on the profitability are positive. This will lead to less efficient allocation of resources and lower productivity growth, with implications on overall competitiveness.

An efficient market is critical for ensuring the optimum allocation of resources based on supply and demand conditions in the market. There are three main areas where efficiency is sought: labour market, goods market and financial market. An efficient labour market should ensure that the skill mismatch is at minimum level in the market. In other words, the skills and capabilities offered by the labour force should match to a large extent with the skills and capabilities needed by enterprises. Moreover, an efficient labour market should ensure that the available labour force is used in most effective way. In the case of goods market efficiency, the right mix of goods and services should be produced and effectively traded in the market. Healthy market competition is important in driving market efficiency and business productivity. Finally, an efficient financial market will ensure allocation of resources to most productive business opportunities; thereby increase overall productivity and competitiveness of an economy.

A flexible labour market, on the other hand, facilitates the adjustment to new economic conditions after any shocks that may arise. Market efficiency is commonly associated with competition, which requires control of abuse of dominant positions, prevention of collusion between firms and removal of market entry barriers. An efficient financial market is required to allocate resources to their most productive uses. For an efficient allocation of resources, prices should reflect all information available and transaction costs should be realistic. If informational and operational efficiency conditions are met, resources will be directed to the places where they will be the most productive and effective.

#### *Identification of Productive Capacities for Competitiveness*

Another important dimension of enhancing productivity and competitiveness is the process of identification of productive capacities. If investments are made in sectors that are to become more competitive and more strategic for the development of an economy, then critical achievements can be made in enhancing overall productivity and competitiveness in medium and long term. An important process of identification is economic diversification, where countries try to position their most competitive advantages through investing in a large variety of fields. Another important factor in identification is the entrepreneurial activities. Diversification can only take place if there are enough entrepreneurs who can take risks to explore new profitable business opportunities.

While lack of diversification in export increases the exposure of countries to adverse shocks and macroeconomic instability, high concentration of economic activity in sectors with limited potential for productivity growth may not bring about much growth and development to the country. Export diversification can be achieved across products or trading partners. When it occurs at product level, it can involve introduction of new product lines or a more balanced mix and higher quality of existing product lines. Producing higher quality varieties of existing products can build on existing comparative advantages. It can boost export revenue potential of countries through the use of more physical- and human-capital intensive production techniques.

Entrepreneurs create a positive externality through bringing new goods and new technology to the market. Encouraging entrepreneurial activity for identifying productive capacities is critical, but improving only procedures is not enough if entrepreneurs are not innovative. Innovative abilities of entrepreneurs should also be improved through investing in skills and education of entrepreneurs. It is innovative entrepreneurship that is most desirable for growth.

### **Policy Issues for Structural Transformation**

In the light of the above analyses, important policy issues are identified for better performance in enhancing productivity and competitiveness and achieving successful structural transformation towards higher development in D-8 countries.

Evidence suggests that reform priorities for better productivity growth differ across countries. Low income countries are particularly in need of improved education and infrastructure, good quality economic institutions, reduced barriers for better market efficiency and effective competitiveness. Low income countries need to achieve rapid accumulation of capital, raising agricultural productivity and technology diffusion in labour intensive industries in order to maintain a dynamic growth path supported by productivity growth.

On the other hand, middle income countries need, among others, effective policies for investment promotion, quality higher education, investment on research and development, deepening of financial markets, more flexible and competitive goods and labour markets. Sectoral reallocation from agriculture to industry and services in these countries may already have taken a long way and these countries may need more efforts to increase their capacity to innovate and apply new knowledge and technologies. Middle income countries need also to achieve a greater flexibility to shift resources across sectors in order to improve productivity and competitiveness. Economic diversification, particularly in resource-rich countries, remains critical to achieve sustained growth through higher productivity and competitiveness levels.

# Part I

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## RECENT ECONOMIC DEVELOPMENTS IN THE WORLD AND D-8 COUNTRIES



## PART I

This part analyses the trends in major economic indicators for the D-8 countries, as a group, during the latest five-year period (2011-2015) for which the data are available. It investigates these trends in a comparative manner with their counterparts in the groups of other OIC, non-OIC developing and developed countries as well as with the world economy as a whole and highlights a number of constraints and challenges confronting the D-8 countries in their efforts to enhance their economic development and progress.

The first chapter evaluates the developments in production, growth and employment. This includes GDP, GDP per capita, GDP growth, decomposition of GDP, inflation, fiscal balance, labour force participation and unemployment. The second chapter deals with trade and finance indicators. This include export and import of goods and services, intra-OIC trade, current account balance, foreign direct investment flows, financial sector development, external debt and reserves, and official development assistance and remittances.



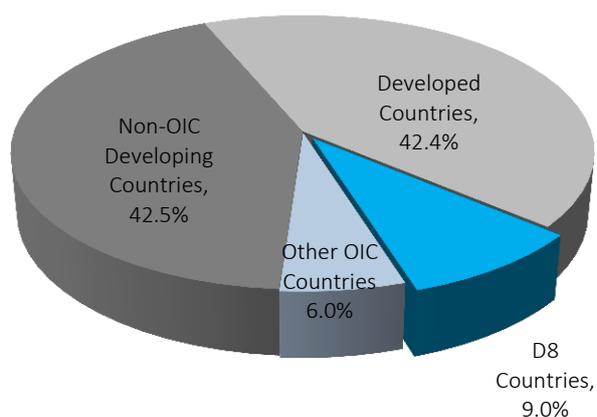
# 1 PRODUCTION, GROWTH AND EMPLOYMENT

The group of D-8 countries are well-endowed with potential economic resources in different fields and sectors, 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 D-8 countries as well as in the D-8 countries as a group. In 2015, having accounted for 14.6% of the world total population, D-8 countries produced as much as 9.0% of the world total GDP – expressed in current USD and based on PPP (Figure 1.1a). When measured in current prices, however, D-8 countries account only 4.9% of global production in 2015 (Figure 1.1b).

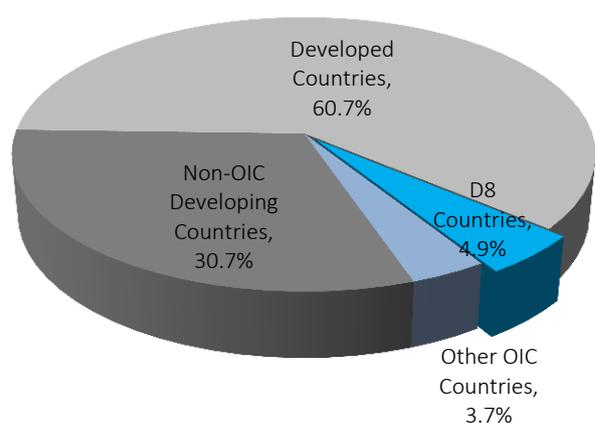
The global economic activity landscape has witnessed pivotal shift over the past several years and the dominance of developed countries group as the leading producer is on decline. During the period under consideration, the share of developed countries in global output has witnessed a downward trend, decreasing from 45.4% in 2011 to 42.4% in 2015. The estimates show that it is expected to decrease further to 41.3% by the end of 2017.

Over the last 5 years, the group of D-8 countries has increased its share in the world output only by 0.1 percentage point to reach 9.0% in 2015 (Figure 1.2). Considering the fact that the individual

**Figure 1.1a:** Gross Domestic Product, PPP Current USD (2015)



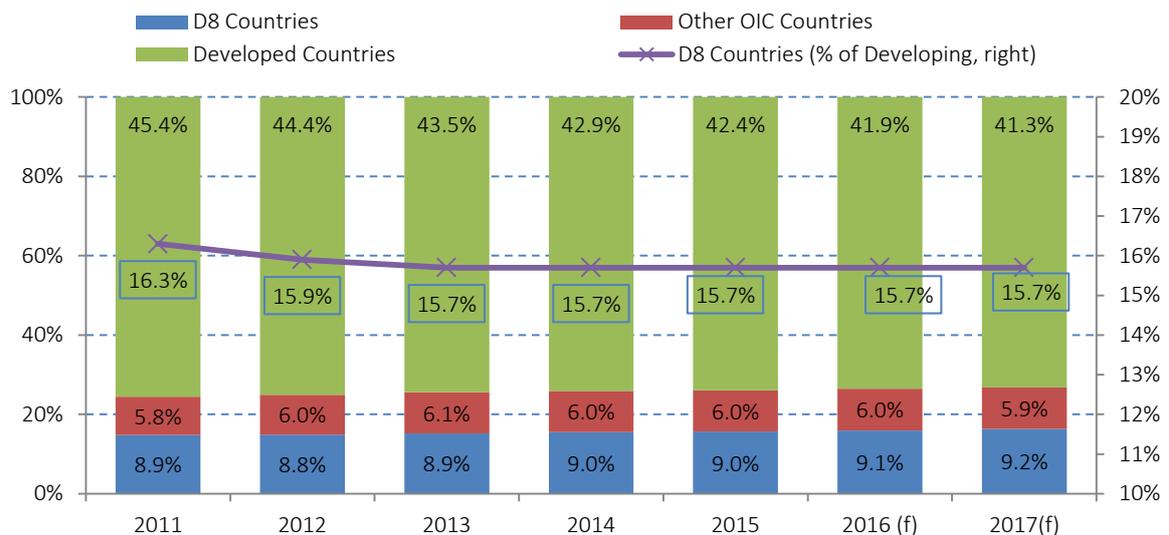
**Figure 1.1b:** Gross Domestic Product, Current USD (2015)



Source: IMF WEO Database April 2016.

countries such as United States and China had higher shares than that of the D-8 countries as a group, it can be stated that the contribution of the D-8 countries to the world output is below their potential. On the other hand, the share of the D-8 countries in the total GDP of developing countries has declined steadily and was recorded at 15.7 % in 2015, a decrease by 0.6 percentage points over the 5-year period under consideration (Figure 1.2).

**Figure 1.2: Gross Domestic Product, PPP Current USD**



Source: IMF WEO Database April 2016.

The decline in the share of the D-8 countries in total GDP of the developing countries indicates that the D-8 economies have performed poorer than non-D-8 developing countries in expanding their output. The projections for 2016 and 2017 indicate that the GDP of the D-8 countries as a whole will continue to grow and the share of the D-8 countries in the world output will increase to 9.1% in 2016 and 9.2% in 2017 (Figure 1.2).

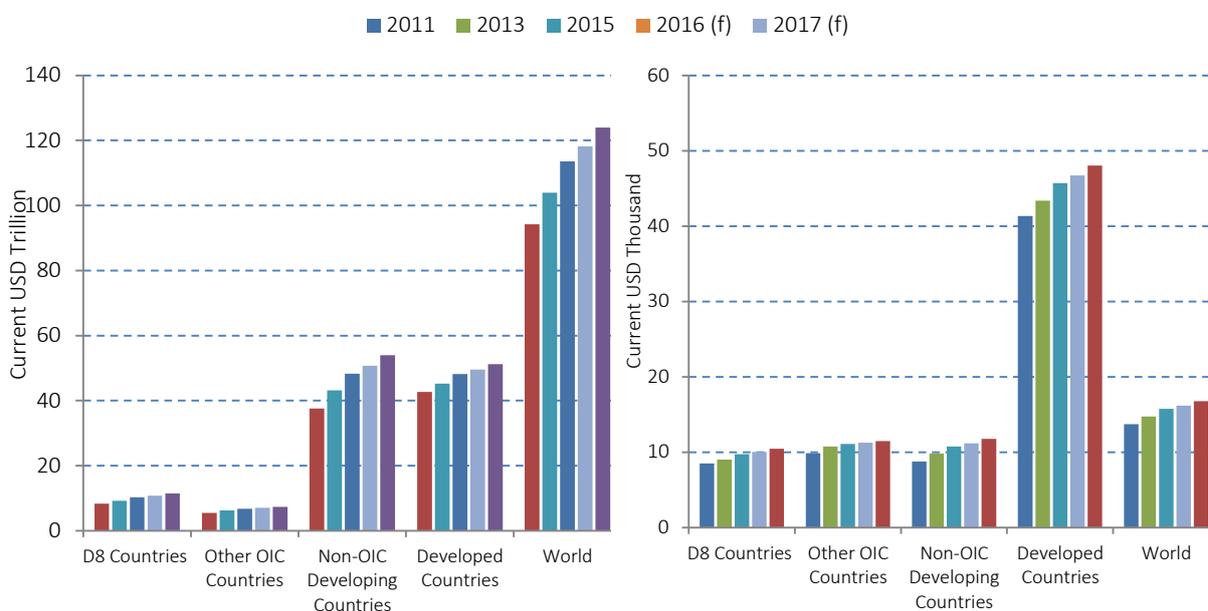
**Global GDP** – expressed in current USD and based on PPP – has witnessed an increasing trend over the period 2011-2015, reaching US\$ 113.5 trillion in 2015 compared to US\$ 94.2 trillion in 2011 (Figure 1.3, left). During the same period, developing countries witnessed more rapid increase in GDP as the total GDP in these countries climbed up from US\$ 51.5 trillion in 2011 to US\$ 65.3 trillion in 2015. On the other hand, developed countries witnessed comparatively a moderate increase as their GDP reached US\$ 48.2 trillion in 2015 compared to US\$ 42.7 trillion in 2011. During the same period, the average GDP per capita in the world – expressed in current USD and based on PPP – has increased continuously and reached US\$ 15,736 in 2015, compared to US\$ 13,711 in 2011 (Figure 1.3, right). Meanwhile, in 2015 GDP per capita was recorded at US\$ 45,693 in developed countries and US\$ 10,607 in developing countries. In other words, GDP per capita in developed countries is about 4.3 times higher than that in developing countries. This huge gap between developing and developed countries is expected to continue in coming years.

On the other hand, the global economic activity landscape has witnessed pivotal shift over the past several years and the dominance of developed countries group as the leading producer is on decline. During the period under consideration, the share of developing countries in global output

has witnessed an upward trend increasing from 54.6 % in 2011 to 57.6% in 2015. The estimates show that the share of developing countries will climb up to 58.7% by the end of 2017. During the same period, the share of developed countries has declined from 45.4% in 2011 to 42.4% in 2015 and it is expected to decrease further to 41.3% by the end of 2017.

D-8 countries also witnessed an increasing trend in economic activity and their GDP increased from US\$ 8.4 trillion in 2011 to US\$ 10.3 trillion in 2015. During the same period, other OIC countries and non-OIC developing countries experienced a more rapid increase in their output as the total GDP. In non-D-8 developing countries, the total GDP reached US\$ 55.1 trillion in 2015, a level which is well above the US\$ 43.1 trillion they recorded in 2011. Though the share of D-8 countries in the world total GDP has increased steadily and was recorded at 9.0 % in 2015, their share in the total GDP of developing countries group declined from 16.3% in 2011 to 15.7 % in 2015.

**Figure 1.3: Total GDP (left) and GDP per capita (right), based on PPP**

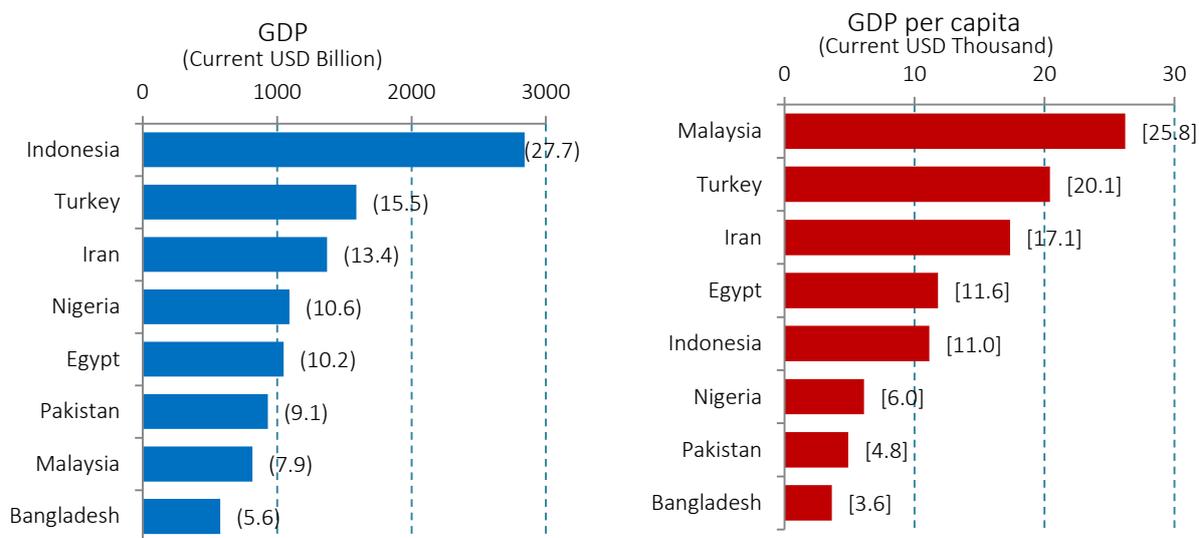


Source: SESRIC staff calculations based on IMF WEO Database April 2016, (f: forecast).

During the same period, the average **GDP per capita** in the D-8 countries has increased continuously and reached US\$ 9,712 in 2015, compared to US\$ 8,493 in 2011 (Figure 1.3, right). The gap between the average per capita GDP levels of the D-8 countries and other developing countries has widened over the years. The average per capita GDP differential between D-8 countries and other developing countries was recorded at US\$ 1,080 in 2015. 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 D-8 countries has also diverged from the world average as the gap increased from US\$ 5,218 in 2011 to US\$ 6,023 in 2015.

Furthermore, it is observed that the total GDP of the D-8 countries is still produced by a few member countries. In 2015, the top three D-8 countries in terms of the volume of GDP produced 57% of the total D-8 countries output (Figure 1.4, left). Indonesia has the highest share with 27.7%, followed by Turkey (15.5%) and Iran (13.4 %). Among the D-8 countries, Malaysia registered the

**Figure 1.4: D8 Countries by GDP and GDP per capita (2015)**



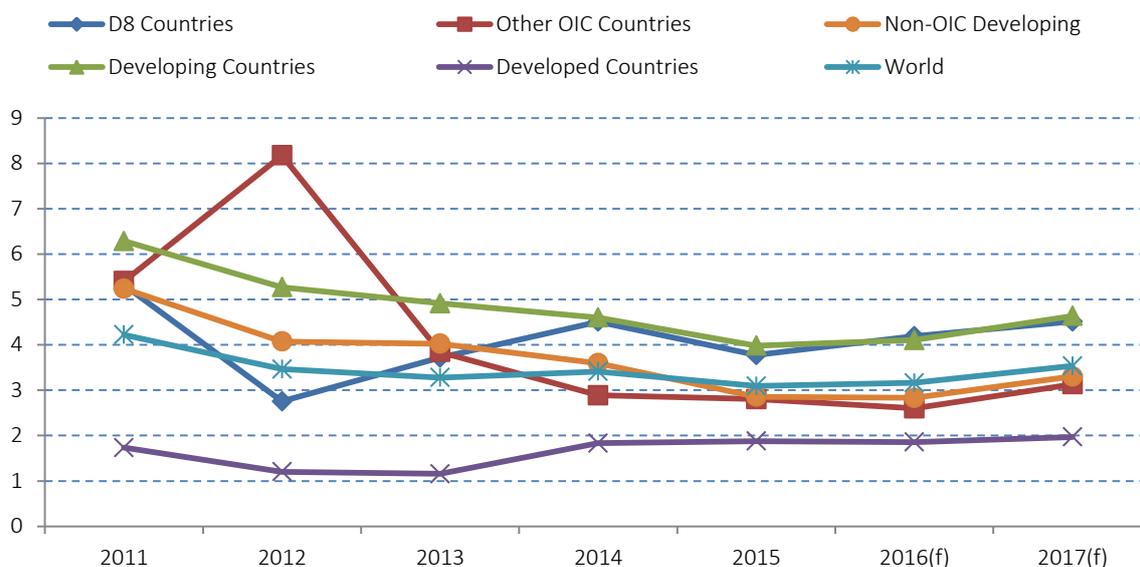
Source: IMF WEO Database October 2016 and SESRIC BASEIND Database. The numbers in round (square) brackets on left (right) hand side indicate the share (ratio) of the related country's GDP (GDP per capita) in the overall GDP (to the average GDP per capita) of the OIC countries as a group.

highest GDP per capita in 2015 followed by Turkey and Iran (Figure 1.4, right). The per capita GDP of Malaysia was 7.2 times higher than the average of Bangladesh, a situation which reflects a high level of income disparity among the D-8 countries.

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, **GDP growth rate** has witnessed a declining trend in the recent years (Figure 1.5). In 2013, the world economic growth rate was recorded at 3.3 % compared to 4.2% in 2011. Growth in the global economy slightly increased to 3.4% in 2014, which could not be sustained and declined to 3.1% in 2015. The consecutive poor performance of the global economy is largely influenced by the economic slowdown and rebalancing in China, historic sharp decline in commodity prices, especially for oil, severe macroeconomic conditions in Brazil and Russia and increasing concerns about the lack of macro policy space in emerging and developing economies. Furthermore, the uncertainty caused by the UK's referendum on EU membership and the risks of a de-anchoring of inflation expectations coupled with the tighter financial conditions and large debts in many countries of euro area, has further hampered the prospects for the global economic growth (IMF, 2016). After demonstrating signs of recovery at the beginning of 2016, the growth rate of the world economy is predicted to reach 3.2% by the end of the year. The positive economic outlook for the USA and Euro area in 2016, supported by the decline in oil prices, seems to fuel the world economic growth. As a result, by following the positive momentum in 2016, it is predicted that the global economy will grow by 3.5% in 2017 (Figure 1.5).

In general, developing countries have fuelled the world output growth rate since 2011, but the growth rates in these countries are steadily declining. While major developed economies remained sluggish, their overall growth performance started to improve. Nevertheless, developing countries are estimated to grow by 4.0% in 2015, which is almost two percentage points higher than the

**Figure 1.5: GDP Growth in the World**



Source: SESRIC staff calculations based on IMF, World Economic Outlook, April 2016.

developed countries, and will continue to be the engine of the growth in the world economy. Developing countries are expected to see an increase in the average growth rate that will climb up from 4.1% in 2016 to 4.6% in 2017.

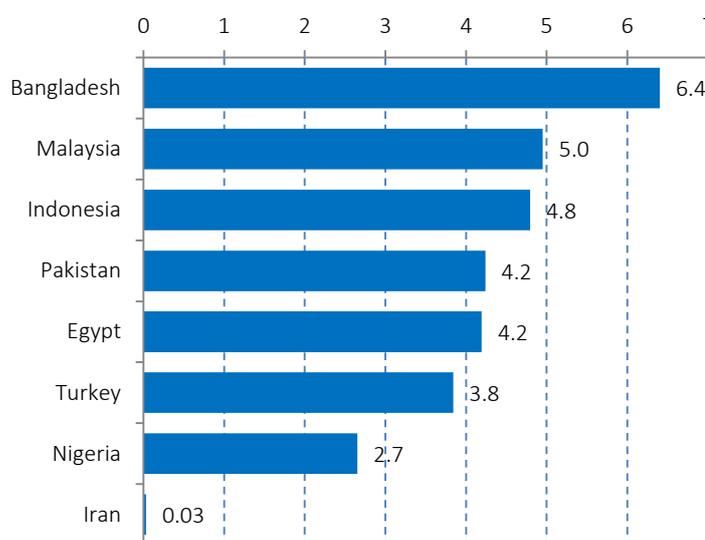
The GDP growth of D-8 countries has slowed down to 3.8% in real terms in 2015, as compared to 4.5% in 2014 (Figure 1.5). Nevertheless, the average rate of growth in D-8 countries is expected to show a better performance in 2016, with average growth rate forecasted to be around 4.2%. This recovery is expected to be consolidated further to 4.5% in 2017. These figures are better than the predicted average global growth rates (3.2% for 2016 and 3.5% for 2017) (Figure 1.5).

At the individual country level, Bangladesh, with a growth rate of 6.4% in 2015, was the fastest growing economy in the group of D-8 countries, followed by Malaysia (5.0%) and Indonesia (4.8%) (Figure 1.6).

Globally, **GDP per capita** has witnessed significant recovery since 2010. This positive trend continued in 2011 with 3.4% growth rate. Nevertheless, this recovery was short lived and growth rate decelerated to 2.2% in 2015. The global real GDP per capita is forecasted to grow by 2.3% in 2016 and 2.7% in 2017. As it was in the case of real GDP growth, developing countries remained at the helm and drive the growth in per capita GDP. In 2015, growth in GDP per capita was recorded at 2.9% in developing countries, also expected to increase to 3.0% in 2016 and 3.6% in 2017. Developed countries, on the other hand, witnessed comparatively very low growth rate of 1.3% in 2015, which is estimated to decrease to 1.2% in 2016 before climbing up again to 1.3% in 2017.

The average growth rate of the real per capita GDP in D-8 countries has been positive during the period 2011-2015 (Figure 1.7). This implies that the real GDP in D-8 countries has grown on average faster than the population. This can be interpreted as a real increase in standards of living in the D-8 community. Nonetheless, following a short-lived recovery in 2011, the average real GDP per capita growth rate in D-8 countries had started to decline and was recorded at 2.3% in 2015, as compared to 3.5% in 2011. The average real GDP per capita growth rate, on the other hand, is forecasted to increase slightly to 2.7 % in 2016 and 2.9% in 2017.

**Figure 1.6: GDP Growth Rates in D8 Countries (2015)**

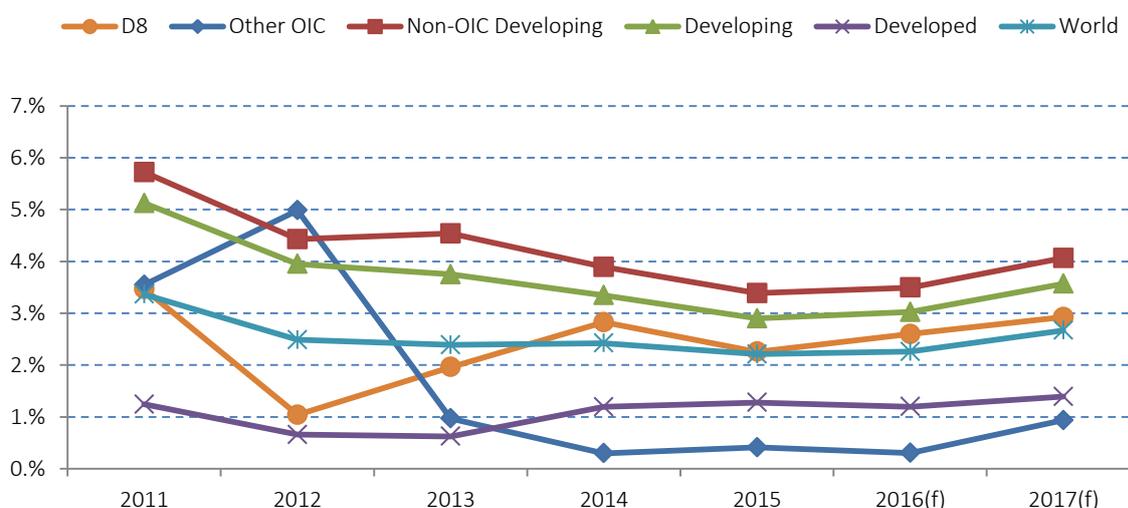


Source: IMF WEO Database April 2016 and SESRIC BASEIND Database.

At the individual country level, Bangladesh with a per capita GDP growth rate of 5.3% in 2015 was the fastest growing economy in the group of D-8 countries, followed by the other two South Asian countries Malaysia (3.9%) and Indonesia (5.3%), although the growth rate of real per capita GDP in Iran (-1.2%) and Nigeria (-0.1%) were negative in 2015 (Figure 1.8).

In terms of **value-added by major sectors**, according to the latest estimates, as shown in Figure 1.9, service sector has the largest share of global total output in 2014 (66.0 %), followed by the

**Figure 1.7: Real GDP per capita Growth, Annual Percentage Change**



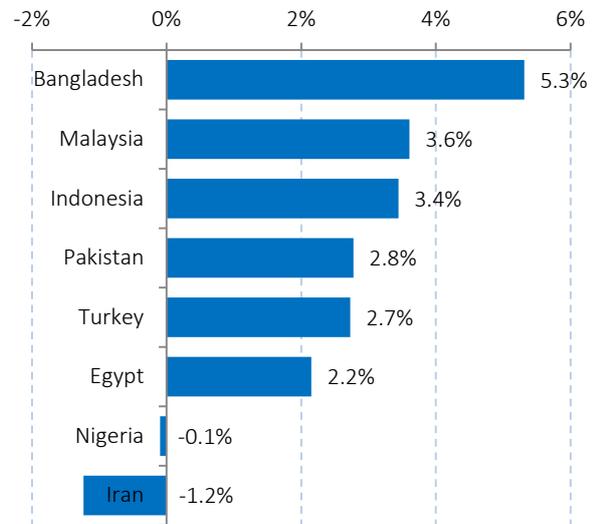
Source: SESRIC staff calculations based on IMF WEO Database April 2016.

industrial sector (both manufacturing and non-manufacturing) (29.5%), while the share of agriculture, fishing and forestry is relatively small (4.5%). Over the years, the share of services has registered a decline of 1.7 percentage points from 2000 to 2014 whereas the shares of non-manufacturing industry and agriculture sectors increased by 1.3 and 1.0 percentage points respectively during the same period.

The analysis of value-added by major sectors in the total GDP of the developing countries including D-8 countries also shows a similar structure. The share of agriculture in the total GDP of D-8 countries has gradually declined from 14.3% in 2000 to 13.2% in 2011, but it started to increase slowly over the last three years (Figure 1.9). Yet, at the individual country level, in 2014, the agricultural sector accounted for more than 20% of the total value-added in Pakistan (25.1%) and Nigeria (20.2%).

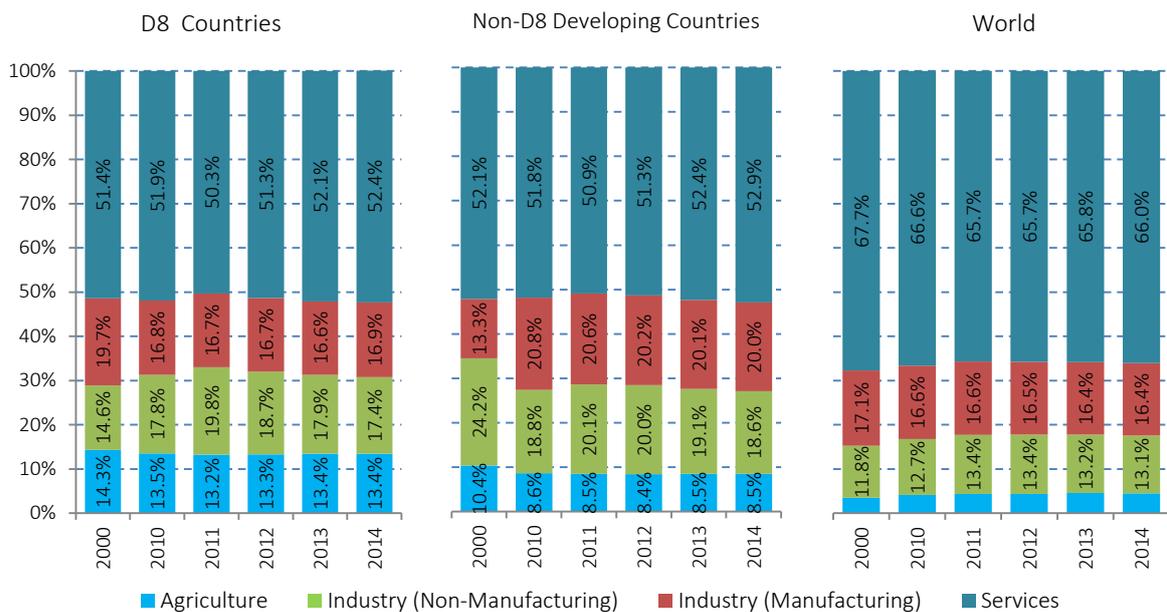
In contrast, the services sector continued to play a major role in the economies of D-8 countries as the most important source of income. The average share of the services sector in D-8 economies has increased gradually in recent years from 50.3% in 2011 to 52.4% in 2014. Similarly, for non-D-8 developing countries, the services sector continued to account for over half of the total GDP and its share was recorded at 52.9% in 2014 (Figure 1.9).

**Figure 1.8: GDP per capita Growth Rates in D8 Countries (2015)**



Source: IMF WEO Database April 2016.

**Figure 1.9: Value-added by Major Sectors of the Economy (% of GDP)**



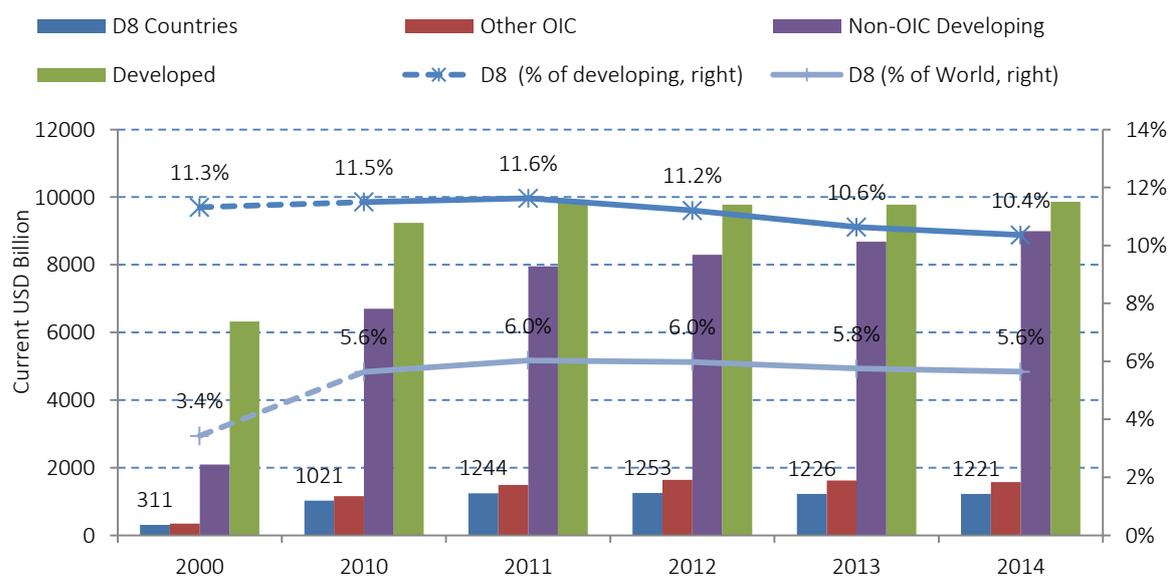
Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, August 2016.

The share of Industry sector – including manufacturing – remained rather stable around 34.3% of the total GDP of the D-8 countries during the period under consideration (Figure 1.9). Nonetheless, compared to global average where the industrial sector's contribution to the GDP averaged at 29.5% in 2014, the latter apparently constitutes a larger portion of the economic activity in the D-8 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. Figure 1.9 reveals that, in year 2000, the share of manufacturing sector in total GDP of the D-8 countries was 19.7%. In 2010, however, the share of the sector contracted significantly to 16.8% before decreasing slightly to 16.6% in 2013. Most recently, in 2014, the share of the manufacturing industry stands at 16.9% which is still below the 19.7% level observed in year 2000.

According to Figure 1.10, the share of the D-8 countries as a group in the world total industrial production has reached 5.6% in 2014. This marks 2.2 percentage points increase since year 2000. Despite this upward trend, the share of the D-8 countries in the total gross fixed capital formation of the developing countries has been on decline and contracted from 11.3% to 10.4% over the same period. This indicates the relatively poor performance shown by the D-8 countries in industrial production, as compared to other developing countries.

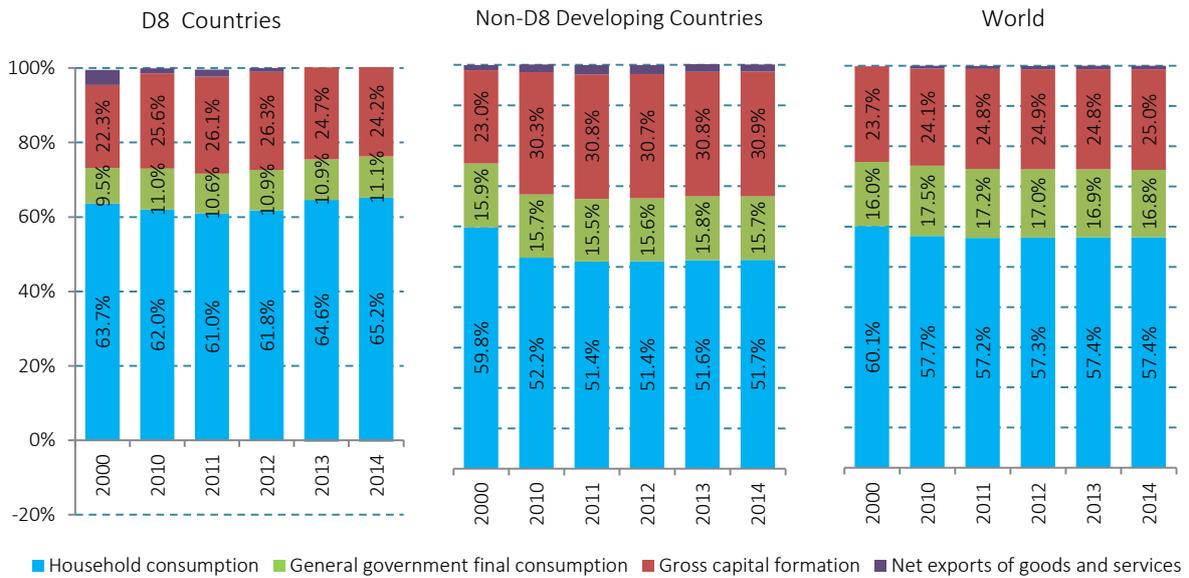
The analysis of global **GDP by major expenditure items** reveals that the share of final consumption (both by household and government) continued to be the highest in the total GDP over the years, although the share of household consumption declined globally by 2.8 percentage points during the period 2000-2014. As shown in Figure 1.11, in 2014 household consumption in D-8 countries accounted for the lion share of 65.2% followed by gross capital formation (24.2%) and general government final consumption (11.1%), while the share of net exports accounted -0.3%. Similarly, in global level the share of net export was negligible and recorded 0.9% in 2014. In addition, the share of final consumption in total GDP of non-D-8 developing countries was recorded at 67.5% in 2014 and household consumption, with a 51.7% share in GDP, was again the main source of final consumption expenditure in these countries.

**Figure 1.10: Industrial Production, Volume and Share (right)**



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, August 2016.

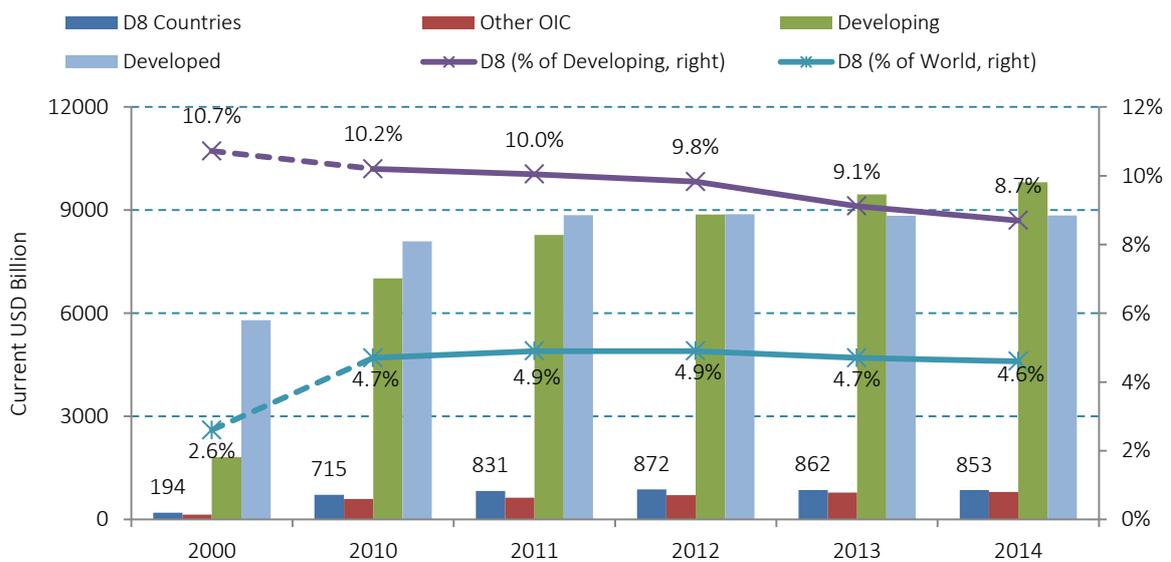
**Figure 1.11: GDP by Major Expenditure Items (% of GDP)**



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, August 2016.

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 1.11, 24.2% of the total GDP generated in D-8 countries was invested in productive assets in year 2014. In comparison, non-D-8 developing countries on average channelled 30.9% of their GDP into productive investments. The share of gross capital formation in the GDP of D-8 countries as a group has increased by 1.9 percentage points over its year 2000 level of 22.3%, while it increased by as much as 7.8% percentage points in the group of non-D-8 developing countries over the same period. Yet, one can argue that gross capital formation, as an indicator, is flawed primarily by the

**Figure 1.12: Gross Fixed Capital Formation, Volume and Share (right)**



Source: SESRIC staff calculations based on UNSD National Accounts Main Aggregates Database, August 2016.

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 1.12 offers a look at the gross fixed capital formation trends in the D-8 countries in comparison to other OIC Countries and developing countries. According to Figure 1.12, the share of D-8 countries as a whole in world total fixed capital formation reached 4.6% in 2014. This marks 2.0 percentage points increase since year 2000. Despite this upward trend, the share of D-8 countries in the total gross fixed capital formation of the developing countries has been on decline and contracted from 10.7% to 8.7% over the same period. This indicates the relatively poor performance shown by the D-8 countries in accumulating investment capital, as compared to other developing countries.

In the area of **labour market**, 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 1.13, the average **labour force participation rate** in D-8 countries followed a slightly downward trend, which stood at 57.8% in 2015 that was lower than the world average (62.9%), and the average of other OIC countries (59.9%) and non-OIC developing countries (65.0%) as well as developed countries (60.0%). In case of labour force participation rate for the male population, D-8 countries recorded a rate of 77.6% compared to 76.1% in the world, 77.2% in other

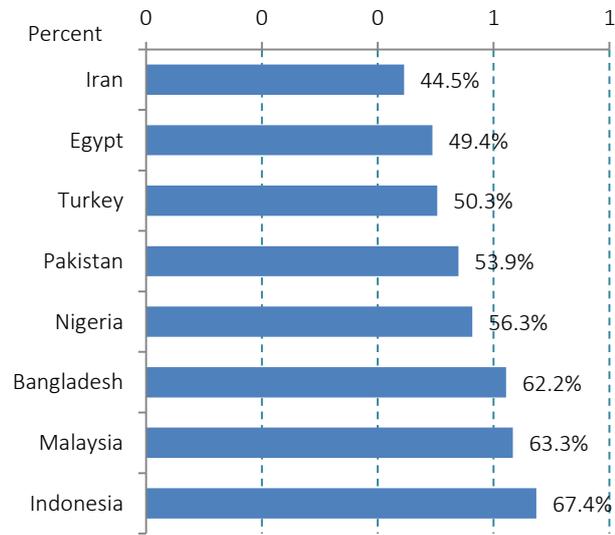
**Figure 1.13: Labour Force Participation Rates, 2000-2015**



Source: SESRIC staff calculations based on ILO, WESO 2016 Dataset.

OIC countries, 77.9% in non-OIC developing countries and 67.2% in developed countries. Although, D-8 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 D-8 countries was recorded at 37.9% in 2015, which is significantly lower than the world average of 49.6%, the average of 42.0% in other OIC countries and 52.1% in non-OIC developing countries and the average of 53.1% in developed countries. However, there is an upward trend in female participation rates in D-8. Since 2000, female participation rate increased from 37.3% to 37.9% in 2015. An upward trend in this indicator is also observed in the case of other OIC countries from 40.1% to 42.0% and developed countries from 51.6% to 53.1% between 2000 and 2015, while in non-OIC developing countries, female participation showed a downward trend and fell to 52.1% in 2015 from its level of 56.2% in 2000.

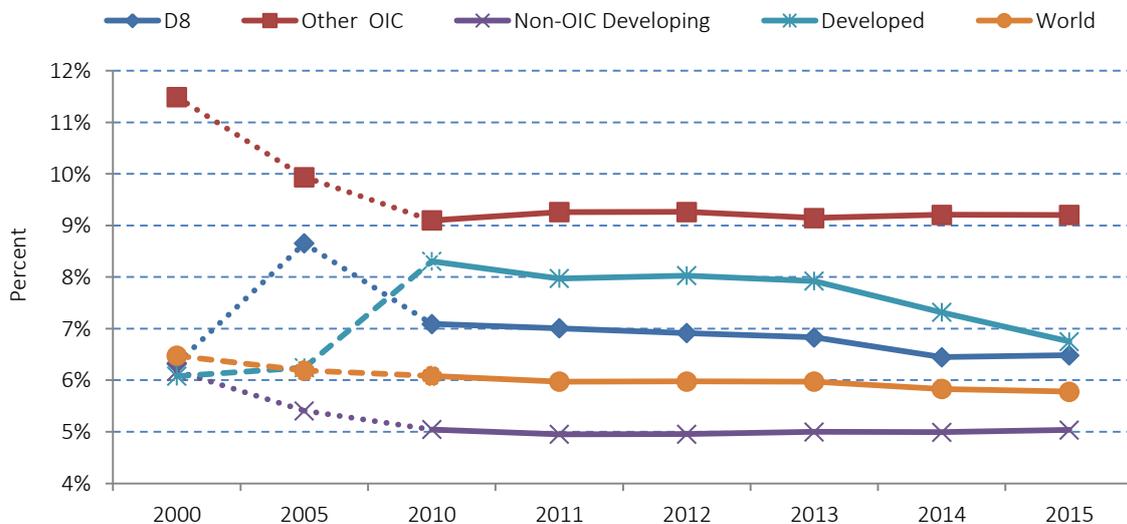
**Figure 1.14: Labour Force Participation Rates in D8 Countries, 2015**



Source: ILO, WESO 2016 Dataset.

At the individual country level, Indonesia registered the highest labour force participation rate in 2015 with a rate of 67.4%, followed by Malaysia (63.3%) and Bangladesh (62.2%) (Figure 1.14). On the other hand, the lowest participation rate was recorded in Iran with 44.5%. It is followed by Egypt (49.4%) and Turkey (50.3%).

**Figure 1.15: Total Unemployment Rate (% of Total Labour Force)**



Source: SESRIC staff calculations based on ILO, WESO 2016 Dataset

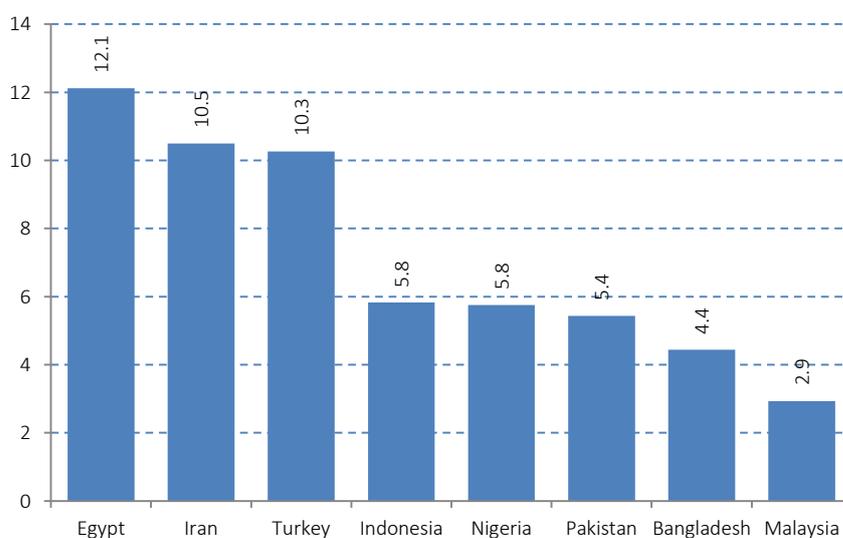
**Unemployment** remained one of the most challenging issues across the globe. According to the ILO World Employment and Social Outlook 2016 report, almost 197.1 million people were unemployed in 2014 around the world, an increase of almost one million compared with the year before and about 27 million more compared with pre-crisis level in 2007. This reflects the fact that employment is not expanding sufficiently fast to keep up with the growing labour force. Whereas, around 23 million people estimated to have dropped out of the labour market due to discouragement and rising long-term unemployment. According to the same report, the global unemployment rate remained at 5.8% of the global labour force, 0.1 percentage point lower than the year before. Due to mixed expectations about world economy for 2016, very little improvement is expected in the global labour market and the global unemployment rate is expected to stabilize at 5.9% between 2015 and 2017.

According to the latest available data, D-8 countries recorded higher average unemployment rates compared to the world and non-OIC developing countries in recent years (Figure 1.15). In 2015, total unemployment rates in D-8 countries reached 6.5%, which was higher the world average of 5.8% and the average of non-OIC developing countries 5.0%.

On the other hand, after the global financial crisis, unemployment rates in developed countries increased from a level around 6% to over 8%. During the period 2010-2015, average unemployment rate in developed countries remained higher than the rate in D-8 countries. Similarly, average unemployment rate in the other OIC countries also remained remarkably higher than the D-8 average during the period between 2000 and 2015.

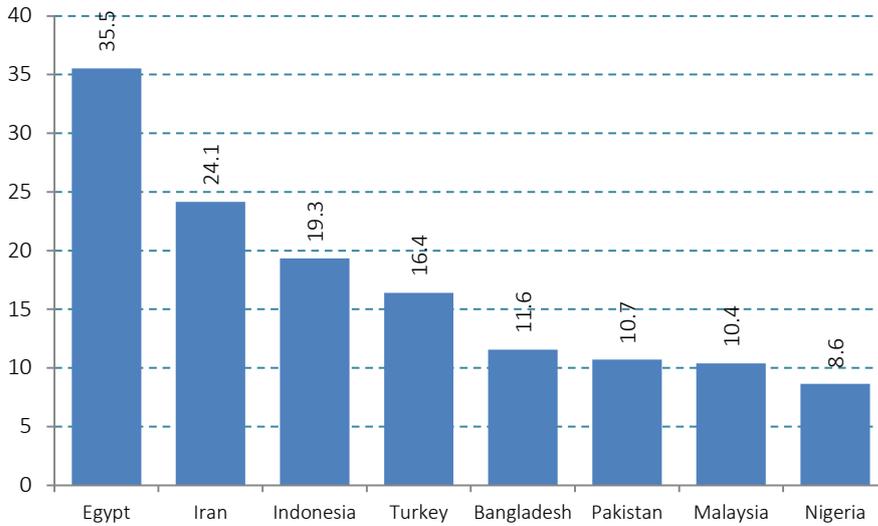
At the individual country level, unemployment rates varied among D-8 countries. The unemployed in 2015 constituted less than 5% of total labour force in Malaysia (2.9%) and Bangladesh (4.4%). Although the unemployment rates were accounted around 5% in Pakistan (5.4%), Nigeria (5.8%) and Indonesia (5.8%), in some D-8 countries, namely Egypt (12.1%), Iran (10.5%) and Turkey (10.3%), unemployment continued to be a serious concern, remained more than 10% (Figure 1.16).

**Figure 1.16: Total Unemployment Rates in D-8 Countries**



Source: ILO, WESO 2016 Dataset.

**Figure 1.17: Youth Unemployment Rates in D-8 Countries**

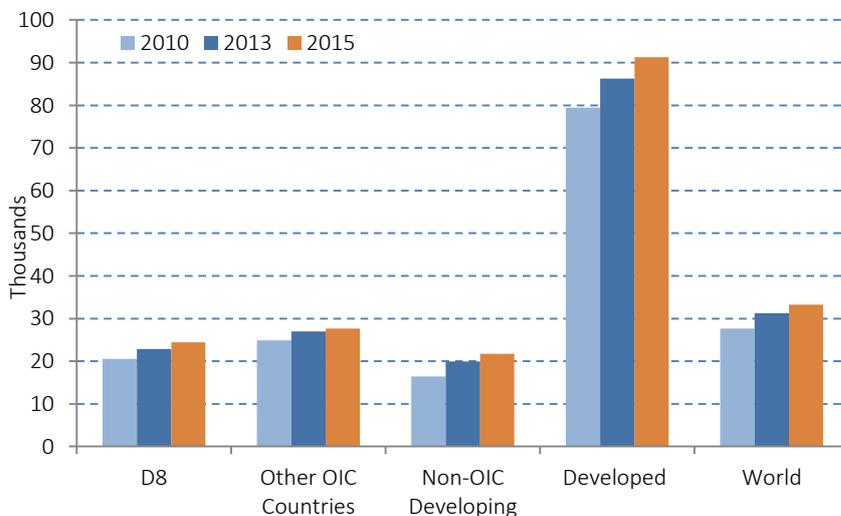


Source: ILO, WESO 2016 Dataset.

unemployment rate has reached 13.1% in 2015, which is almost three times as high as the adult unemployment rate (ILO, 2015). It is particularly high in the Middle East and North Africa (28.2%). Although the youth unemployment in D-8 countries (15.4%) accounted more than the world average of 13.1% in 2015, there are remarkable discrepancies in youth unemployment rates across D-8 countries. Nigeria (8.6%), Malaysia (10.4%), Pakistan (10.7%) and Bangladesh (11.6%) were the countries with lowest unemployment rates in 2015, which also had less unemployment rate than the world average, while youth unemployment rate in Egypt was above 35% (Figure 1.17).

**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 1.18: Labour Productivity (GDP per worker, US\$ PPP)**

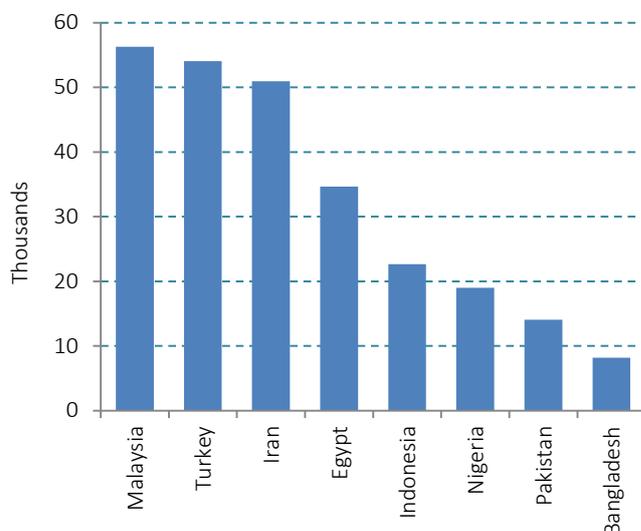


Source: SESRIC staff calculations based on ILO, WESO 2016 Dataset,

Youth (aged 15 to 24 years) continued to suffer from lack of decent job opportunities across the globe. According to the latest ILO estimates, some 73.4 million young people were unemployed in 2015. There were 31.5 million fewer young people in employment in 2015 than in 2007, while the global youth

unemployment rate has reached 13.1% in 2015, which is almost three times as high as the adult unemployment rate (ILO, 2015). It is particularly high in the Middle East and North Africa (28.2%). Although the youth unemployment in D-8 countries (15.4%) accounted more than the world average of 13.1% in 2015, there are remarkable discrepancies in youth unemployment rates across D-8 countries. Nigeria (8.6%), Malaysia (10.4%), Pakistan (10.7%) and Bangladesh (11.6%) were the countries with lowest unemployment rates in 2015, which also had less unemployment rate than the world average, while youth unemployment rate in Egypt was above 35% (Figure 1.17).

**Figure 1.19: Labour Productivity in D-8 Countries (2015)**

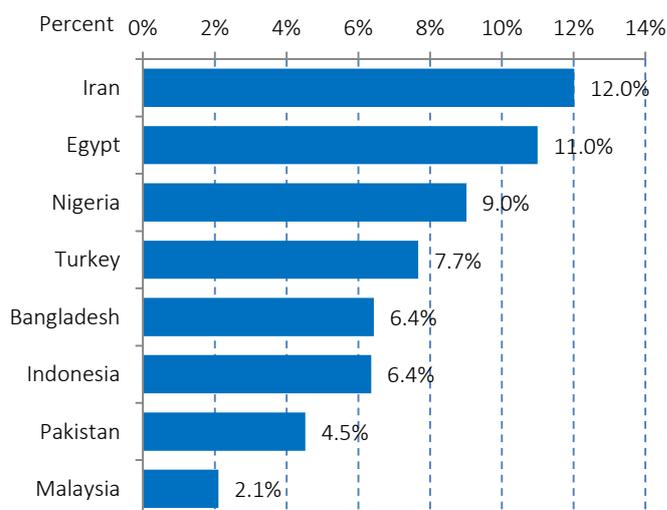


Source: ILO, WESO 2016 Dataset.

At the global level, labour productivity has witnessed an increasing trend during the period 2010-2015. As shown in Figure 1.18, output per worker in D-8 countries has increased from US\$ 20,562 in 2010 to US\$ 24,396 in 2015. The labour productivity gap between the developed and developing countries remained substantial throughout this period as output per worker in the developed countries was estimated at US\$ 91,214 in 2015 compared to just US\$ 21,730 in non-OIC developing countries and US\$ 27,669 in other OIC countries, expressed in constant 2011 international dollar in PPP. This means that an average worker in the group of non-OIC developing countries produces only 23.8% of the output produced by an average worker in the developed countries and an average worker in other OIC countries produces only 30.3% of the output produced by an average worker in the developed countries.

At the individual country level, Malaysia registered the highest output per worker with US\$ 56,263 in 2015, followed by Turkey (US\$ 54,038) and Iran (US\$ 50,949). Among the D-8 countries, the lowest labour productivity level was recorded in Bangladesh (US\$ 8,167) followed by Pakistan (US\$ 14,065) and Nigeria (US\$ 18,999) (Figure 1.19).

**Figure 1.20: D8 Countries by Annual Average Inflation (2015)**

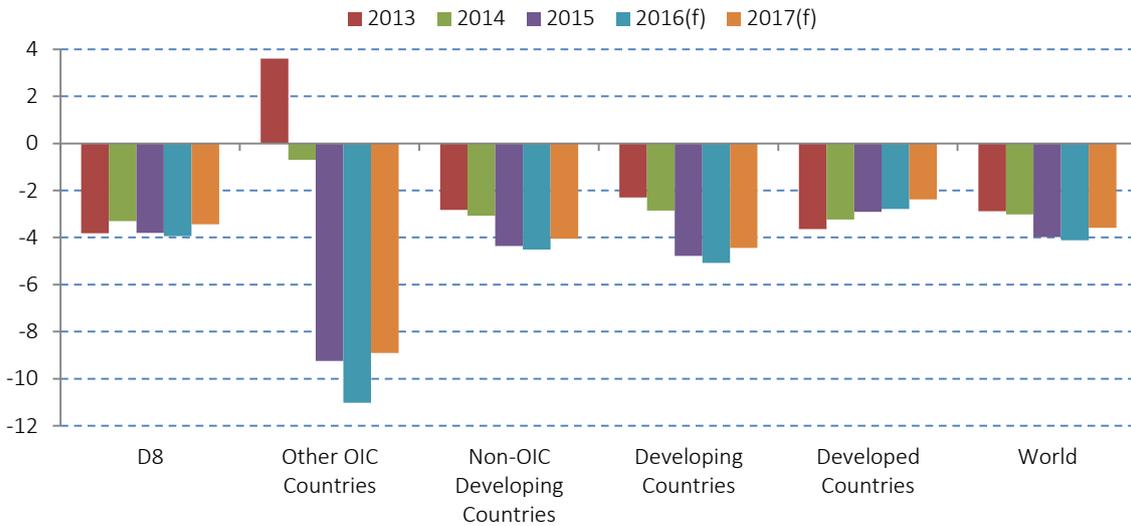


Source: IMF WEO Database April 2016 and SESRIC BASEIND Database.

**Inflation** is on decline across the globe reflecting primarily the impact of decline in prices for oil and other commodities, and weakening demand in some economies like euro area and Japan. The latest estimates of IMF show that global inflation rate has decreased from 5.1% in 2011 to 2.8% in 2015, and it is expected to remain at 2.8% in 2016.

Moreover, price volatility remained a major concern especially for the developing countries (Figure 1.20). 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

**Figure 1.21: Fiscal Balances (% of GDP)**



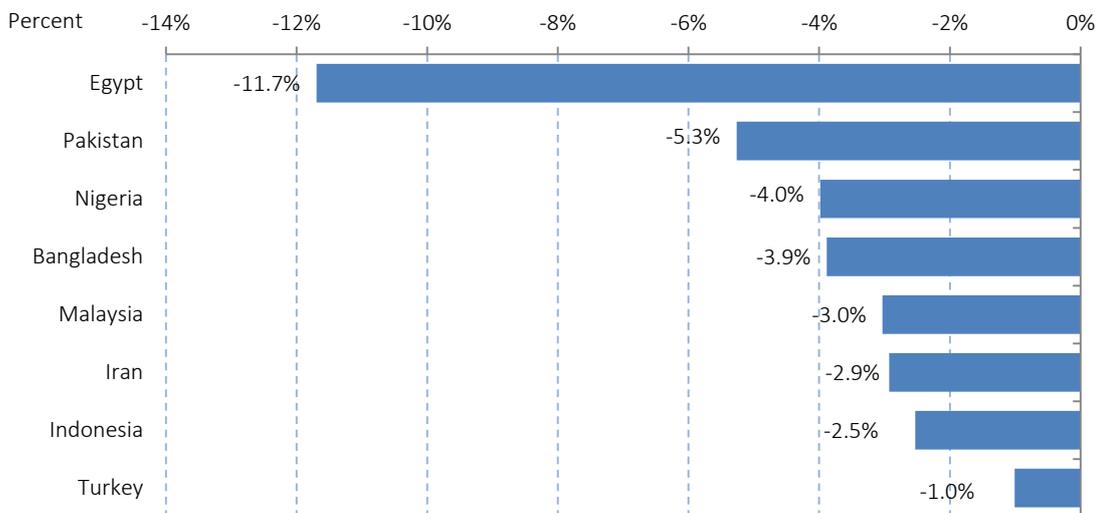
Source: IMF WEO Database April 2016 and SESRIC BASEIND Database.

consumer prices remained below one in 2015 and despite an upward trend inflation rate is expected to remain less than 1% in 2016.

In the short-term outlook, inflationary pressures are also projected to remain contained for D-8 countries. At the individual country level, Iran recorded the highest average consumer prices inflation rate of 12% in 2015 followed by Egypt (11.0%), Nigeria (9.0%) and Turkey (7.7%), although Malaysia (2.1%) and Pakistan (4.5%) recorded the average less than 5.0% (Figure 1.20).

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 1.21, world fiscal balance deficit as

**Figure 1.22: D8 Countries by Fiscal Balance % of GDP (2015)**



Source: IMF WEO Database April 2016 and SESRIC BASEIND Database.

a percentage of GDP witnessed an increase from -3.5% in 2011 to -4.0% in 2015. An opposite trend is being observed in the developed countries group where fiscal balance deficit as percent of GDP has declined from -6.2% in 2011 to -2.9% in 2015. This ratio is expected to decrease to -2.8% and -2.4% in 2016 and 2017 respectively for these countries. Developing countries also have registered negative fiscal balances but remained in relatively better position than the developed countries during the period under consideration. However, in 2015, the ratio was observed at -4.8% for developing countries group and it is expected to increase to -5.1% in 2016 before declining to -4.4% in 2017.

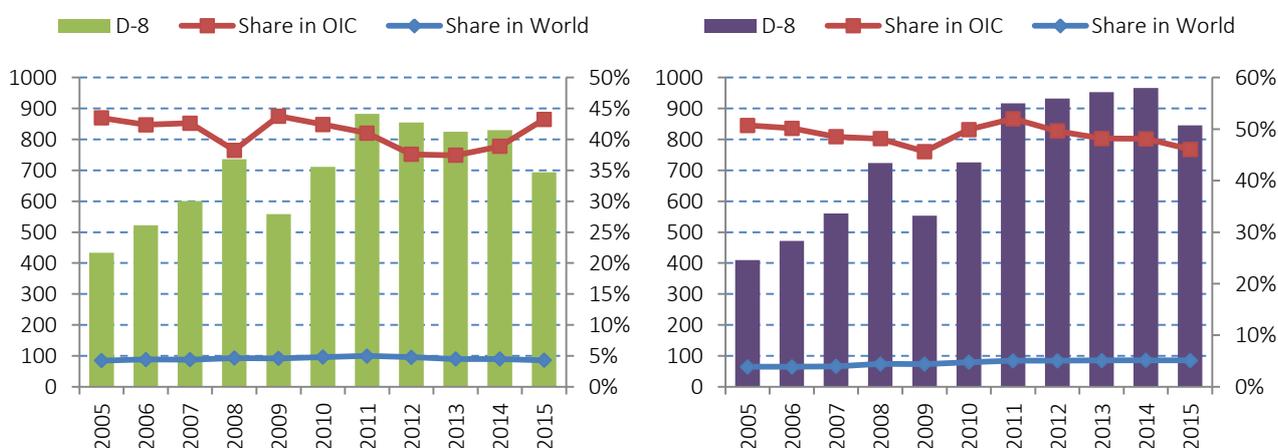
During the period under consideration, D-8 countries as a group witnessed a negative trend. In 2015, D-8 countries recorded fiscal balance of -3.8% of GDP (Figure 1.22). The fiscal deficit is expected to increase to -3.9% in 2016 before declining to -3.4% in 2017. At the individual country level, members of D-8 have not recorded fiscal balance surplus in 2015. Among these countries, lowest fiscal deficit was recorded by Turkey (-1.0%), followed by Indonesia (-2.5%), Iran (-2.9%) and Malaysia (-3.0%).

## 2 TRADE AND FINANCE

The total value of world **merchandise exports**, according to the IMF Directions of Trade Statistics (DOTS), was recorded at US\$ 16.4 trillion in 2015, as compared to US\$ 18.7 trillion in 2014. This corresponds to 12% contraction in total world export volume and reflects the weakening of global economic activity. It is also the first time that world merchandise exports contracted after the global financial crisis in 2009. However, global reports predict that global trade volume will increase around 2.7% in 2016.

After the sharp fall in total merchandise exports from D-8 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\$ 882 billion in 2011 (Figure 2.1). This upward trend was weaker than those observed in other OIC countries, resulting in a decrease in the shares of D-8 countries in total OIC exports from 43.7% in 2009 to 41% in 2011. Since then, this upward trend has been reversed and total exports of D-8 countries started to fall again. In 2015, total exports of D-8 countries reached its lowest level since 2009 with US\$ 693 billion. Accordingly, the share of D-8 countries in total world exports plunged to 4.3% in the same year, compared to 5% in 2011, but its share in total exports of OIC countries increased to 43.2% in 2015 from 38.9% in 2014. This rise can be partly explained by falling commodity prices, where other OIC countries have significant concentration, which led to a fall in total exports of other OIC economies. Moving forward, to achieve long-term sustainable growth in merchandise trade

**Figure 2.1: Merchandise Exports and Imports (US\$ Billion)**



Source: IMF Directions of Trade Statistics (DOTS).

and higher share in total world exports, D-8 countries need more competitive economic sectors with significant diversification levels and higher technological intensity.

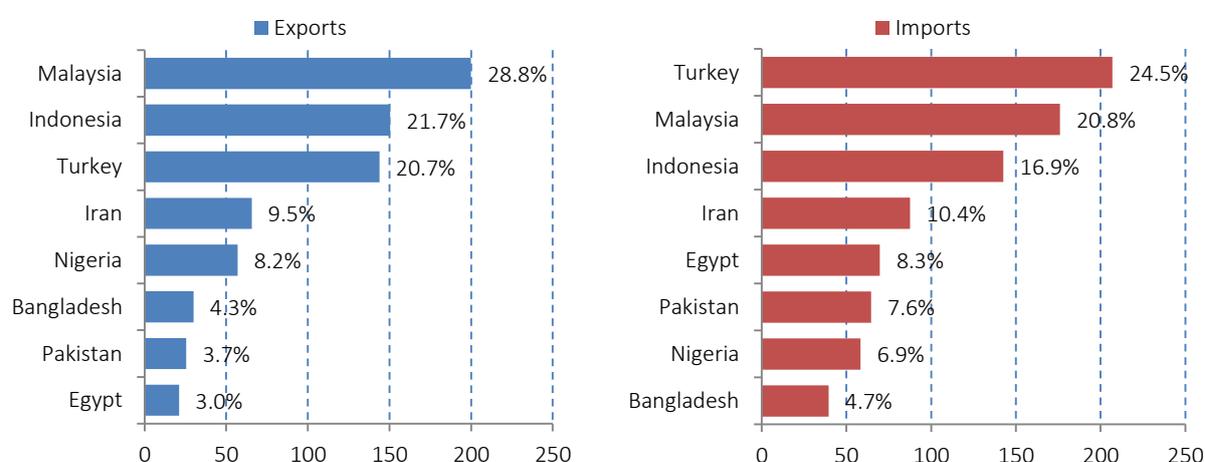
On the other hand, total **merchandise imports** of D-8 countries experienced a stronger post-crisis bounce-back and increased from \$553 billion in 2009 to \$966 billion in 2014 (Figure 2.1, right), recording a double-digit (11.8%) compound annual increase during this period. However, D-8 countries also witnessed a fall in imports in 2015, which decreased to US\$ 845 billion. Despite the fall in import volumes, the share of D-8 countries in global merchandise imports continued to remain stable at 5.1% during the period 2012-2015, compared to 3.9% in 2005. Similarly, their share in total merchandise imports of OIC countries was recorded at 46.1% in 2015, constantly falling from 52% since 2011.

In terms of the shares of the individual member countries in total merchandise exports from the D-8 economies, it has been observed that the bulk of total exports from the D-8 countries continued to be concentrated in three countries (Figure 2.2, left). In 2015, the top 3 largest exporters accounted for 71.3% of total merchandise exports of all member countries. Malaysia, with US\$ 200 billion of merchandise exports and 28.8% share in total D-8 exports, became the largest exporter in 2015. It was followed by Indonesia (US\$ 150 billion, 21.7%), Turkey (US\$ 144 billion, 20.7%), Iran (US\$ 66 billion, 9.5%) and Nigeria (US\$ 57 billion, 8.2%).

As in the case of exports, merchandise imports of D-8 countries were also heavily concentrated in a few countries. As depicted in the right panel of Figure 2.2, with US\$ 207 billion worth of imports, Turkey took the lead in 2015 in terms of volume of merchandise imports and accounted for 24.5% of total D-8 merchandise imports. It was followed by Malaysia (US\$ 176 billion, 20.8%), Indonesia (US\$ 143 billion, 16.9%), Iran (US\$ 88 billion, 10.4%) and Egypt (US\$ 70, 8.3%). Accordingly, the top 3 D-8 importers accounted for 62.2% of total D-8 merchandise imports.

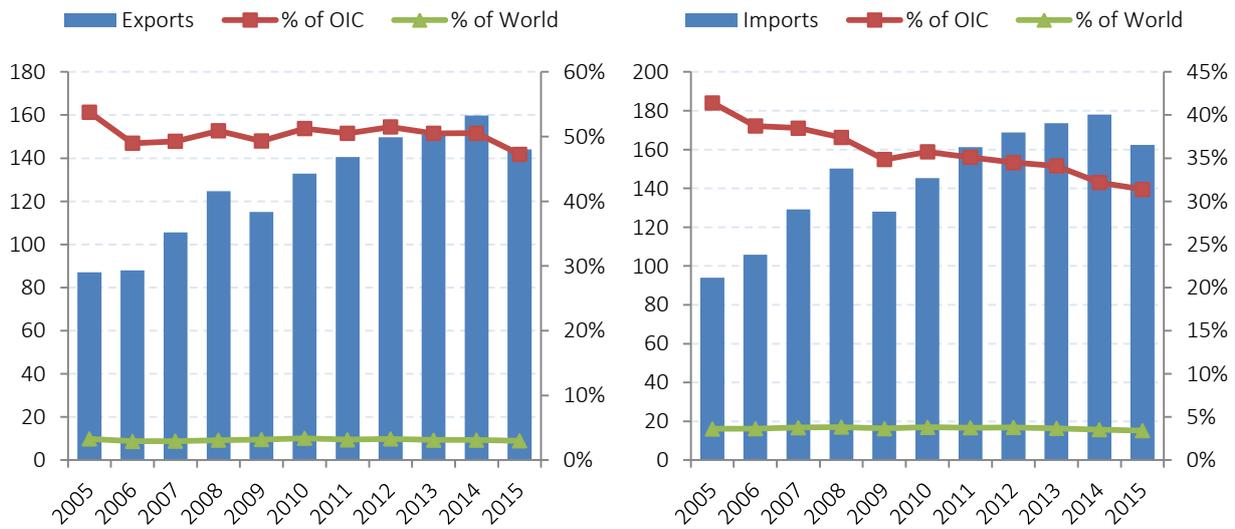
To sustain long-term economic growth, D-8 countries need to reduce the high reliance on exports of commodities that involve the least technological intensity, and devise and implement specific policies for adopting more advanced manufacturing methods to increase the share of more technology intensive commodities in exports. This is also necessary for increasing competitiveness of tradable products in international export markets.

**Figure 2.2: Total Exports and Imports by Country (2015, US\$ Billion)**



Source: IMF Directions of Trade Statistics (DOTS).

**Figure 2.3: Services Exports and Imports (US\$ Billion)**



Source: UNCTAD STATS.

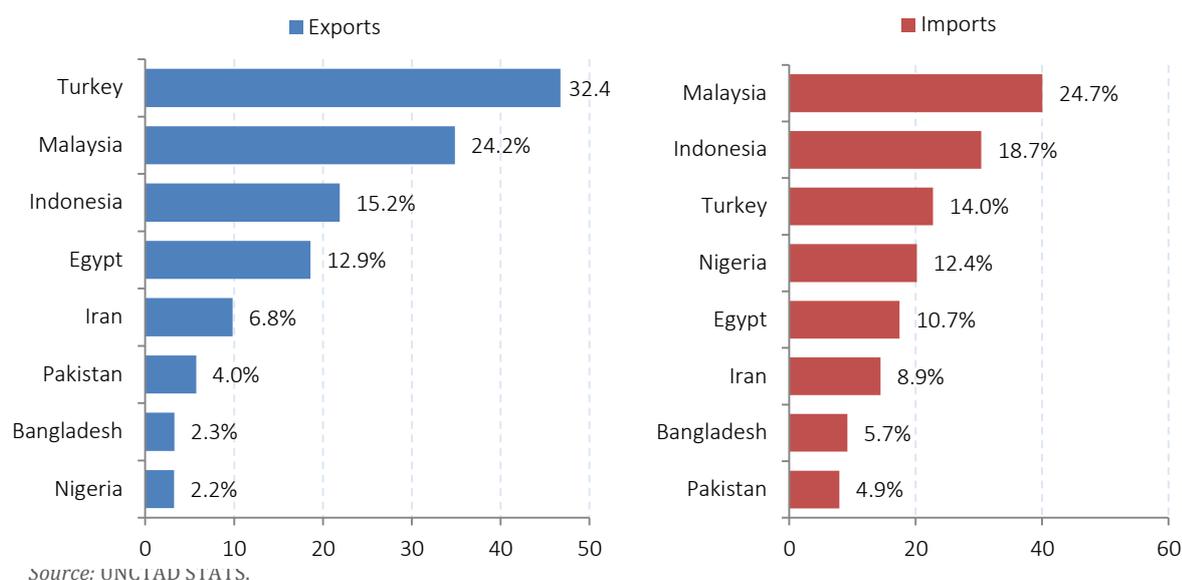
The services sector plays an increasingly important role in the global economy, and the growth and development of countries. It is also a crucial component in poverty reduction and access to basic services, including education, water and health services. The services sector has emerged as the largest 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 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 (IMF, 2014). 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, 2013).

Yet, these figures do not translate into a strong presence in world trade. In 2014, world **services exports** totalled only US\$ 4.8 trillion, compared to US\$ 16.4 trillion of merchandise exports in the same year. As a group, the D-8 countries remained net importers of services. According to UNCTAD, D-8 countries exported US\$ 144 billion worth of services in 2015, whereas their services imports were recorded at US\$ 162 billion in the same year (Figure 2.3). Between 2009 and 2014, services trade volume of D-8 countries exhibited a constant increase, but the year 2015 witnessed a fall in both exports and imports of services.

The share of D-8 countries in both services exports and imports of developing countries have followed a downward trend since 2010 (Figure 2.3). While D-8 countries accounted for 3.4% and 3.8% shares in total world services exports and imports in 2010, respectively, these shares dropped to 3% and 3.4% in 2015. Similarly, the collective share of D-8 countries in the total services exports of all OIC countries fell from 51.3% in 2010 to 47.3% in 2015 and their share in the total imports of OIC countries decreased from 35.7% to 31.4% during the same period.

Figure 2.4 shows the total services exports and imports of individual D-8 countries. Turkey, with US\$ 47 billion exports and 32.4% share in total D-8 services exports, was the top exporter in services in 2015 (Figure 2. 4, left). It was followed by Malaysia (US\$ 35 billion, 24.2%), Indonesia (US\$ 22 billion,

**Figure 2.4: Services Exports and Imports by Country (2015, US\$ Billion)**

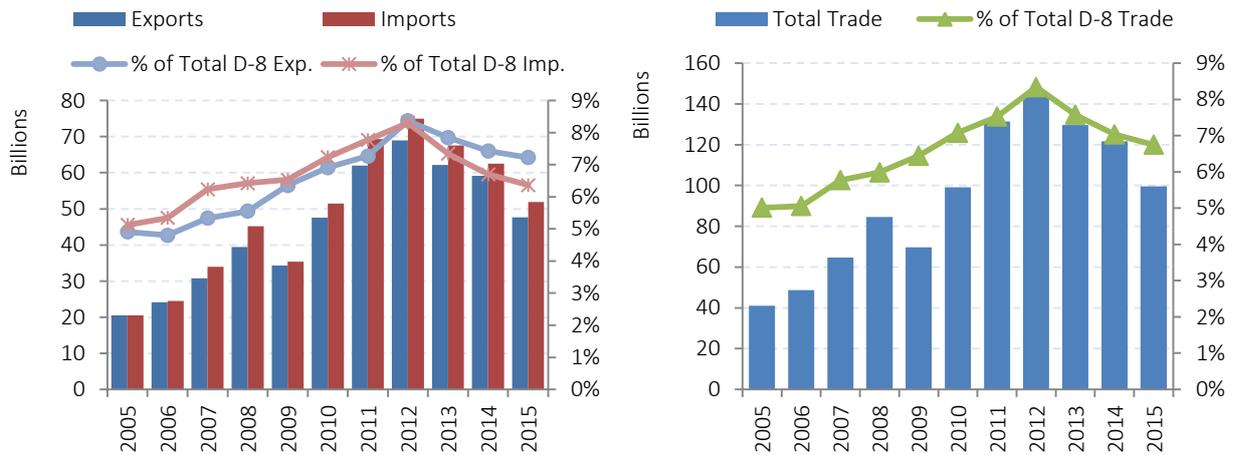


15.2%) and Egypt (US\$ 19 billion, 12.9%). In 2015, top 3 D-8 countries accounted for 71.8% of total D-8 services exports. As far as the service imports are concerned, Malaysia registered the highest service imports with an amount of US\$ 40 billion and 24.7% share in total D-8 services imports. It was followed by Indonesia (US\$ 30 billion, 18.7%), Turkey (US\$ 23 billion, 14%), Nigeria (US\$ 20 billion, 12.4%) and Egypt (US\$ 17 billion, 10.7%). The top 3 services importers collectively accounted for 57.4% of total services imports of D-8 countries.

After witnessing a sharp fall in 2009, total **merchandise trade among the D-8 countries** recovered quickly and, following a steep upward trend, reached US\$ 144 billion in 2012 (Figure 2.5, right). During 2013-2015, however, this number decreased steadily to US\$ 100 billion. Accordingly, the share of intra-D-8 trade increased from 8.3% in 2012 to 6.7% in 2015. During the period 2005-2012, this share had continuously increased, but this trend is reversed since 2012. In order to improve intra-D-8 trade figures, there is apparently a need for new strategies and programmes to boost trade among the member countries.

In 2012, **intra-D-8 exports** were recorded at US\$ 69 billion, but it decreased to US\$ 48 billion in 2015. Despite the major fall in export volume, the total amount can still be considered substantial when compared to total intra-D-8 exports of US\$ 34 billion in 2009 and US\$ 21 billion in 2005 (Figure 2.5, left). The share of intra-D-8 exports in total D-8 exports continued to decrease since 2012 and reached 7.2% in 2015. Similarly, the share of intra-D-8 imports has decreased from 8.3% in 2012 to 6.4% in 2015. In order to increase the share of trade among them in their total merchandise trade even further, D-8 countries can develop a trade preferential and also promote diversification and competitiveness of their tradable products taking into account their mutual needs and benefits from trade.

**Figure 2.5: Intra-D-8 Merchandise Exports and Imports (US\$ Billion)**

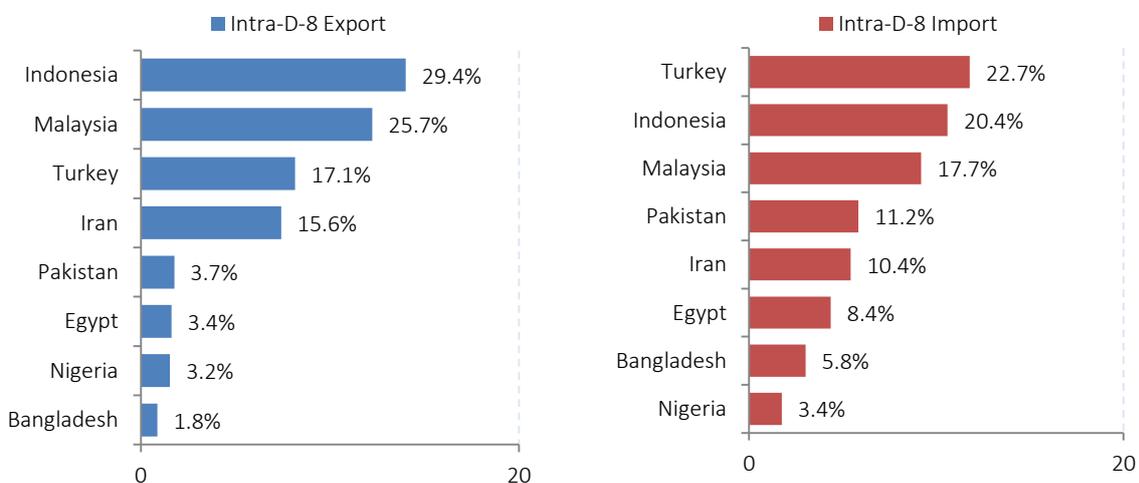


Source: IMF Directions of Trade Statistics (DOTS).

Figure 2.6 depicts the volume of their intra-D-8 exports and imports of the individual D-8 member countries. In 2015, top 4 intra-D-8 exporters accounted for as much as 87.8% of total intra-D-8 exports. Indonesia ranked first with US\$ 14 billion and 29.4% of total intra-D-8 exports, followed by Malaysia (US\$ 12.2 billion, 25.7%), Turkey (US\$ 8.2 billion, 17.1%), Iran (US\$ 7.4 billion, 15.6%) and Pakistan (US\$ 1.8 billion, 3.7%). In terms of intra-D-8 imports, Turkey, with US\$ 11.8 billion total volume and 22.7% share in total, was the largest importer from D-8 countries in 2015. It was followed by Indonesia (US\$ 10.6 billion, 20.4%) and Malaysia (US\$ 9.2 billion, 17.7%). Top 3 countries accounted for 60.8% of total intra-D-8 imports in 2015.

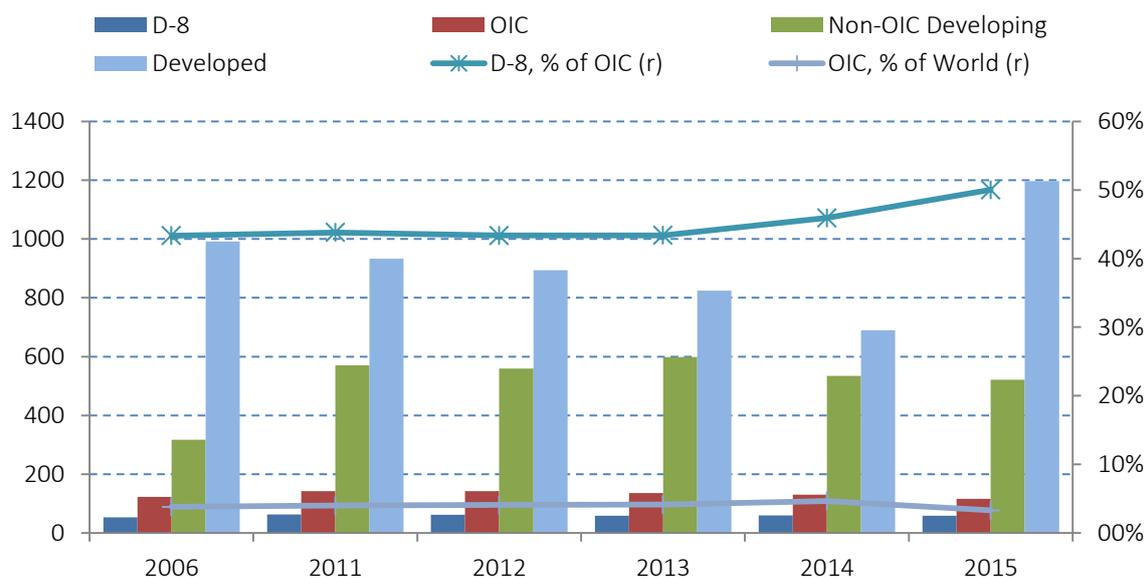
In terms of **foreign direct investment (FDI) flows**, world total FDI inflows amounted to US\$ 1.76 trillion in 2015, marking a more than US\$ 486 billion increase over previous year's value of US\$ 1.27 billion. As of 2006, 70.7% of global FDI inflows, which was then worth of US\$ 991 billion, were destined for developed countries, while the rest for developing economies. In 2013, developing countries reached 57.8% of the global FDI inflows and in 2015, the share of developing countries further decelerated to 67.9% the thanks to the economic recovery in developed countries.

**Figure 2.6: Intra-D-8 Merchandise Exports and Imports (2015, US\$ Billion)**



Source: IMF Directions of Trade Statistics (DOTS).

**Figure 2.7: Inward FDI Flows (US\$ Billion)**

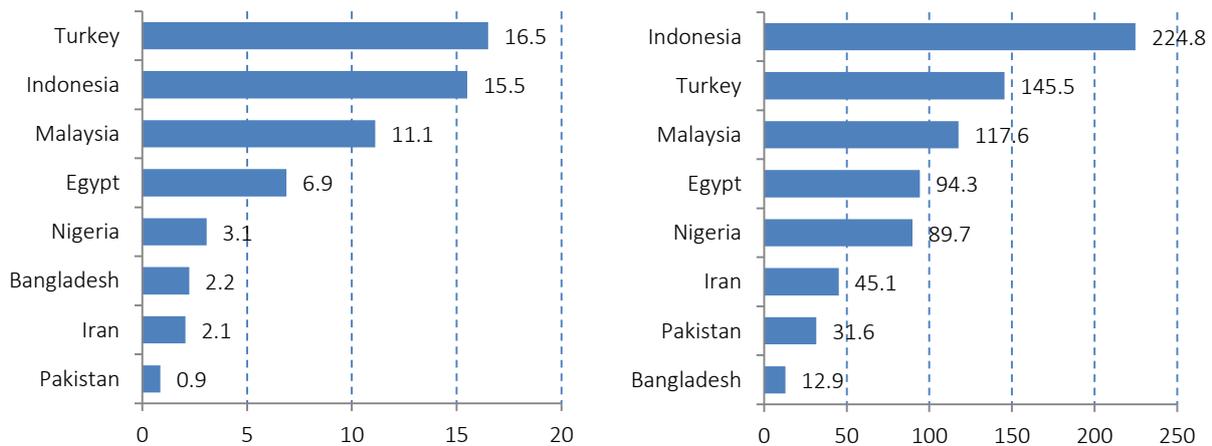


Source: UNCTAD STAT.

Figure 2.7 depicts the total FDI flows to D-8 countries in comparison to OIC, non-OIC developing and developed countries. It is observed from the figure that, during the period under consideration, FDI flows to D-8 countries generally remained below the potential. The total US\$ value of FDI inflows to D-8 countries was recorded at US\$ 62.6 billion in 2011. Since then, it generally showed a declining trend. In 2015, the total value of FDI flows to D-8 countries was recorded at US\$ 58.2 billion, registering a slight decrease from its previous year value of US\$ 59.7 billion. The share of D-8 countries in total flows to OIC countries, on the other hand, has generally been on the rise since 2011, which reached 50% in 2015. Depending on the general trends in FDI flows to developed countries and developing countries, its share in global FDI flows showed rather a fluctuating trend between 3% and 5% during 2006 and 2015. However, it decreased sharply to 3.3% in 2015 from its value of 4.7% in 2014.

Like in the case of other major macroeconomic aggregates of the D-8 group, FDI flows also exhibited a high level of concentration, with bulk of it persistently being directed to a few of them. The top 3 countries with largest inward FDI flows together accounted for 74.1% of total FDI flows to D-8 countries (Figure 2.8). In 2015, Turkey took the lead in FDI inflows with US\$ 16.5 billion of inward FDI flow, and a 28.3% share in total FDI flows to D-8 countries. Turkey was followed by Indonesia (US\$ 15.5 billion, 26.6%), Malaysia (US\$ 11.1 billion, 19.1%), Egypt (US\$ 6.9 billion, 11.8%) and Nigeria (US\$ 3.1 billion, 5.3%). A similar picture is observed in the case of inward FDI stock as well: top 3 countries hosted 64.1% of total D-8 inward FDI stocks. With US\$ 224.8 billion of inward FDI stocks (29.5% of the D-8 total), Indonesia ranked first among the list of D-8 countries with largest inward FDI stock in 2015. Indonesia was followed by Turkey (US\$ 145.5 billion, 19.1%), Malaysia (US\$ 117.6 billion, 15.4%), Egypt (US\$ 94.3 billion, 12.4%) and Nigeria (US\$ 89.7 billion, 11.8%).

**Figure 2.8: Inward FDI Flows (left) and Stock (right) (2015, US\$ Billion)**



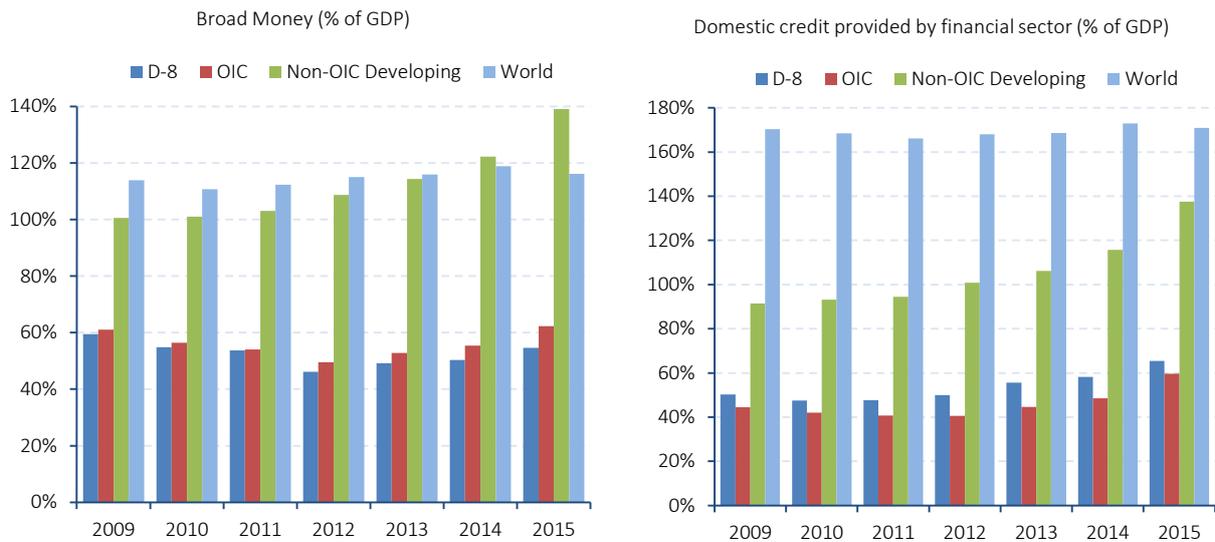
Source: UNCTAD STAT.

Overall, this state of affairs suggests that the most of the D-8 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. This requires them 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. Moreover, special investment agreements can be made to foster investment flows among the D-8 countries.

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 recent 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 2.9 (left), the average volume of broad money relative to the GDP of D-8 countries was recorded at 54.6% in 2015, compared to 62.3% in other OIC countries, 139% in non-OIC developing countries and 116.2% of world average. Apparently, the financial sector in D-8 countries lags 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 2015, the financial sector on average provided credit to the domestic economy as much as 65.4% of the GDP in D-8 countries whereas, in other OIC countries and non-OIC developing countries, this figure was 59.7% and 137.6%, respectively (Figure 2.9, right). Domestic credit by financial sector in developed countries, on the other hand, was on average in the excess of twice the size of GDP in 2015 (205%), which increased the world average to 170.9%.

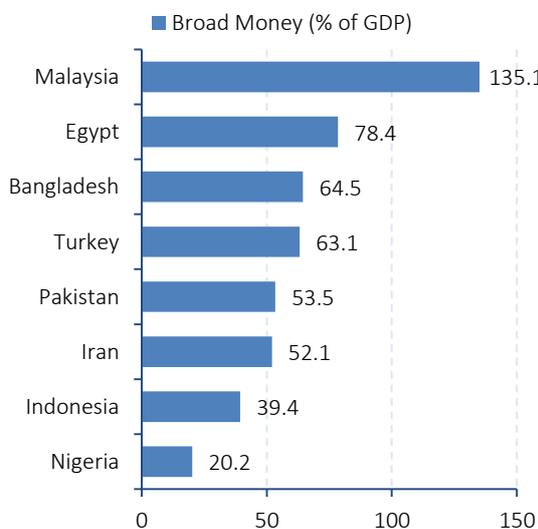
**Figure 2.9: Financial Sector Development**



Source: World Bank WDI.

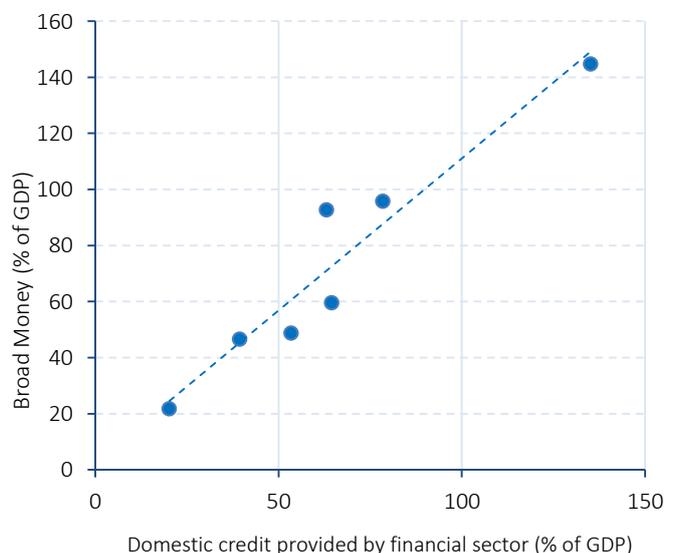
The degree of **financial development** varies substantially across the D-8 countries. While some countries have relatively more advanced financial systems including vibrant banking, insurance and other financial institutions, and effective financial regulatory and supervisory regimes; some others lag behind in terms of their stages of financial development. This, in turn, offers a significant room for improvement of financial systems in D-8 countries. Taking into account the widely accepted view that the financial deepening confers important stability benefits to an economy, many D-8 countries are apparently deprived of these stability benefits. In D-8 countries except Malaysia, financial depth, as measured by the volume of broad money relative to GDP, is below the average world level in 2015. In Malaysia, the total size of broad money which includes, inter alia, all narrow money and deposits, was more than 1.3 times of the GDP (135.1%), as shown in Figure 2.10.

**Figure 2.10: Financial Sector Development (2015)**



Source: World Bank WDI.

**Figure 2.11: Liquidity versus Domestic Credit**



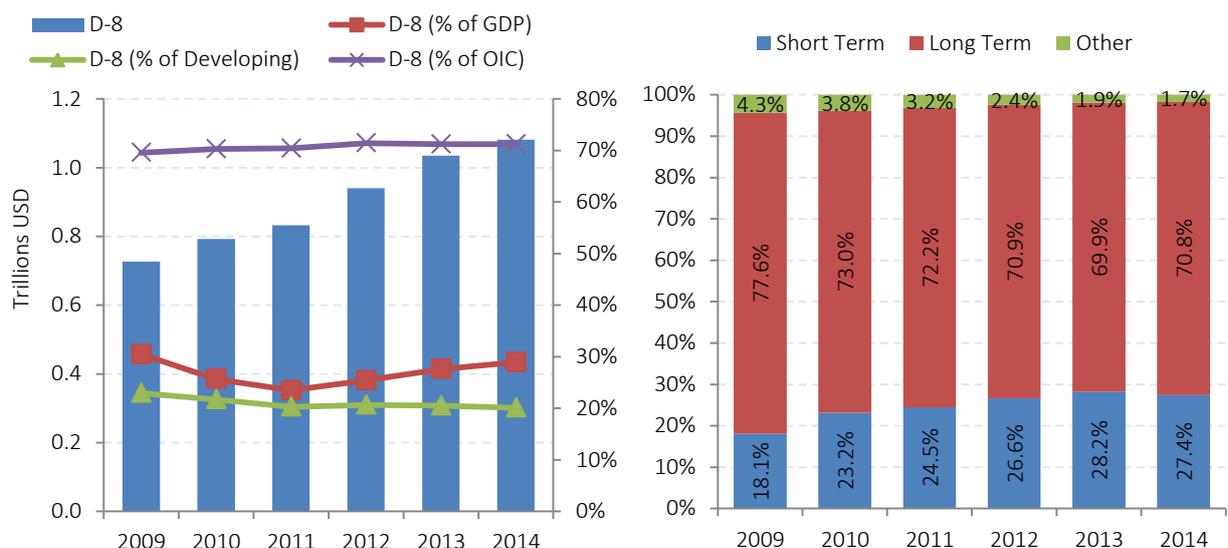
A report by IMF argues that financial deepening, through an increase in financial transaction volumes, can enhance the capacity of the financial system of a country to intermediate capital flows without large swings in asset prices and exchange rates (IMF, 2011). Deeper financial markets are argued to 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 2.11, in this regard, supports this argument for D-8 countries by depicting a strong relationship between broad money and availability of credit in 2015.

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).

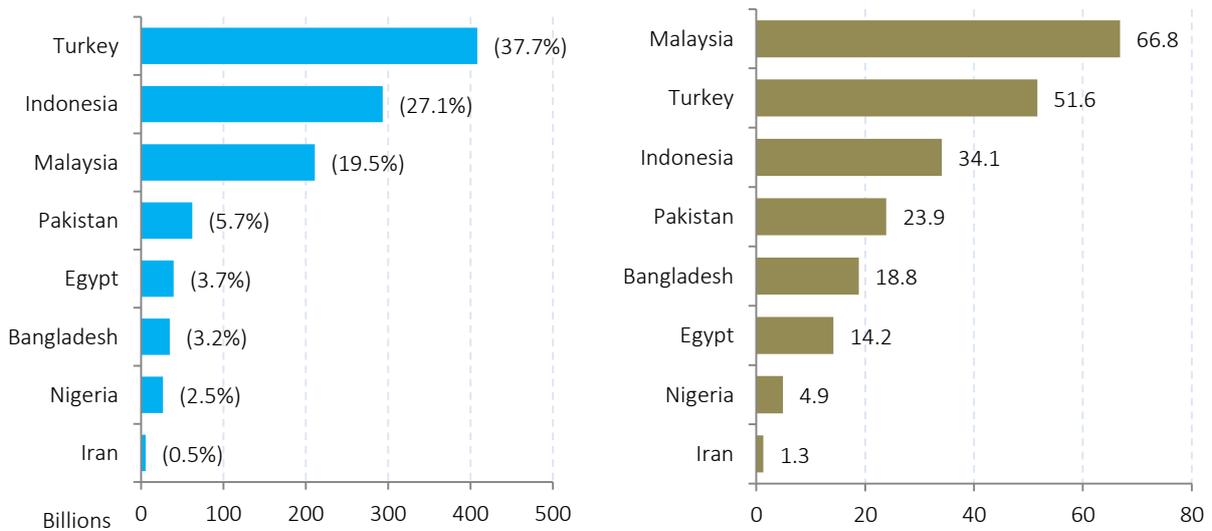
The total external debt stock of D-8 countries showed an increasing trend during the period under consideration. In 2014, the total external debt of D-8 countries increased almost US\$ 50 billion over the previous year's value and reached US\$ 1.1 trillion. In line with the increasing amount of debt in absolute terms, Figure 2.12 (left) illustrates that the relative size of their debt to GDP has been increasing since 2011. In this regard, average debt-to-GDP for the D-8 countries increased from 23.5% in 2011 to 28.9% in 2014. During the same period, total external debt stock of D-8 countries as percentage of total developing countries debt decreased slightly from 20.3% to 20.1%. Moreover, D-8 countries account around 71% of total debt of OIC countries.

When the term structure of external debt of D-8 countries is considered, it is observed that long-term debt continued to account for the largest portion of total external debt, with 70.8% share in 2014. However, the share of short-term debt has been constantly rising during 2009-2013, which reached 28.2% in 2013 compared to only 18.1% in 2009 (Figure 2.16, right). In 2014, this share decreased slightly to 27.4%.

**Figure 2.12: External Debt (left) and Term Structure of External Debt (right)**



**Figure 2.13: Indebtedness in D-8 Countries (left) and Debt Stock as % of GNI (right)**

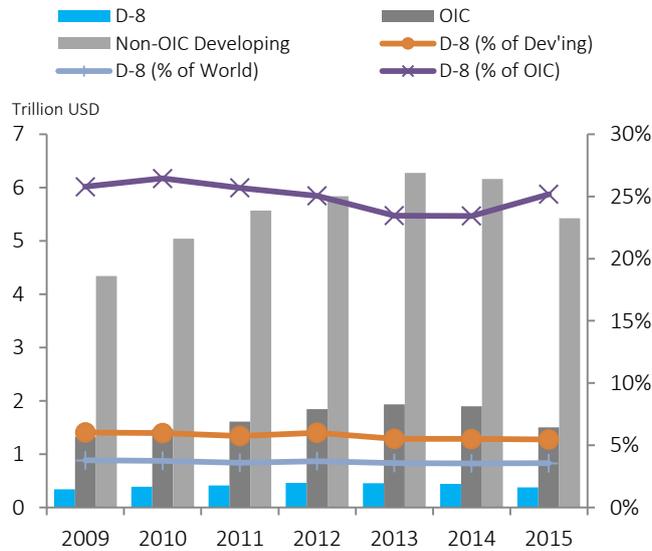


Source: World Bank WDI.

At individual country level, Turkey was the most indebted D-8 member country in 2014 (Figure 2.17, left). The country held US\$ 408 billion in debt, which made up 37.7% of total external debt of D-8 countries. Turkey was followed by Indonesia (US\$ 293 billion, 27.1%), Malaysia (US\$ 210 billion, 19.5%) and Pakistan (US\$ 62 billion, 5.7%). Only 3 countries accounted for as much as 84.4% of total external debt of D-8 countries. 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, Malaysia, with a 66.8% debt-to-GNI ratio, was the most indebted D-8 country in 2014 (Figure 2.13, right). It was followed by Turkey (51.6%), Indonesia (34.1%) and Pakistan (23.9%).

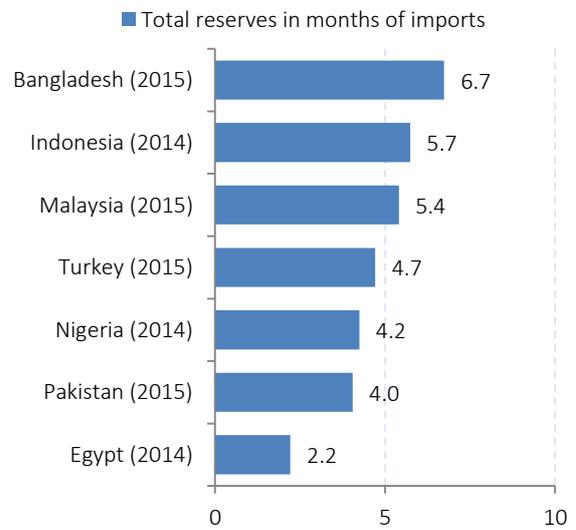
**Reserves** are usually considered as an important instrument to safeguard the economy against abrupt external shocks. World total monetary reserves – including gold – increased from US\$ 9 trillion in 2009 to US\$ 12.5 trillion in 2014, but it decreased back to US\$ 10.6 trillion in 2015. Of this amount, US\$ 3.7 trillion are possessed by developed countries while the remaining US\$ 6.9 trillion are owned by developing countries. Total reserves of D-8 countries increased from US\$ 342 billion in 2009 to US\$ 461 billion in 2012. However, it steadily declined over the last three years and reached US\$ 379 billion in 2015. Accordingly, the share of D-8 countries in total reserves of the developing countries declined from 6% in 2012 to 5.5% in 2015 (Figure 2.14). Figure 2.15 displays the D-8 countries by volume of reserves in months of exports in 2014/2015. Bangladesh, with reserves equivalent to 6.7 months of exports, topped the list, whereas Indonesia and Malaysia followed closely with reserves equivalent to 5.7 and 5.4 months of exports, respectively.

**Figure 2.14: Reserves including Gold (US\$ Trillion)**



Source: World Bank WDI.

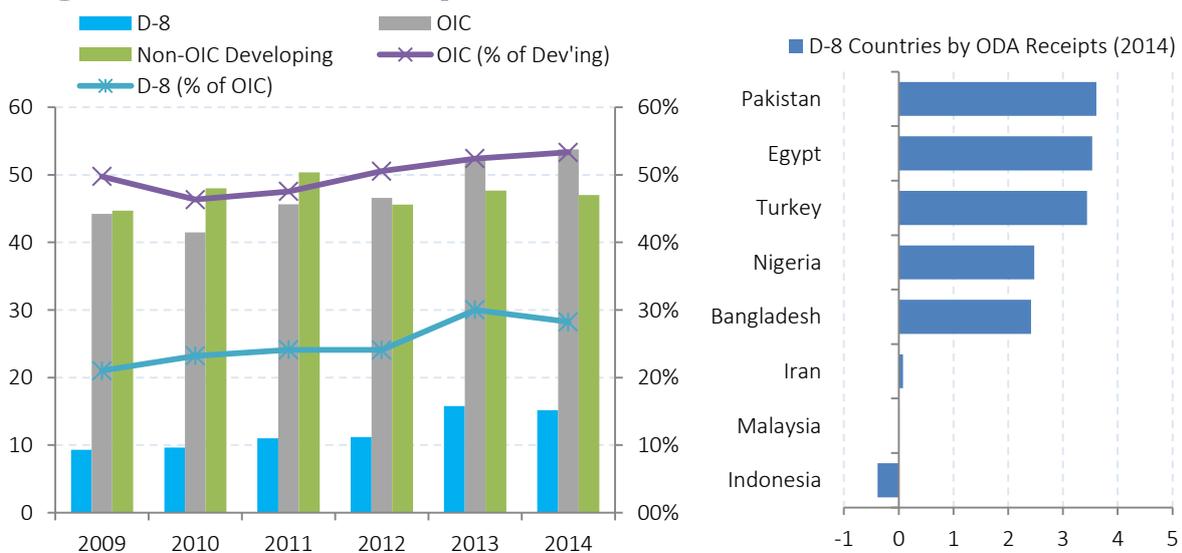
**Figure 2.15: D-8 Countries by Total Reserves in Months of Exports**



Source: World Bank WDI.

The share of all developing countries in world total reserves in 2015 corresponded to around two thirds (65%). 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 2.16: Official Development Assistance, US\$ Billion**



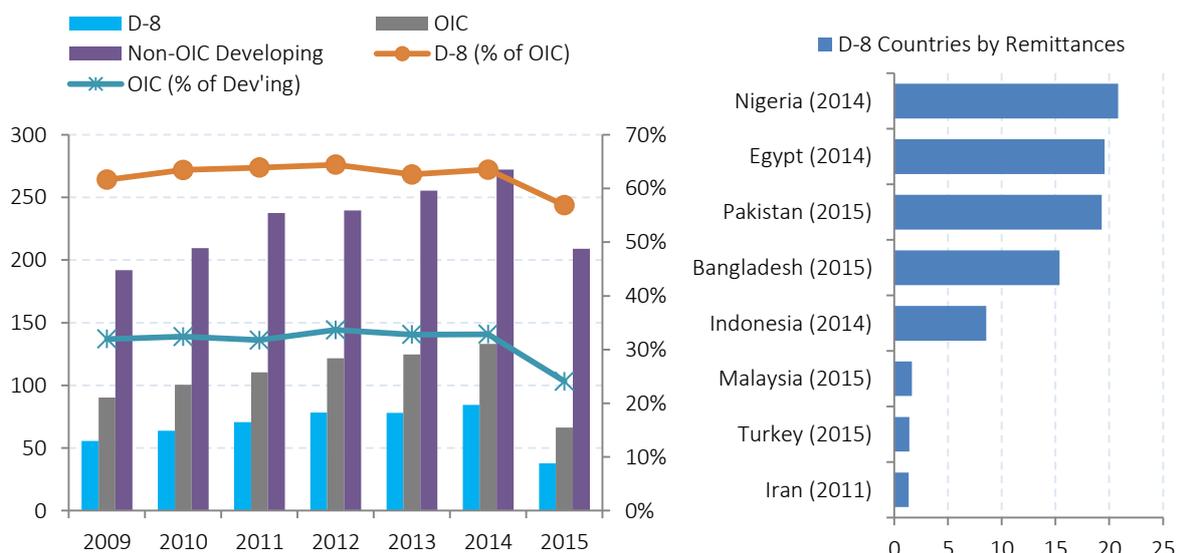
Source: World Bank WDI.

**Official development assistance (ODA)** continues to be an important source of financing for many developing countries, including D-8 countries. In 2014, net ODA flows from all donors to developing countries reached US\$ 100.8 billion compared to US\$ 88.9 billion in 2009 (Figure 2.18, left). During the period under consideration, ODA flows to D-8 countries exhibited an upward trend. As of 2014, D-8 countries, with US\$ 15.2 billion, accounted for 15.1% of the total ODA flows to developing countries and 28.2% of the total flows to OIC countries.

ODA inflows to D-8 countries show similar characteristics, when their concentration level is concerned. In 2014, the top 3 member countries received 68% of total ODA flows to D-8 countries whereas the top 5 received 99.4% of them (Figure 2.16, right). Pakistan, with total inflows of US\$ 3.6 billion and 23.2% of D-8 total, ranked first. It was followed by Egypt (US\$ 3.5 billion, 22.7%), Turkey (US\$ 3.4 billion, 22.1%), Nigeria (US\$ 2.5 billion, 15.9%) and Bangladesh (US\$ 2.4 billion, 15.5%). It should be noted that there was a net ODA outflow from Indonesia in the amount of US\$ 388 million in 2015.

Finally, Figure 2.17 shows that the inflows of personal **remittances** to D-8 countries increased from US\$ 55.6 billion in 2009 to US\$ 84.5 billion in 2014, but sharply declined to US\$ 37.7 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 fall in their incomes as a major source of remittances to their home countries. This resulted in a decrease in remittance flows to D-8 as well as other developing countries. At the individual country level, it is observed that again a significant portion of inward remittance flows to D-8 countries concentrate on a few members during 2014-2015. In the list of top remittance receivers, Nigeria took the first place with US\$ 20.8 billion of remittances inflows (Figure 2.17, right). It was followed by Egypt (US\$ 19.6 billion), Pakistan (US\$ 19.3 billion), Bangladesh (US\$ 15.4 billion) and Indonesia (US\$ 8.6 billion).

**Figure 2.17: Personal Remittances, US\$ Billion**



Source: World Bank WDI.

## Part II

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Enhancing

**Productivity** and

**Competitiveness** in

D-8 Countries



## PART II

This special Part of D-8 Economic Outlook 2016 provides a comprehensive treatment of productivity and competitiveness issues in D-8 countries. The issue is highly critical for D-8 countries to achieve better standards of living and to position themselves in the world in a comparably better situation.

This Part is structured as follows. In section 3, a technical as well as summary of the literature on the importance of productivity and competitiveness for growth and wealth generation is provided. It also presents main productivity and competitiveness indicators for D-8 countries. Section 4 discusses major factors that influence productivity and competitiveness. Finally, section 5 discusses some policy issues to enhance productivity and competitiveness in D-8 countries.

Evidence suggests that reform priorities for better productivity growth differ across countries. Low income countries are particularly in need of improved education and infrastructure, good quality economic institutions, reduced barriers for better market efficiency and effective competitiveness. On the other hand, middle income countries need, among others, effective policies for investment promotion, quality higher education, investment on research and development, deepening of financial markets, more flexible and competitive goods and labour markets.



# 3 PRODUCTIVITY AND COMPETITIVENESS IN D-8 COUNTRIES

## 3.1 Importance of Productivity and Competitiveness

In modern economics, if a country can produce the same good or services at a lower cost than other nations, then this country is perceived to be more competitive than others. Productivity is the main factor that makes countries different in terms of competitiveness in the international markets. In other words, increased productivity contributes to international competitiveness of the economy; the more productive a business is, the better it is able to compete in international markets. In this regard, there is a close link between productivity and competitiveness. More productive countries either use their capital or labour in a more effective way than others which make their goods and services more competitive in international markets.

Aside from cross-country productivity differences, some other factors such as institutions, culture, trade barriers and quality of infrastructure also have an impact on the competitiveness of a country. Therefore, enhancing productivity in businesses in order to boost competitiveness is a necessary but not a sufficient condition. In particular, countries need to eliminate factors that constitute barriers for international trade such as high logistic costs, high tariff rates, complex bureaucratic steps for customs clarification and corruption. These are some of the well-known challenges that reduce the competitiveness of countries in international markets that ultimately hit countries' welfare creation and standards of living.

According to Atkinson (2013), a competitive economy is the one with a trade surplus, few barriers to import, and limited "discount" to exporters. Productivity growth can enable competitiveness, especially if it is concentrated in traded sectors, which lowers costs and enables firms to sell more in global markets without relying on government provided discounts. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. This implies that a more competitive economy is one that is likely to grow faster over time.

### 3.1.1 Role of Productivity and Competitiveness in Wealth Creation

All economies strive for higher economic growth with a view to raising standards of living, and overcoming poverty and deprivation. As suggested by the new economic growth theories, sustaining productivity growth is the only way to have positive economic growth rate in the long-

run and make nations more prosperous. On the other hand, like many other countries, D-8 countries also experience shortages some of all of the factors of production. In order to be able to produce more goods and services with the existing sources, which ultimately will help to eradicate poverty and to reach higher standards of living, productivity enhancing policies carry a particular importance.

Based on the initial conditions, various policies can be designed to boost productivity. For instance, a nation's productivity level may increase due to the improved quality of education that leads to a rise in productivity across all sectors. Industry or sector specific policies may also help to increase productivity level of a nation. For instance, realizing a shift in the economy from low productive to high productive industries may boost productivity. An economy would experience a rise in its overall productivity level, when the mix of low and high-productivity industries changed. The ongoing shift from agriculture (traditionally a low productive industry) to manufacturing and services (high-productive sectors) is an example of this.

Michael Porter from Harvard University states that "the only meaningful concept of competitiveness at the national level is productivity". But while these terms are related, competitiveness should not be equated with productivity or GDP growth. IMD's World Competitiveness Yearbook defines competitiveness similarly, but more broadly, as "how an economy manages the totality of its resources and competencies to increase the prosperity of its population". The World Economic Forum's Global Competitiveness Report defines competitiveness as "the set of institutions, policies and factors that determine the level of productivity of a country". Therefore, it is clear that there are slight differences across scholars and institutions on the definition of competitiveness and how it should be measured. However, independent from how competitiveness is defined, it becomes evident that competitiveness and productivity are two closely interlinked concepts that are critical for sustaining economic growth and generating wealth.

All in all, enhancing productivity and boosting competitiveness are critical factors for sustaining economic growth and generating sources to overcome national bottlenecks such as poverty and deprivation. In this way, countries can generate more wealth utilizing the available resources and therefore reach better standards of living for their people.

### 3.1.2 Economic Literature on Growth and Technological Progress

Economic growth models aim to explore the determinants of economic growth analytically. In a basic economic growth model, three sources of economic growth exist: growth in capital stock, growth in labour stock and growth in productivity (technology). Both the neoclassical and the new growth models confirm that if there is no technology growth, the economy suffers from diminishing returns to capital and therefore economic growth (the speed of increasing the welfare) slows down and comes to an end over time.

The only way to cope with this challenge (i.e. diminishing returns to capital), is to enhance productivity growth and the factors that trigger productivity. The new economic growth models vary in their explanation of which factors enhance productivity and how they can boost economic growth. They argue that without technological progress (i.e. productivity growth) it is unlikely to sustain economic growth in the long-run. Therefore, a special attention should be given to the planning and implementation of policies for enhancing productivity and boosting competitiveness in developing countries.

In this context, there are areas for policy development with significant potential for productivity growth at the national scale, such as education and health policies. On the other hand, sector specific policies are also important to address problems in less-productive industries. For instance, infrastructure projects in irrigation would be crucial to boost productivity in the agriculture sector. Overall, without innovation and improvement in productivity levels, countries cannot carry their standards of living to a higher level.

The new economic growth models explain the factors that govern the growth rate of technology as an endogenous parameter rather than exogenous. Therefore, the new growth models sometimes labelled as “endogenous growth models”. According to these models, there can be two major ways to increase productivity growth in a country, which help countries to become more prosperous or to grow faster: enhancing research and development and increasing labour productivity.

The first way is enhancing research and development (R&D) and increasing absorption capacity. The AK growth model of Frankel (1962) and Romer (1986) is known as the first wave of endogenous growth models that assumes during capital accumulation, externalities may help capital from falling into diminishing returns. In these models, externalities are created by “learning-by-doing” argument of Arrow (1962) and knowledge spill-overs effect. Therefore, according to the AK growth model, by attracting foreign direct investment (FDI) the country enlarges its capital stock and enhances its productivity that is stemming from learning by doing externalities. Therefore the country can keep growing both in the short and long-run since its productivity (technology) grows as it continues attracting foreign capital.

The product variety model of Romer (1990) argues that “productivity growth comes from an expanding variety of specialized intermediate products” (Aghion & Howitt, 2009, p.69). Therefore, in a closed economy the only way of increasing the variety of intermediate products is conducting research and development activities in a productive manner. By opening the economy, however, the country can reap the benefits of research and development activities which are conducted in other countries. The country may transfer different types of intermediate goods either through imports or through FDI. Thus, it is expected that imports and FDI induce economy-wide productivity and economic growth by expanding the variety of intermediate products. In this respect, technology spillover externalities would also increase the knowledge stock of researchers and productivity of research activities in the host country. As a result, researchers might become more likely to invent new intermediate products which again trigger productivity and therefore economic growth.

The Schumpeterian model of Aghion and Howitt (1992) constitutes the second wave of endogenous growth models together with the product variety model of Romer (1990). Basically, both models point out the importance of research and development activities for sustained long-run growth rates and they explicitly explain the mechanisms through which research and development activities affect economic growth. The key difference between the product variety and Schumpeterian models lies in their assumption on how capital goods enhance the economic growth. As mentioned above, in the Romer model, invention of “new” capital goods triggers productivity and economic growth. Nonetheless, the Schumpeterian model concentrates on the improvement of the quality of the existing types of capital goods.

In other words, by conducting research and development activities, firms would become able to improve the quality of existing capital goods which makes old ones obsolete. This process is called “creative destruction” by Schumpeter (1942). Therefore, the economy can sustain long-run growth as it innovates by carrying out research and development activities. By using a similar argument above, in an open economy, the country would transfer the innovative technology and new quality improving mechanisms via import and FDI inflows that would enhance productivity and economic growth.

The second way identified in the literature is increasing labour productivity by investing in human capital development. Countries do not have an absolute power to change or transfer their physical capital including all natural resources such as land, water, minerals etc. However, they have an option to upgrade the skills of their human capital which helps them to increase their output per labour. Skilled (educated) workers use the existing sources in a more productive way. They are also more capable of capturing “learning by doing externalities” which is being generated via foreign capital, as mentioned in the Romer (1990) model.

It is also clear that while conducting research and development (R&D) activities, which are key for sustainable productivity and economic growth in the new growth models, only skilled personnel can be employed. Only with such skilled labour force, new products can be innovated and the quality of existing services can be improved. Therefore, transforming a nation’s mindset concerning the importance of R&D activities and innovation would only be achieved through education.

In addition to these two factors, there are several other factors identified as crucial in further improving the productivity. These include the quality of the institutions, infrastructure development, economic stability and market efficiency. In one way or another, all these factors are closely related to each other. For instance, if a company experience unexpected delays on its intermediate goods import due to non-standard customs procedures, the average productivity will be affected negatively that ultimately will be noticed as a drop in the economy-wide productivity levels. If institutions work properly with proper infrastructure, markets will work more efficiently and economy will become more stable and competitive. Detailed discussion of all these factors will be provided in section 4 of the report.

**3.2 Levels of Productivity and Competitiveness in D-8 Countries** This section examines the productivity and competitiveness in D-8 countries in comparison with other OIC countries, non-OIC developing countries, developed countries and the world average. The section analyses some selected productivity and competitiveness indicators as well as some growth indicators obtained from various international data sources during the period 1990-2015.

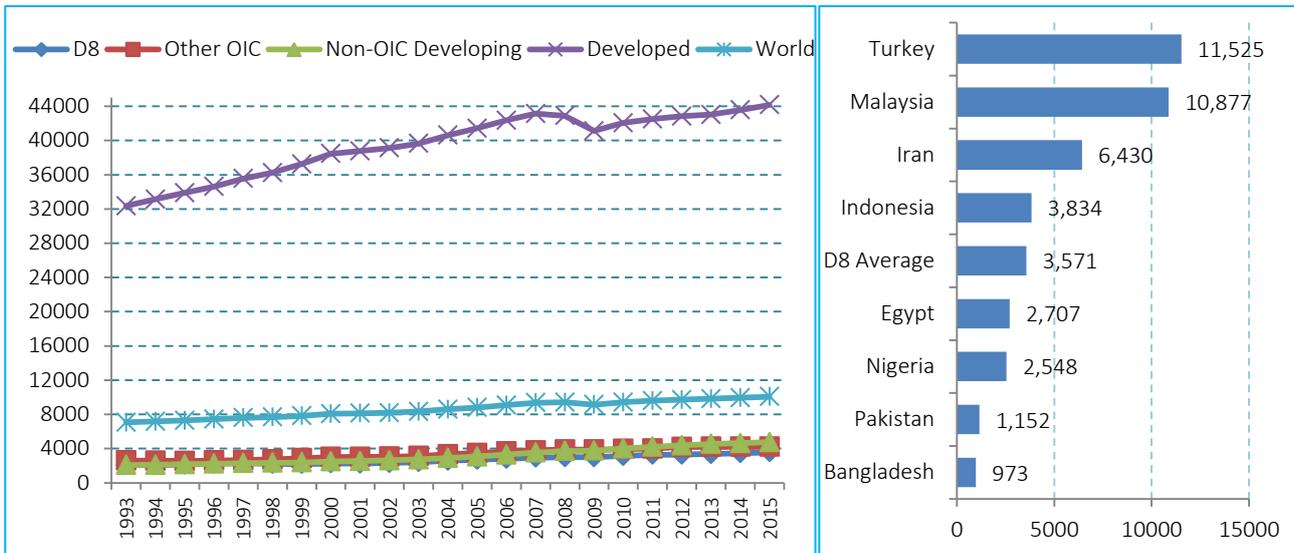
### 3.2.1 Productivity in D-8 Countries

Without technological progress or increasing productivity, economic growth may slow down over time due to diminishing returns to capital. Therefore, sustaining productivity growth should be a priority to ensure positive economic growth rates over the long-run. Figure 3.1a presents the evolution of the average real GDP per capita in five country groups (OIC countries, other OIC countries, non-OIC developing countries, developed countries and the world) during the period 1993-2015. It is evident that, despite some annual cyclical movements, there is a positive long-run trend in the level of average real GDP per capita in all five country groups.

Figure 3.1

(a) GDP per Capita between 1993 and 2015  
 (2013 constant US\$)

(b) GDP per Capita Levels in D-8  
 Countries, 2015



Source: SESRIC Staff Calculations from the World Bank WDI Indicators.

The average of the D-8 group climbed from \$2,069 in 1993 to \$3,571 in 2015, representing a 73% increase. In the same period, other OIC countries recorded an increase from \$2,614 to \$4,221 corresponding to a 61% increase. Non-OIC developing countries witnessed an increase from \$2,080 to \$4,745 corresponding to a 81% increase. On the other hand, developed countries could increase their average real GDP per capita only by 36% from \$32,346 to \$44,166. Overall, the world average GDP per capita level went up by 42% from \$7,064 to \$10,069 in the same period.

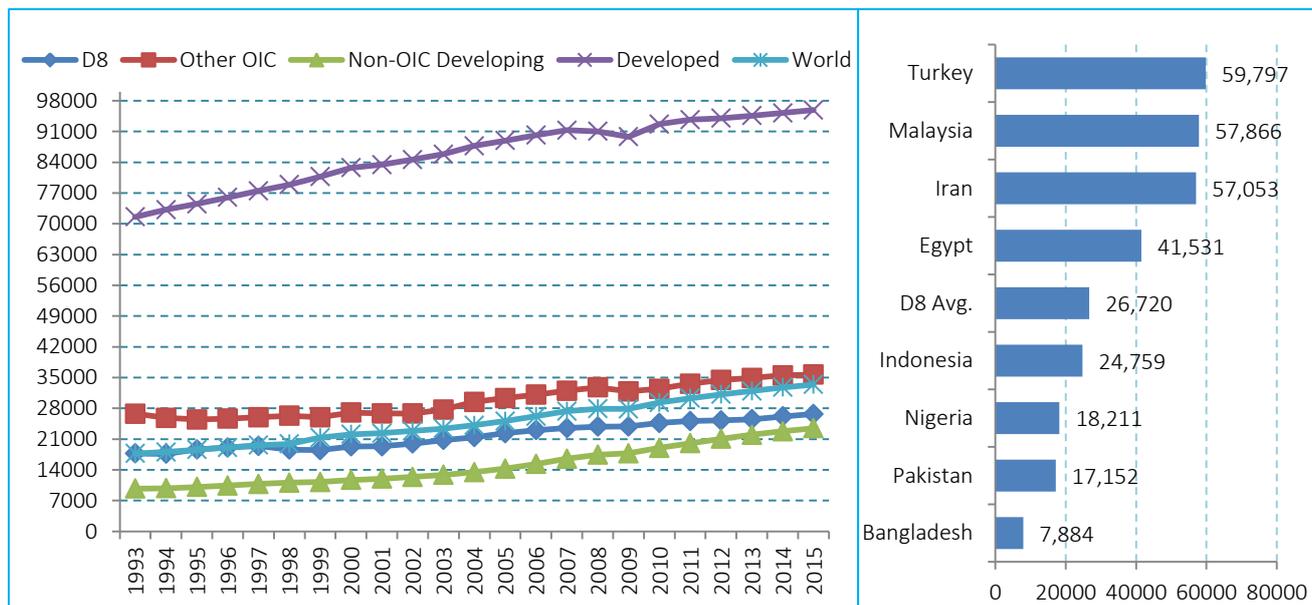
Two main messages emerge from this analysis. First, D-8 countries, on average, have showed a striking performance in terms of change in GDP per capita levels. Second, despite recording some significant improvements in the average GDP per capita levels, D-8 countries still have remarkably lower average GDP per capita level than the average of developed countries and the world average. However, in 2015, two D-8 countries namely Turkey and Malaysia reached higher real per capita GDP levels than the world average of \$10,069 (Figure 3.1b). In the same year, Iran and Indonesia also had higher GDP per capita levels than the D-8 average of \$3,571.

Figure 3.2a presents the evolution of the labour productivity during the period 1993-2015, measured in terms of GDP per person employed, in the same five country groups. Overall, the evolution of labour productivity showed a very similar pattern to that of the evolution of GDP per capita. The D-8 average labour productivity level climbed from \$17,737 in 1993 to \$26,719 in 2015, corresponding to a 51% increase. In the same period, other OIC countries raised their average from \$26,773 to \$35,685, corresponding to a 33% increase. Non-OIC developing countries witnessed an increase from \$9,724 to \$23,464. On the other hand, the average of developed countries went up from \$71,571 to \$95,880 where the world average jumped from \$17,730 to \$33,437. Therefore, the biggest level change was observed in other developing countries group over the period analysed. However, the change in the D-8 group (51%) in this period can also be recorded as a significant improvement thanks to national efforts and policies of D-8 countries.

Figure 3.2

(a) Labour Productivity (GDP per Person Employed) between 1993 and 2015 (2005 constant US\$)

(b) Highest Labour Productivity Levels in OIC Countries, 2015



Source: SESRIC Staff Calculations from the World Bank Development Indicators ILO and the Total Economy Databases.

It was also observed that there exist remarkable differences among the individual performances of D-8 countries. In 2015, four D-8 countries namely Turkey, Malaysia, Iran and Egypt surpassed the average of D-8 (\$26,720) and the world average (\$33,437) in terms of labour productivity (Figure 3.2b).

Overall, on average, D-8 countries showed a good performance in increasing their per capita GDP and labour productivity levels compared to other developing countries, developed countries and the world. Yet, in absolute terms, the levels achieved by the D-8 group, on average, are still well below the world averages. This indicates the necessity of further progress and policy actions in D-8 countries to reach higher standards of living both in terms of per capita GDP and productivity. It also became clear that the existence of cross-country differences among D-8 countries should not be neglected. Some D-8 countries are still classified as low-income countries that need to undertake major changes in their economic growth policies, particularly in the policies related to enhancing their productivity and competitiveness.

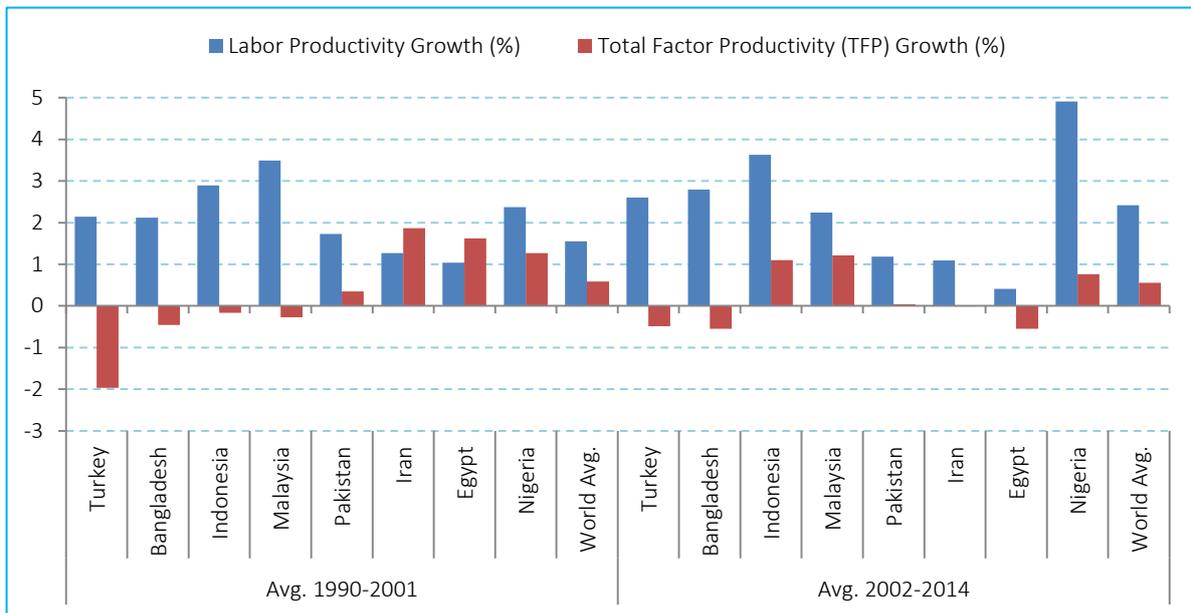
### 3.2.1.1 Labour Productivity and Total Factor Productivity (TFP) Growth

Figure 3.3 presents the growth of labour productivity (GDP per person employed) and total factor productivity (multifactor productivity) in D-8 countries in comparison with the world average over the periods 1990-2000 and 2002-2014. The figure aims to show the long-run dynamics of the productivity growth in the D-8 group in comparative perspective.

Many economists acknowledge that the growth of labour productivity is a weak proxy to measure the technological progress of a country in empirical studies. Therefore, these scholars strongly suggest using the growth of total factor productivity to measure the technological progress, which is measured by using a growth accounting scheme. In simple terms, the TFP growth is the portion of economic growth that cannot be explained by a change in capital and labour stock. In other

Figure 3.3

Labour Productivity Growth and Total Factor Productivity Growth Rates



Source: SESRIC Staff Calculations from the Total Economy Database.

words, it is a measure of technological progress that allows countries to generate a higher output level by using the same level of capital and labour. Therefore, it is a productivity measure that is calculated by using both capital and labour. In this regard, it is usually called multifactor productivity. Despite having this fact, still many economists consider the labour productivity as a strong and robust indicator when comparing productivity levels of countries.

As shown in Figure 3.3, the average annual labour productivity growth of the world was 1.55% in the period 1990-2001. Among D-8 countries, Malaysia achieved to improve its labour productivity level the most that grew by 3.5%. In this period, only the labour productivity growth rates of Iran and Egypt stayed below the world average of 1.55%. On the other hand, over the period 2002-2014, the average annual labour productivity growth of the world reached 2.4%. Turkey, Bangladesh, Indonesia and Nigeria surpassed the world average labour productivity growth rate of 2.4% in this period. Moreover, between 2002 and 2014, four D-8 countries namely Turkey, Bangladesh, Indonesia, and Nigeria showed a better performance in terms their labour productivity growth rates when compared with their performance over the period 1990-2001. Between 2002 and 2014, in Iran, Malaysia, Pakistan and Egypt the growth rates of labour productivity slowed down in relative terms. In a nutshell, D-8 countries have seen some significant improvements in their labour productivity levels that were reflected in their growth rates between 1990 and 2014. However, disparities continued to exist among D-8 countries in terms of the growth rates of labour productivity. In 2014, among D-8 countries, Bangladesh recorded the highest labour productivity growth rate (3.8%) followed by Nigeria (3.6%) (Figure 3.4a).

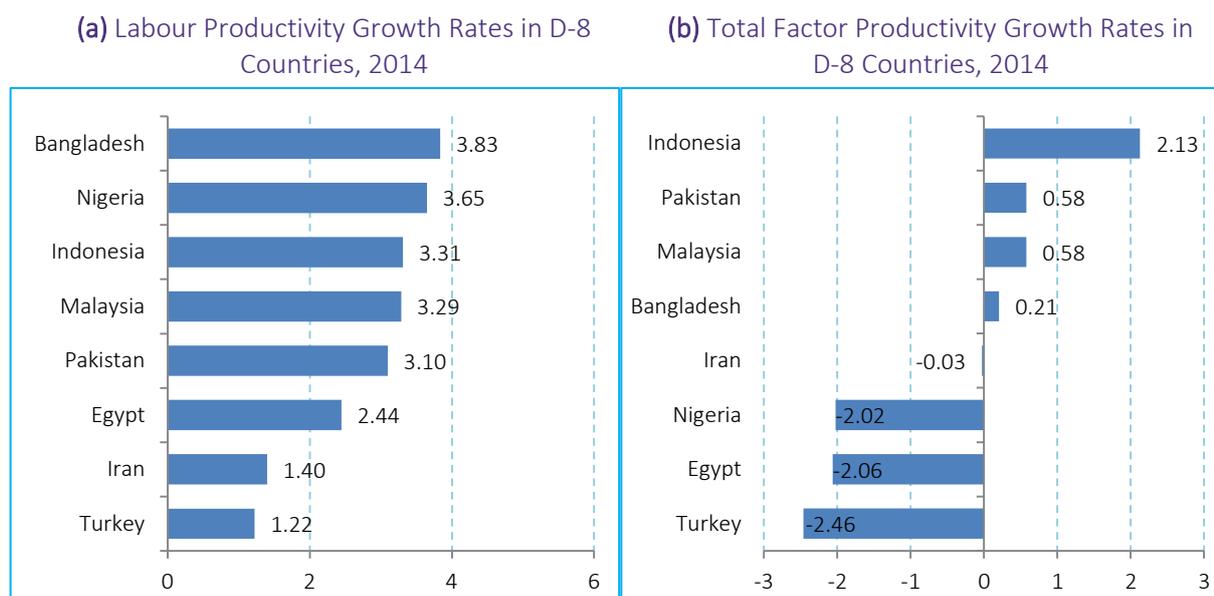
As shown in Figure 3.3, the world average annual total productivity growth rate of was amounted to 0.58% over the period 1990-2001. Turkey, Bangladesh, Indonesia and Malaysia, on average, registered negative TFP growth rates in the same period. However, four D-8 countries namely Pakistan, Iran, Egypt and Nigeria achieved to record some positive TFP growth rates in this period

where the average TFP growth rates of Iran, Egypt and Nigeria stayed well above the world average of 0.58%. Over the period 2002-2014, the world average annual total productivity growth rate slightly decreased and calculated at 0.55%. Four D-8 countries namely Turkey, Bangladesh, Iran and Egypt registered, on average, negative TFP growth rates. On the contrary, Indonesia, Malaysia, Pakistan, and Nigeria, on average, achieved to see positive growth in their TFP levels. Moreover, the average TFP growth rates of Indonesia, Malaysia, and Nigeria were found to be higher than the world average of 0.55%. As in the case of labour productivity growth rates, TFP growth rates differ across D-8 countries. In 2014, Indonesia had the highest growth rate of 2.1% and followed by Pakistan with a growth rate of 0.6% (Figure 3.4b).

In summary, there are discrepancies among the performance of D-8 countries in terms TFP growth rates. Over time, some D-8 countries achieved to improve their TFP levels as reflected in their TFP growth rates that exceeded the world average TFP growth rate. On the contrary, some D-8 countries, on average, recorded negative TFP growth rates. One of the reasons behind the positive TFP growth rates is the increased integration with the world economy in terms of trade, technology transfer and capital flows. Therefore, some D-8 countries started to benefit from technologies or mechanisms that are being produced abroad that enhance their TFP growth.

Another reason behind the increase in productivity growth rates in D-8 countries is the increased investment in human capital (education) and health. Many D-8 countries increased their attainment ratios to schools at all levels. Basic health services have become available for a larger portion of people living in D-8 countries. Also increased cooperation between D-8 countries and international institutions such as OIC, IsDB, UN, UNDP, OECD, etc. contributed to the improvement of infrastructure and institutional quality. It becomes evident that D-8 countries still need to exert more efforts in order to sustain and accelerate the productivity growth rates. Any lax policies on the reforms and paying insufficient attention to education or health policies will likely lead to a reduction in the productivity growth that will ultimately put a pressure on the wealth creation and standards of living in D-8 countries.

Figure 3.4



Source: SESRIC Staff Calculations from the Total Economy Database.

### 3.2.1.2 Growth Accounting

The growth of GDP under a Cobb-Douglas type production is governed by the growth of capital (K), (L), and A (technology). By using a growth accounting scheme, the sources of growth can be identified. The Total Economy Database presents the dataset for the growth of capital (K), (L), and A (technology). It further classifies the capital stock of a country as non-ICT (information and communication technologies) and ICT capital. The ICT capital stock includes stock that covers ICT related goods and products. Therefore, a higher share of ICT capital growth implies growth stemming from a capital stock with higher density of research and development activities and higher value-added goods.

In a similar fashion, the labour stock is divided into two groups as labour quantity and labour quality. Growth of labour quantity represents the economic growth stemming from the change in the total stock of labour. Change in labour quality explains the growth of economy (GDP) stemming from the changes in the labour skills (education level). The final term in the growth accounting is the technology growth (total factor productivity, TFP) that is the portion of the economic growth that cannot be explained neither by a change in the capital stock nor a change in labour stock. In summary, the growth accounting equation can be written as:

*Growth of GDP = Growth of Capital + Growth Labour + Growth of Technology (TFP)*

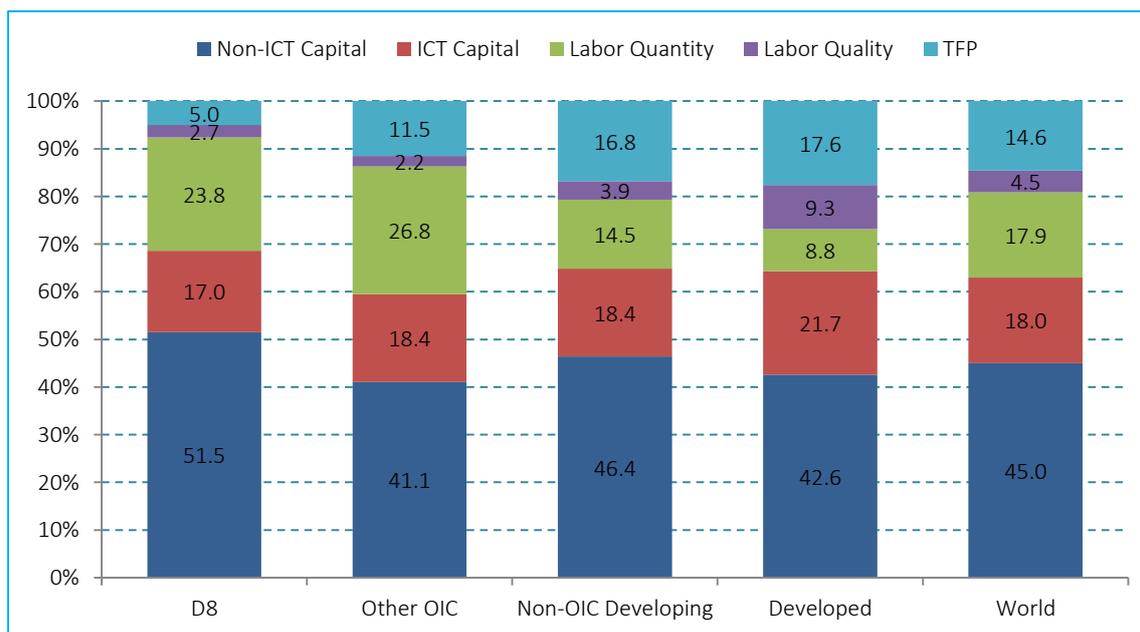
*Growth of GDP = Growth of Non-ICT Capital + Growth of ICT Capital + Growth of Labour Quantity + Growth of Labour Quality + Growth of Technology (TFP)*

By using a dataset between 1990 and 2014 retrieved from the Total Economy Database, the result of the growth accounting scheme is depicted for five country groups in Figure 3.5. According to Figure 3.5, the growth of non-ICT capital is the main engine for economic growth in all country groups that its contribution to growth ranges between 41.1% and 51.5%. The average of the D-8 group is found to be as 51.5%, which is the highest contribution rate among all country groups analysed over the period 1990-2014. The average of other OIC countries group was equal at 41.1% where the world average amounted to 45%. The growth of ICT capital makes a contribution to economic growth within the range of 17% and 21.7%. The highest contribution rate of the ICT capital to the economic growth was observed in the developed countries group with a rate of 21.7%. The contribution rate of the ICT capital to the economic growth rate was calculated at 18.4% both for the other OIC countries group and non-OIC developing countries group. In the same period, ICT capital growth only explained 18% of the world economic growth.

The growth of labour quantity is the second major factor that explains the economic growth in D-8 countries with an average contribution rate of 23.8%. In other OIC countries, its contribution was even found to be higher at 26.8% where the world average was about 17.9%. On the contrary, in developed countries labour quantity growth makes a relatively lower contribution to the economic growth (8.8%) over the entire period mainly stemming from the slowed population growth rates observed in these countries. However, in developed countries, the growth of labour quality (i.e. improvement in labour skills) was responsible for 9.3% of the economic growth that is the highest average seen among all country groups. In the group of D-8 countries, on average, the contribution of labour quality was merely 2.7%. In non-OIC developing countries, the average contribution rate of labour quantity amounted to 3.9% where the world average was equal to 4.5%. In other words, developing countries including D-8 group have some issues associated with formal education and

Figure 3.5

Growth Accounting: Sources of Economic Growth, 1990-2013



Source: SESRIC Staff Calculations from the Total Economy Database.

vocational training that they require to design and implement policies with a view to upgrade overall skills' level of their labour force.

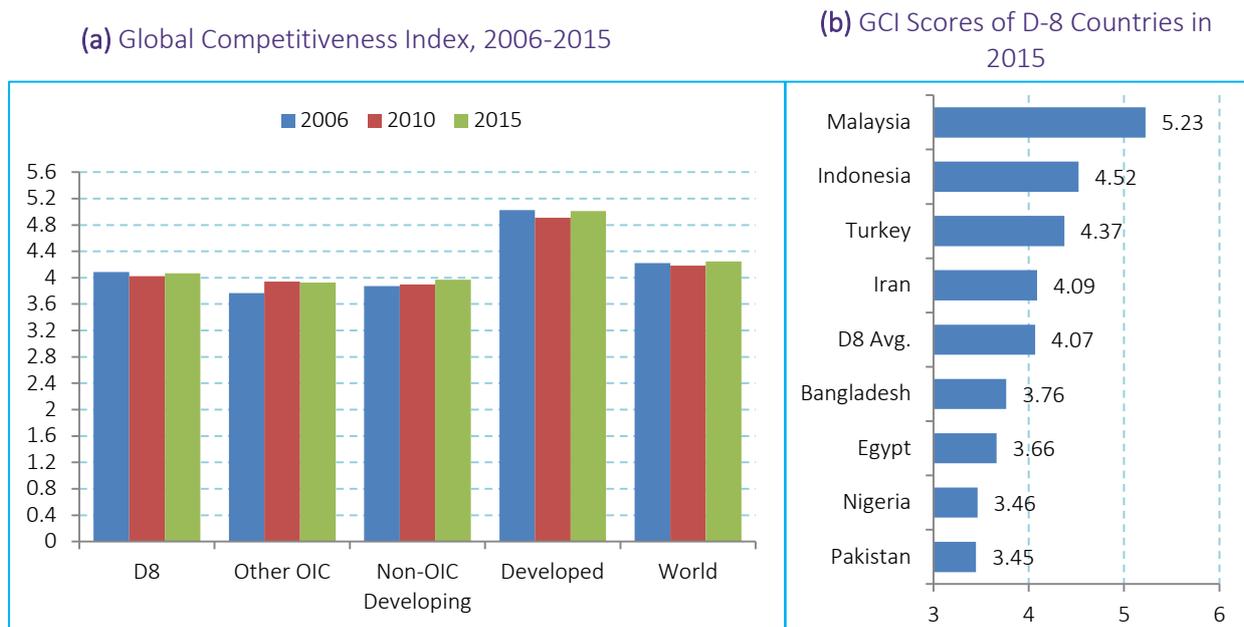
Finally, the growth of TFP explains 14.6% of the economic growth in the world, whereas the average of D-8 countries was found to be around 5% in this regard. In developed countries, the TFP growth makes the highest contribution (17.6%) to the economic growth compared with other groups. This is not a surprising result given the significant contributions of the labour quantity and the ICT-capital to the economic growth in developed countries. These results imply that D-8 countries need to exert more efforts through scaling up their investments into education, human capital and technology in order to improve the contribution of TFP growth to the economic growth as observed in developed countries.

### 3.2.2 Competitiveness in D-8 Countries

Productivity is an important component of competitiveness. However, competitiveness is associated with a larger set of indicators range from infrastructure to legal barriers. In this section, two internationally recognized competitiveness indicators are analysed for five country groups.

The Global Competitiveness Index (GCI) was developed by the World Economic Forum. The index covers 114 indicators under 12 pillars namely "institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication and innovation". The GCI of the World Economic Forum describes competitiveness as "the set of factors, policies and institutions that determine the level of productivity of a country taking into account its level of development". The GCI takes values from 1 to 7, where 1 indicates the worst score and 7 represents the best score.

Figure 3.6



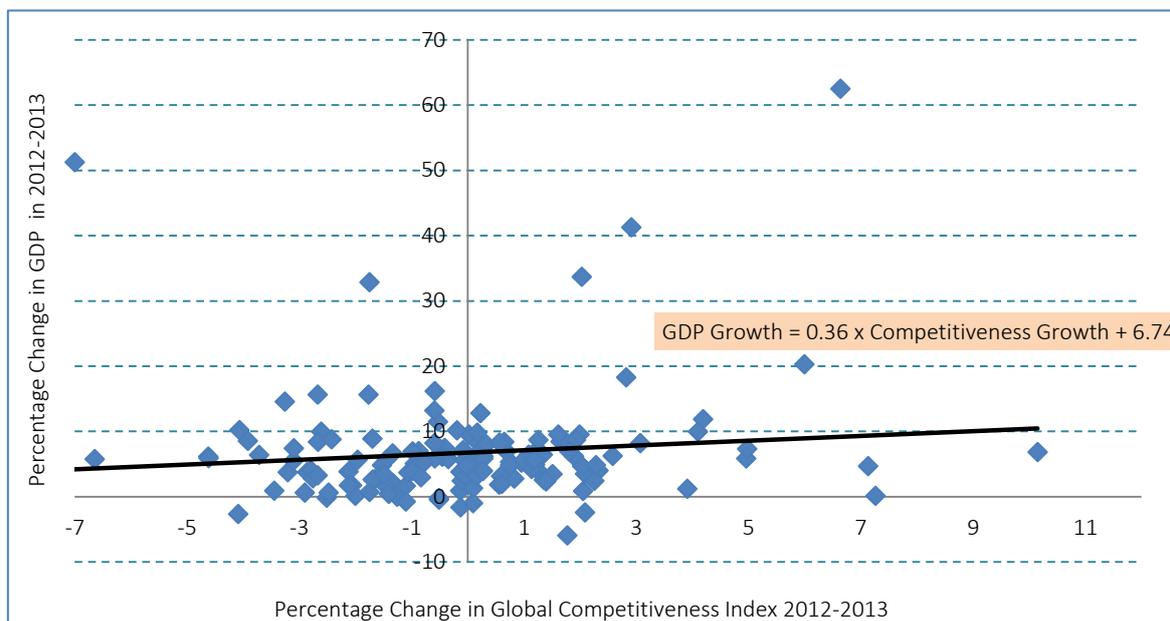
Source: SESRIC Staff Calculations from the World Economic Forum Global Competitiveness Database. Note: Global Competitiveness Index, 1(worst)-7 (best).

Figure 3.6a presents the average GCI scores for five country groups between 2006 and 2015. The average GCI scores recorded small changes in all country groups in the given period. The average GCI score of D-8 countries decreased from 4.08 in 2006 to 4.02 in 2010 and then increased to 4.06 in 2015. In 2006, the smallest average GCI score was (3.76) observed in other OIC countries group, whereas the world average was calculated at 4.22. Due to global economic crisis the world average went down to 4.18 in 2010 indicating an overall deterioration in the competitiveness when compared to 2006. Between 2010 and 2015, the global competitiveness bounced back and reached 4.24. The average score of developed countries stayed well above the world average and was measured to be 5.01 in 2015. As of 2015, the average of D-8 countries continued to remain below the world average and the average of developed countries, although it exceeded the averages of other OIC countries and non-OIC developing countries. Finally, Figure 3.6b shows competitiveness of D-8 countries in 2015 according to their GCI scores. Malaysia with a score of 5.23 is found to be the most competitive D-8 country which was followed by Indonesia (4.52) and Turkey (4.37) in 2015.

The positive association between competitiveness and GDP growth is confirmed in Figure 3.7 by using a dataset for 148 countries over the period 2012-2013. The data for growth in GCI are regressed on the data for GDP growth. The regression analysis has shown that a 10% increase in GCI leads to a 3% increase in GDP growth. Therefore, policies to enhance competitiveness would likely to boost economic growth both in developing and developed countries.

Figure 3.7

Global Competitiveness Index vs. GDP Growth in the World



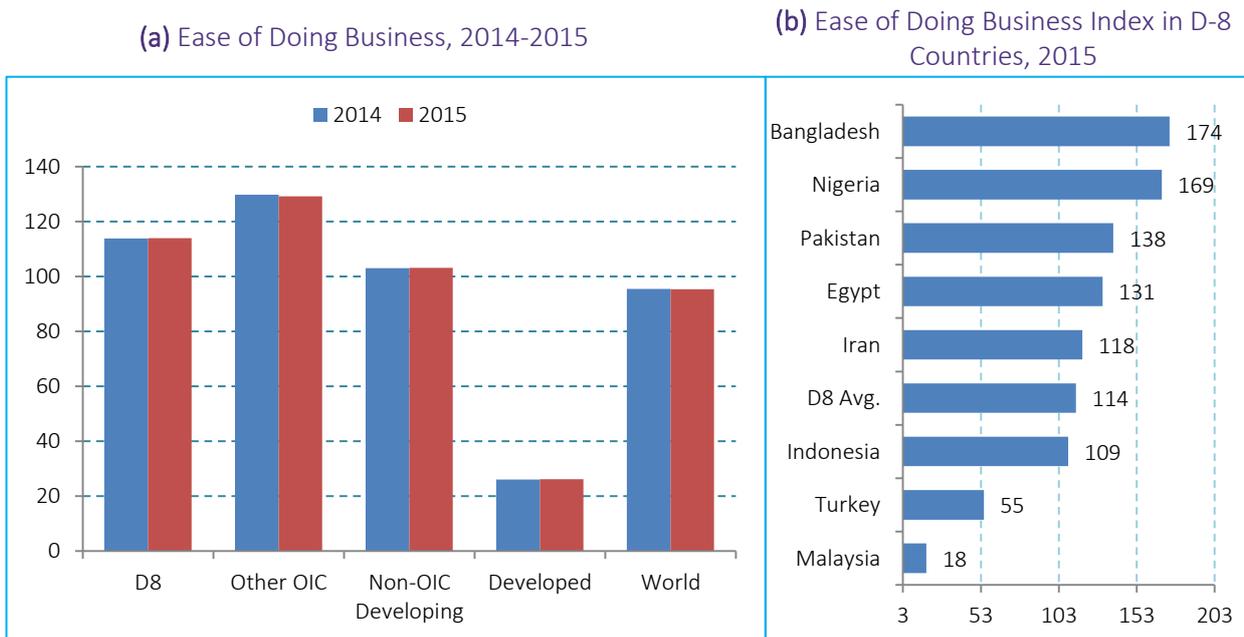
Source: SESRIC Staff Calculations from the World Economic Forum Global Competitiveness Database.

The Ease of Doing Business Index (EDBI) is another indicator that can be used to assess a country's competitiveness internationally. The EDBI was developed by the World Bank that ranks economies from 1 to 189 with the first place being the best by taking ten different dimensions into account. A high ranking (a low numerical rank) means that the regulatory environment is conducive to business operation.

The ease of doing business index is meant to measure regulations directly affecting businesses and does not directly measure more general conditions such as a nation's proximity to large markets, quality of infrastructure, inflation, or crime. A nation's ranking on the index is based on the average of 10 sub-indices:

1. Starting a business – Procedures, time, cost and minimum capital to open a new business;
2. Dealing with construction permits – Procedures, time and cost to build a warehouse;
3. Getting electricity – procedures, time and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse;
4. Registering property – Procedures, time and cost to register commercial real estate;
5. Getting credit – Strength of legal rights index, depth of credit information index;
6. Protecting investors – Indices on the extent of disclosure, extent of director liability and ease of shareholder suits;
7. Paying taxes – Number of taxes paid, hours per year spent preparing tax returns and total tax payable as share of gross profit;
8. Trading across borders – Number of documents, cost and time necessary to export and import;
9. Enforcing contracts – Procedures, time and cost to enforce a debt contract; and
10. Resolving insolvency – The time, cost and recovery rate (%) under bankruptcy proceeding.

Figure 3.8



Source: SESRIC Staff Calculations from the World Bank Ease of Doing Business Database. Note: A higher index score implies an environment that is more difficult to do business.

Figure 3.8a presents the average EDBI scores for five country groups over the period 2014-2015. Only small changes were observed in the average EDBI scores of country groups. The average of D-8 countries was found to be 113.8 where the world average was equal to 95.4. In 2014, the average score of developed countries was amounted to 26, which implies the existence of a regulatory environment that is very much conducive to business operations. On the other hand, other OIC countries obtained a score of 129.8 in 2014 that is a relatively poor performance than the average of D-8 countries. In 2015, in all country groups some negligible changes were observed and the average of D-8 countries went up to 114 that reflect a small improvement in doing business environment. On the other hand, the world average stayed the same as 95.4 in 2015. In 2015, among D-8 countries, Malaysia obtained the lowest score (18) indicating that it had most business friendly environment, followed by Turkey and Indonesia (Figure 3.8b).

As different indicators on competitiveness (i.e. GCI and EDBI scores) revealed, D-8 countries, on average, need to intensify their efforts to improve their overall competitiveness through reforms and policy-actions in different domains of socio-economic life from regulatory framework to basic infrastructure. These reforms and policy actions not only will improve competitiveness but also will boost productivity growth, and therefore will associate with higher standards of living.

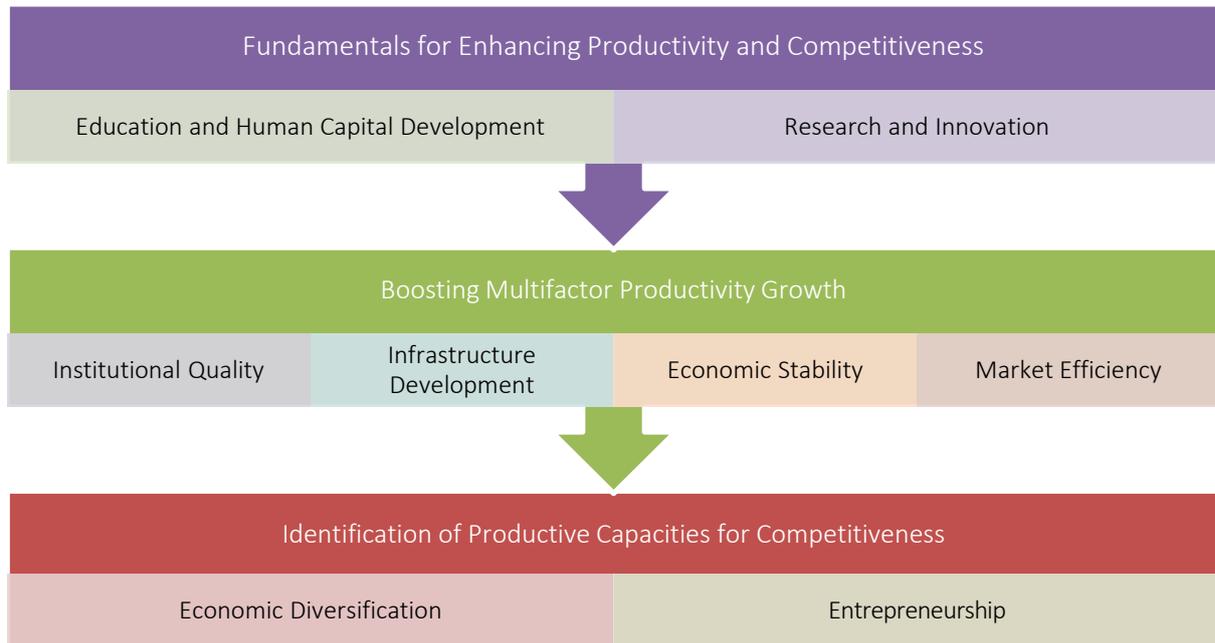
## 4 FOSTERING PRODUCTIVITY AND COMPETITIVENESS

Competitiveness is a reflection of the overall circumstances including institutions, policies and factors that have impact on the level of productivity. While the level of productivity is critical in determining the returns to investments, higher returns to investments bring higher growth rates. Therefore, more competitive economies with higher productivity levels are expected to generate higher income levels for their citizens. It is well-known that productivity is the main determinant of economic growth.

Countries develop and become more competitive as they move from factor-driven economic structure to innovation-driven economic structure. Countries abundant with natural resources and unskilled labour can only compete on the basis of prices. As they become more efficient in production processes, quality of goods can be improved and become more sophisticated with intermediate technologies and relatively skilled labour force. This increases their competitiveness on the basis of quality as well as prices. Countries with innovation capabilities, on the other hand, can compete with new and original products, but they require constant investment in research and innovation to maintain their level of competitiveness.

Whatever the levels of development economies achieve, they need certain strategies to maintain existing level of competitiveness but also to improve it further. At every stage, human capital development and investment in research and development is critical to improve existing capacities. However, these are not the only critical factors in productivity enhancement. In order to attain higher efficiency in production processes, some other factors that have impact on the overall productivity should be taken into account. In this context, if factors that are highly instrumental for efficiency in business such as institutions, infrastructure, economic environment, financial sector and labour market are not well developed to boost the productivity growth, then investments in human capital and research and innovation would not yield the desired outcome.

**Figure 4.1**  
 Critical Factors in Fostering Productivity and Competitiveness



The critical step to boost productivity is therefore the creation of an environment that is conducive to productivity improvement. The conditions of such an environment depend largely on the country characteristics. Market size, population, market potential and connectivity with neighbouring economies, and factor endowments and their characteristics are some of the factors that affect the actions to be taken to make the environment conducive to productivity improvement at country level. The requirements for the development and deepness of financial sector, for instance, may vary from country to country depending on the needs of the private sector.

Even if the environment is ready for productivity improvement, countries may not be focusing on the 'right' activities that will bring real competitive and productivity advantages. For that reason, countries should allow for an identification process of productive capacities through supporting entrepreneurship and economic diversification. Dynamic entrepreneurial activities in an environment conducive to productivity growth (with good quality institutions, infrastructure, economic stability and efficient markets) will help countries to find their true potentials. An economic diversification process supported by governments and dynamic entrepreneurship will at the end help countries to identify their productive capacities for competitiveness.

This line of reasoning brings us to a three-step approach in discussing the issue of fostering productivity and competitiveness and Figure 4.1 shows all the factors that are considered in this report as critical. Each of the factors listed in the chart are definitely interconnected and well-dependent on each other. Therefore, it does not imply a step by step approach in fostering productivity and competitiveness. Countries may well be engaged in activities that promote, for example, human capital development, institutional quality and economic diversification at the same time, but the purpose of this endeavour will be to improve the conditions for better educated labour force to identify and then engage in new productive activities that can foster the

overall productivity in the country. For that reason, what is provided in Figure 4.1 is to merely guide us on the relative significance of factors in the process of economic development.

In this context, this section is organized as follows. The next subsection deals with the fundamental factors identified as critical for enhancing productivity and competitiveness, which are education and human capital development, and research and innovation. Subsection 5.2 tackles the factors that are necessary to create an environment conducive to multifactor productivity growth. These include institutional quality, infrastructure development, economic stability and market efficiency. Finally, two main constituents of identification process of productive capacities, namely economic diversification and entrepreneurship, are discussed in subsection 5.3.

#### 4.1 Fundamentals for Enhancing Productivity and Competitiveness

The critical question is what determines the growth rate of the economy over the long run and how can it be affected through policy measures? This is an important question in identifying what makes some countries rich and others poor. Technically, a standard production function depends on the total amount of labour and capital and the total productivity of these factors. As highlighted in section 3, employing the most commonly used production function in the literature, the Cobb-Douglas production function, it can be depicted that  $Y_t = A_t K_t^\alpha L_t^{1-\alpha}$ , where  $Y_t$  is total output,  $K_t$  is capital,  $L_t$  is labour and  $A_t$  is total productivity at year  $t$ . An increase in  $A_t$  increases the productivity of the other factors and usually called as total factor productivity, or multifactor productivity. An increase in  $A_t$  results in higher output as it increases the capabilities of other factors of production to produce one unit of output with fewer amounts of manpower and capital stock.

Long-run growth is determined by the level of technological progress, because growth cannot be sustained by increases in capital per worker or increases in the number of workers. In order to expand the efficiency with which an economy uses its inputs, productive capacities of each production factors should be improved. In this context, in order to improve the level of labour productivity, the capacity of labour force should be developed through increasing their skills and knowledge. This can be achieved through human capital development and quality education. Higher productivity of labour may be reflected in rates, stability of employment, job satisfaction or employability across jobs or industries. On the other hand, productivity of capital can be increased through technological advancement. This requires investment in research and development activities to promote innovation of new technologies and processes and to increase firm productivity. The productivity of firms, in addition to output per worker, may be reflected in market share and export performance. The overall benefits from higher labour and firm productivity may be evident in increased competitiveness and employment or in a shift of employment from low to higher productivity sectors.

In this context, human capital development and technological innovation are considered to be the essential factors in enhancing productivity and competitiveness. Accordingly, this subsection investigates the role of education and research and innovation in enhancing the productive capacities and improving competitiveness.

#### 4.1.1 Education and Human Capital Development

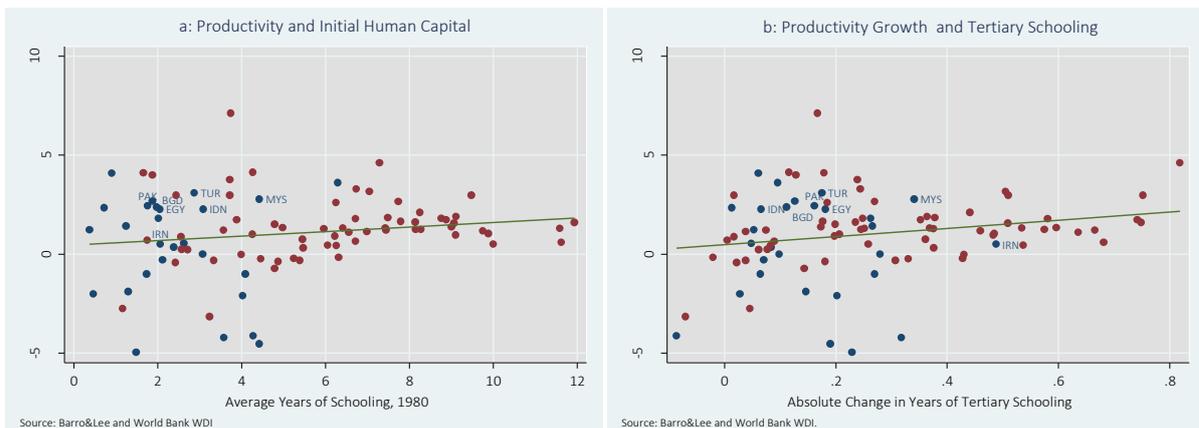
Formal education is highly instrumental to improve the production capacity of a society. Better education improves the production processes in several ways. Educated, or skilled, workers are able to perform complex tasks and thereby contribute to producing more technologically sophisticated products. Especially in developing countries, skilled workers increase the absorptive capacity of the country by acquiring and implementing the foreign knowledge and technology, which is of crucial importance in successful economic diversification and development.

A qualified workforce, also called human capital, is for that reason crucial for improving productive capacities. Human capital is used to refer to the knowledge and capabilities embodied in people that can be utilized to advance the production techniques and contribute to the social and economic development. The term “human capital” is used because people cannot be separated from their knowledge or skills in the way they can be separated from their financial and tangible assets. Along with physical capital stock, human capital stock is one of the factors of production in determining the economic prosperity and progression, with the stock of human capital playing an important role in determining the ability to absorb new knowledge and technologies, and thus increasing labour productivity (Mankiw et al., 1992). Productivity growth in turn is a key factor in promoting long-term economic growth.

The role of education in increasing the productivity and efficiency of labour force by increasing the cognitive stock of economically productive human capability is well acknowledged. A survey of the empirical results conducted by Sianesi and Van Reenen (2000) shows that an overall 1 % increase in school enrolment rates leads to an increase in GDP per capita growth of between 1% and 3 %. An additional year of secondary education leads to more than a 1 % increase in economic growth each year. Jorgenson *et al.* (2005) find that the increase in the employment of college-educated workers contributed significantly to the increase in US productivity growth since 1995. Human capital accumulated through on-the-job-training (OTJT), especially for workers with low qualifications, increases productivity at the firm level. OTJT is also a direct source of innovation for firms that strengthen their long-term competitiveness (Blundell et al., 1999). Konings and Vanormelingen (2011), by using the data from 1997-2006 of Belgium, concluded that productivity increases by 1.4%-1.8% in response to an increase of 10 percentage points in the share of trained workers.

A simple scatter plot of initial human capital levels and subsequent growth in labour productivity,

**Figure 4.2**  
 Labour Productivity and Schooling

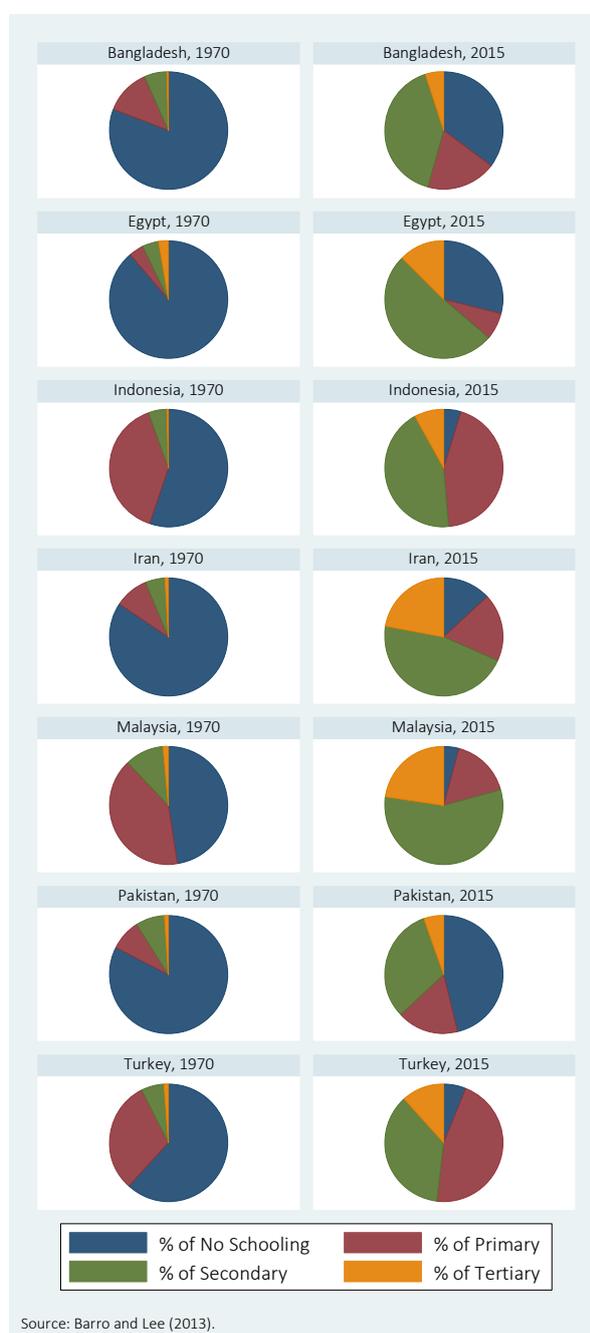


measured as the average income growth per worker, over 1980–2010 is shown in Figure 4.2a. The raw correlation between these two variables is clearly positive, suggesting that economies with larger initial human capital stocks tend to exhibit higher productivity growth, holding all else constant. Figure 4.2b shows that an increase in tertiary schooling is also positively correlated with productivity growth. In fact, there is substantial controversy in the literature about whether it is the level of years of schooling or the change in years of schooling that is the more important driver of economic growth. It has been also suggested in the literature that education is important in facilitating research and development and the diffusion of technologies, with initial phases of education more important for imitation, and higher education more important for innovation (Vandenbussche, et al., 2006).

For the development of human capital, key prerequisite is not only to increase the access and participation to education, but also to improve the progression and quality in education. D-8 countries have made significant progress in improving the participation to education over that last four decades. Figure 4.3 compares the schooling ratios with respect to the levels attained for the years 1970 and 2015, respectively, in D-8 countries for which data are available. Four decades ago, a large share of the labour force had no school education at all in most D-8 countries. In some countries, including Egypt, Iran, Pakistan and Bangladesh, this share was more than 80% and reaching as high as 89% (in Egypt). Southeast Asian countries, Indonesia and Malaysia, had the most favourable picture in terms of school attendance, followed by Turkey. Comparing the level of achievements in secondary school participation among the all D-8 countries, Egypt had the lowest share in 1970 with only 4.4% and Malaysia had the highest with 10.7%.

This picture has substantially changed during the last four decades. The share of population with no schooling has considerably shrunk in many of the countries. While Malaysia, Indonesia and Turkey almost achieved full participation to schooling and high participation rates in secondary and tertiary level schooling, the share of population over 25 years old with

**Figure 4.3**  
 Schooling Ratios in OIC Countries, 1970 vs. 2015



no schooling is still 46.3% in Pakistan as of 2015. Moreover, Malaysia and Iran substantially increased the share of population with tertiary education. Comparing again the level of achievements in secondary school participation among the D-8 countries in 2015, Pakistan had the lowest participation with 31.5% and Malaysia achieved a participation level of 56.7%. This shows the discrepancies among the D-8 countries with regard to school participation and educational achievements.

It has been observed that although many countries have made impressive progress over the past four decades, disparities remain between countries. Moreover, whatever gains made in access to education, it should be supported with a parallel improvement in quality. Only with good quality education, productive capacities of the people can be increased. Measuring and comparing the quality of education across the world is, however, not an easy task. A programme pursued by OECD, known as the Programme for International Student Assessment (PISA), is one of the major studies conducted to measure the quality of education.<sup>1</sup> Though the number of D-8 countries

**Table 4.1**  
Comparing Performances in Education for Selected Countries

	Mathematics		Reading		Science	
	Mean score	Annualised change	Mean score	Annualised change	Mean score	Annualised change
OECD average	494	-0.3	496	0.3	501	0.5
Singapore	573	3.8	542	5.4	551	3.3
Korea	554	1.1	536	0.9	538	2.6
Japan	536	0.4	538	1.5	547	2.6
Switzerland	531	0.6	509	1	515	0.6
Germany	514	1.4	508	1.8	524	1.4
United Kingdom	494	-0.3	499	0.7	514	-0.1
United States	481	0.3	498	-0.3	497	1.4
Sweden	478	-3.3	483	-2.8	485	-3.1
<b>Turkey</b>	<b>448</b>	<b>3.2</b>	<b>475</b>	<b>4.1</b>	<b>463</b>	<b>6.4</b>
Romania	445	4.9	438	1.1	439	3.4
Bulgaria	439	4.2	436	0.4	446	2
<i>United Arab Emirates</i>	434	NA	442	NA	448	NA
<i>Kazakhstan</i>	432	9	393	0.8	425	8.1
Thailand	427	1	441	1.1	444	3.9
Chile	423	1.9	441	3.1	445	1.1
<b>Malaysia</b>	<b>421</b>	<b>8.1</b>	<b>398</b>	<b>-7.8</b>	<b>420</b>	<b>-1.4</b>
Mexico	413	3.1	424	1.1	415	0.9
<i>Albania</i>	394	5.6	394	4.1	397	2.2
Brazil	391	4.1	410	1.2	405	2.3
Argentina	388	1.2	396	-1.6	406	2.4
<i>Tunisia</i>	388	3.1	404	3.8	398	2.2
<i>Jordan</i>	386	0.2	399	-0.3	409	-2.1
<i>Qatar</i>	376	9.2	388	12	384	5.4
<b>Indonesia</b>	<b>375</b>	<b>0.7</b>	<b>396</b>	<b>2.3</b>	<b>382</b>	<b>-1.9</b>
Peru	368	1	384	5.2	373	1.3

*Source:* OECD. Countries and economies are ranked in descending order of the mean mathematics score in PISA 2012. Annualised changes are compared to the test scores in 2009.

<sup>1</sup> PISA is an internationally standardised assessment that was jointly developed by participating economies and administered to 15-year-olds in schools to test reading, mathematical and scientific literacy in terms of general competencies. See <http://www.oecd.org/pisa/home/> for more information about the programme.

included in the programme is limited, it provides an opportunity to compare the quality of education in human capital development in D-8 countries with other countries.

Table 4.1 shows the mean performance of students on mathematics, reading and science for all 3 D-8 countries taking part in the PISA 2012 study of OECD, along with some other comparison countries. The average score among OECD countries is approximately 500 points and the standard deviation is 100 points. About two-thirds of students across OECD countries score between 400 and 600 points. Among the D-8 countries, Turkey and Malaysia have average performance over 400, but Indonesia had average scores below 400 points. Turkey provides the highest quality education within the D-8 and other OIC countries but it is still below the OECD average and occupies only the 44<sup>th</sup> position among the 65 countries or economies surveyed in the study. However, it is the only D-8 country that achieved to positive annualized changes in the mean scores of three subcategories of the test. Malaysia improved the quality of education in the area of Mathematics around 8% per year since last survey in 2009, but experienced a sharp fall in reading by almost same magnitude.

#### 4.1.2 Research and Innovation

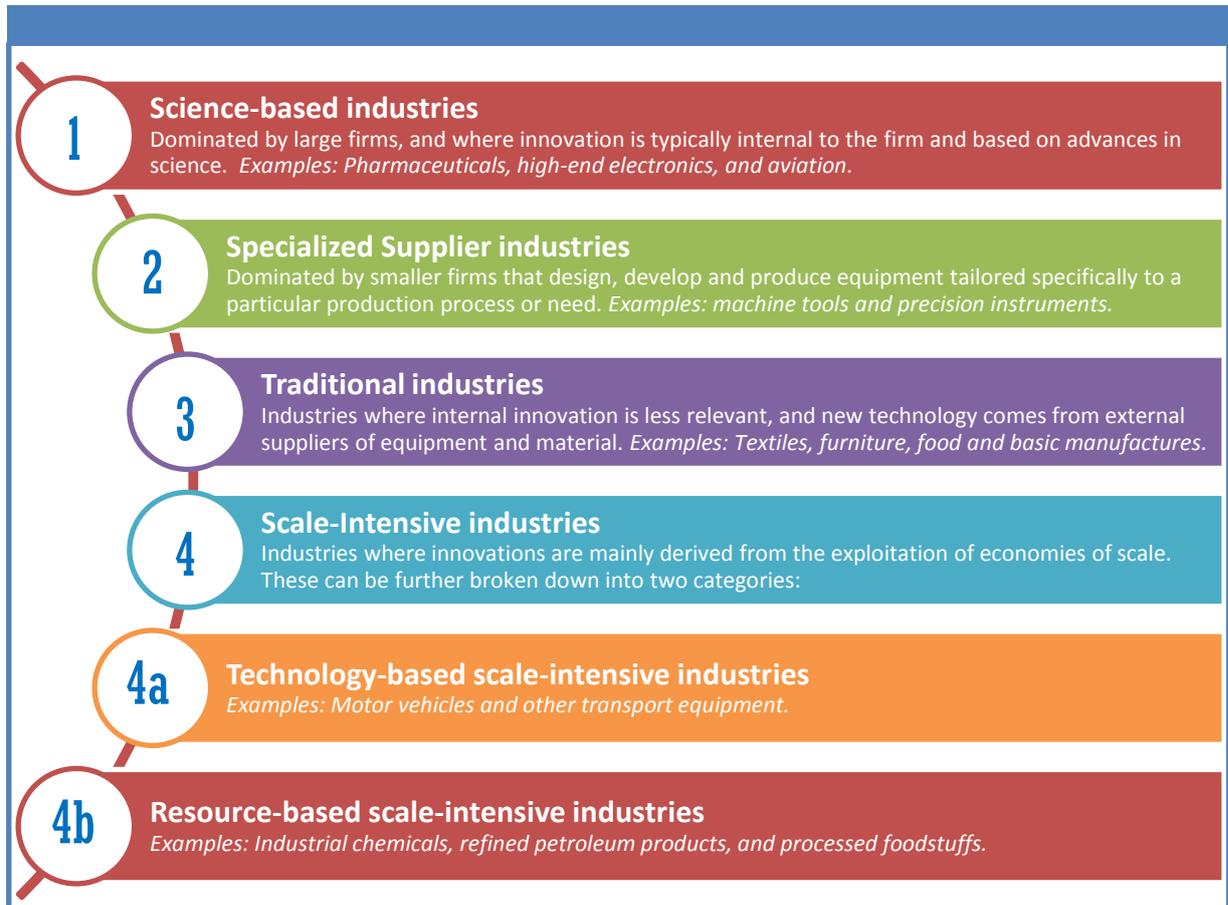
The ability to create, diffuse and implement knowledge and technology is critical for firms and countries to thrive in an increasingly competitive global economic environment. Competitiveness can be achieved in two ways, either developing new products (technological competitiveness) or improving efficiency and reducing labour costs (cost competitiveness). Technological competitiveness requires substantial investment in research and innovation. Behaviours of firms are substantially affected by the nature of competition and a favourable competition environment forces firms to become innovative and achieve productivity gains.

However, innovation requires significant investment and long-term perspective. Therefore, available resources for research and innovation need to be allocated according to national development strategies and priorities. Today's knowledge economies heavily rely on research and development activities and innovative technologies to sustain their competitive status vis-à-vis other countries. On the other hand, the expected benefits of investment in innovative activities in low income countries may be disappointing due to insufficient framework conditions. Establishing sound and sustainable ICT systems, building world-class universities and financing top research are expensive endeavours. Therefore, it is critical to allocate available resources in line with developmental needs and strategies.

In general, innovation refers to the creation of new or significantly improved products, processes, organizations that adds value to society, markets and governments. Many of the techniques and processes are cumulative and interdependent. Educational system, research infrastructure, functioning of capital markets and availability of information and communication technologies are some of the external factors that influence the innovative capacities of firms. Investment needs to be fairly balanced across the areas of higher education, innovation and ICT, otherwise growth can seriously falter.

Technological progress can come from adopting knowledge that is globally available ("catching up") or developing new knowledge. Both are relevant to D-8 countries, depending on the state of development of each industry in each country. Industries in which innovation takes place depend on the level of development in each country. As highlighted in Tiffin (2014), innovation activities in

Figure 4.4  
Industries by Their Sources of Innovation



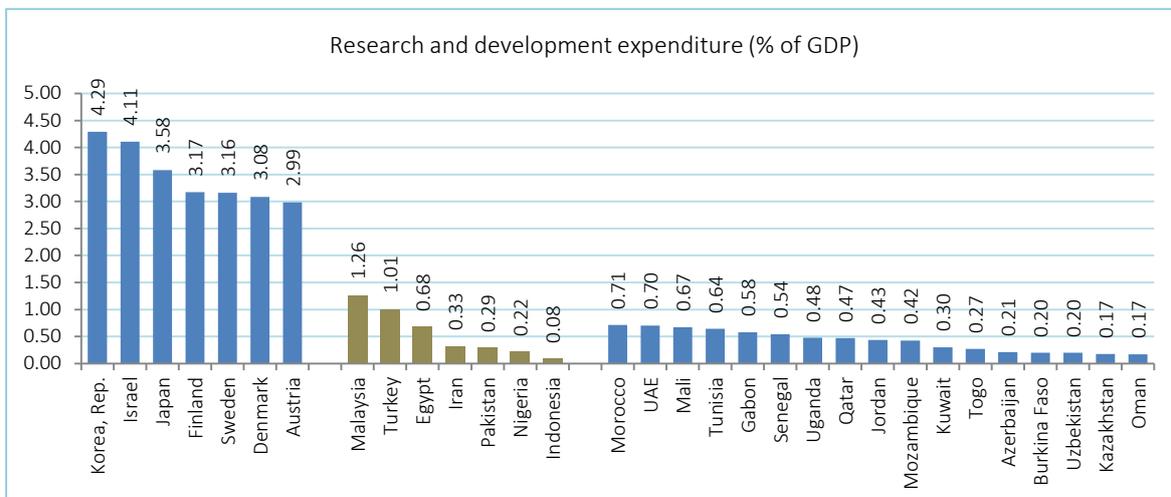
each industry hinges on the nature of industry. Some industries are dominated by large innovative firms while others may be dominated by smaller firms with ability to provide specialized products. In other industries, capability to innovate is based on only the ability to exploit economies of scale. Figure 4.4 shows the classification of industries based on their source of innovation.

In advanced economies, the weight of resource-based scale-intensive industries is smaller compared to technology-based scale-intensive industries as well as science-based industries and a large proportion of innovation stems from specialized suppliers. In most D-8 countries, traditional and resource-based industries are dominant. Specialized supplier industries have often viewed as one of the key sources of competitiveness. Firms in this sector tend to be small and medium in size, with a marked capacity for incremental innovation and a diversified range of high-quality, high-margin products with few substitutes (Tiffin, 2014). Therefore, D-8 countries may focus more on supporting industries where there is room for innovation and competitiveness.

#### Expenditure on Research and Development

Research and innovation are activities that have long been associated with strong economic activity and well-being. These activities typically account for between 1% and 4% of a country's gross domestic product (GDP) in developed countries and below 1% in developing countries. Therefore, in developing countries many of current scientific activities are under-funded. Such activities are

**Figure 4.5**  
 Research and Development Expenditure (% of GDP), 2014 or latest after 2007

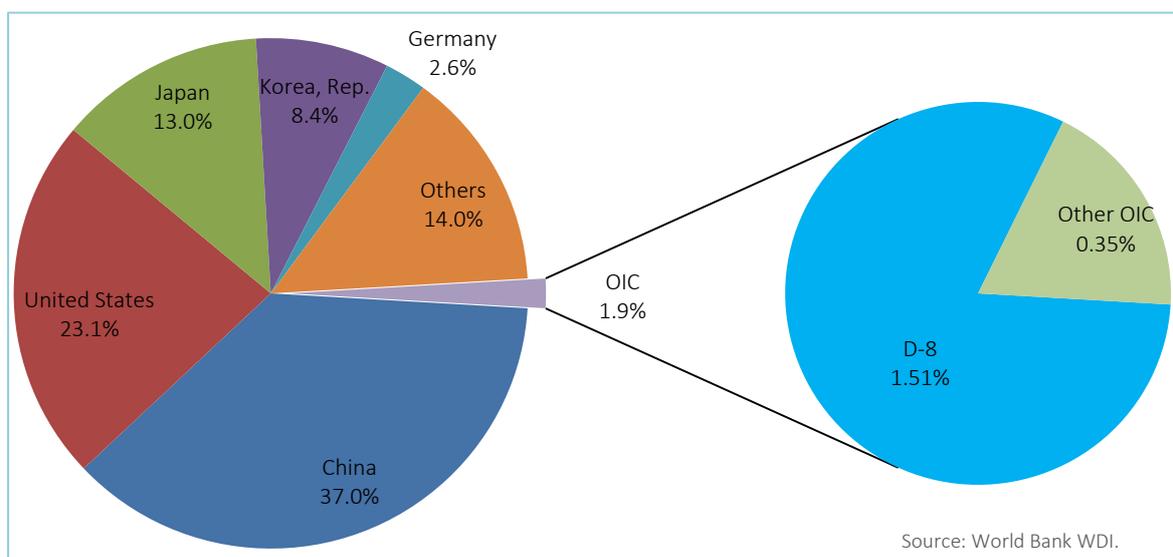


Source: World Bank WDI.

often driven by individual efforts and interests and for advancing the academic career. It is common to observe commitments by relevant ministers to strive towards investing at least 1% of GDP on research and development (R&D), but realization is usually much lower than that.

R&D expenditure in D-8 countries increases from year to year but it is still unsatisfactory (Figure 4.5). Only Malaysia and Turkey spend more than 1% of their GDP for research and development, which are also the highest figures in all OIC member countries. This figure is as low as 0.08% in Indonesia. According to SESRIC (2016), more than 76% of the global R&D expenditures is spent by developed countries, of which 27.4% by the USA, 20.7% by the EU, and 9.7% by Japan. According to the latest data available, Korea (4.3%), Israel (4.1%) and Japan (3.6%) are worldwide the top countries in terms of allocating the most resources for R&D.

**Figure 4.6**  
 Total Patent Applications in the World and D-8 Countries in 2014



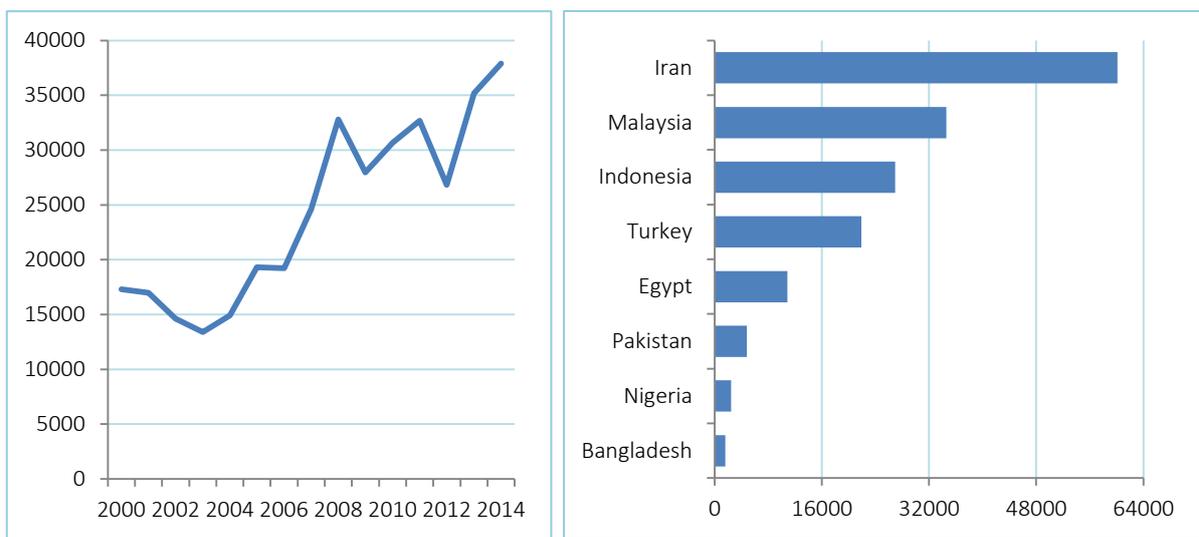
Source: World Bank WDI.

### Patent applications

While expenditure on R&D reflects the importance given to the research and innovation, the number of patent applications shows how successful are the investments in these areas. According to statistics from the World Intellectual Property Organization (WIPO), the total number of patent applications around the world in 2014 is reported to exceed 2.5 million. China, USA, Japan, and Republic of Korea accounted for more than 80% of the total patent applications in the world (Figure 4.6). While all OIC countries account for only 1.9% of total patent applications, most of them were made by D-8 countries, corresponding to 1.56% of the world total.

**Figure 4.7**

Annual Patent Applications by D-8 Countries over Time (left) and Total Application by Individual D-8 Countries during 2010-2014 (right)



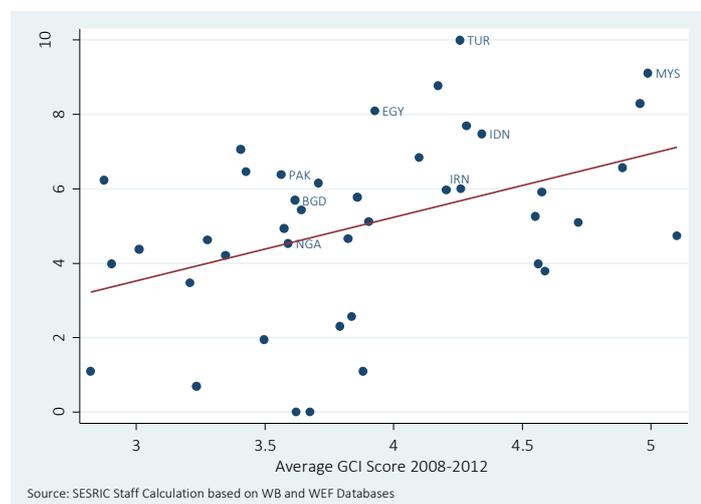
Source: World Bank WDI.

In D-8 countries, total number of annual patent application follows an upward trend over the last decade and reached over 37.800 in 2014 (Figure 4.7). Total patent application (by residents and abroad) during 2010-2014 was highest in Iran (60,153), Malaysia (34,600) and Indonesia (26,933). These three countries account for more than 73% of all patent applications made in D-8 countries.

Figure 4.8 depicts the relationship between total patent applications during the period of 2008-2012 and average global competitiveness score during the same period for the D-8 and other OIC countries. Countries with higher number of patent applications attained better positions in global competitiveness rankings.

**Figure 4.8**

Patent Applications vs. Global Competitiveness



Source: SESRIC Staff Calculation based on WB and WEF Databases

This clearly shows the importance of investment in research and innovation for better competitiveness in the world. Therefore, while focusing on increasing the expenditures and improving the environment for R&D, it must be ensured that satisfactory innovative outcomes are obtained from these activities.

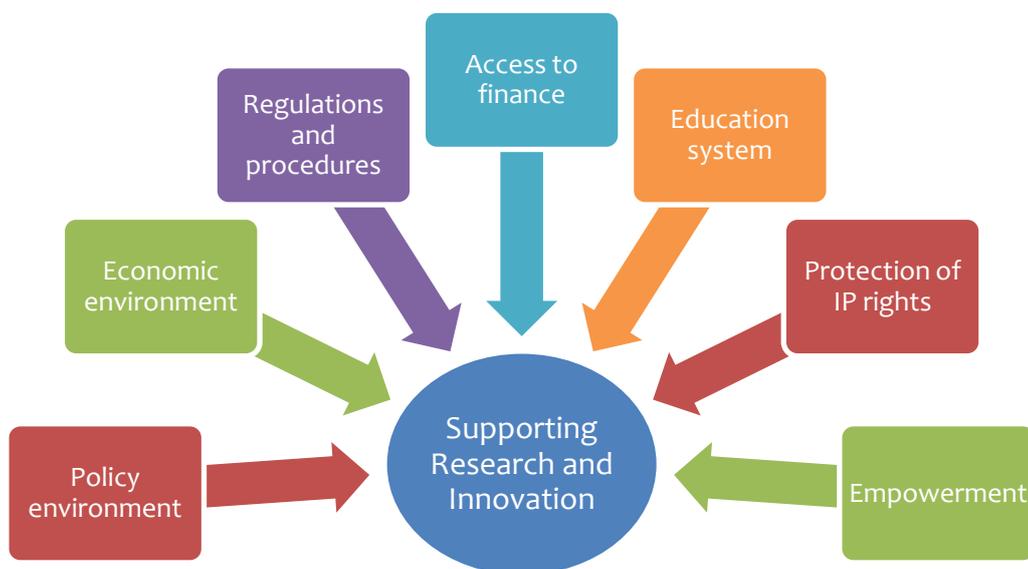
### Supporting Research and Innovation

Ideas need an innovation-friendly environment to grow and generate benefits to all societies through new products and/or services. If enterprises in D-8 countries are to become competitive in the global economy, policies in D-8 countries should focus on creating an environment that promotes innovation. The main factors and framework conditions in supporting research and innovation are provided in Figure 4.9. Most importantly, in order for innovative ideas to create growth and jobs through better products and services, access to finance for research and innovation should be improved, regulations and procedures should be in line with international standards, and education system should support creative capabilities. Policy and economic environment, protection of intellectual property rights and empowerment of people are also critical factors in research and innovation.

**Policy environment:** Even though innovation is led largely by firms, public policy can have significant impact on the environment in which firms operate by making it more conducive to innovation. It is necessary to ensure a better coordination in policymaking, establish stronger mechanisms for financing innovation and create coherence and synergy among public policy interventions. This is required particularly when the innovation depends on multisectoral coordination. Strengthening innovation does not necessarily rely on financial contribution of state authorities or any other kind of public investment. By taking some crucial structural policy reforms, policymakers can set the framework conditions that support innovation more effectively. This may include improving regulatory environment for innovation through entrepreneurship support programmes, better administrative regulations and tax reforms.

Figure 4.9

Critical Factors in Supporting Research and Innovation



**Economic environment:** There must be enough demand for innovative products and services that meet national and global needs. A well-functioning market will also create the demand from firms, and even consumers, for such products and services due to competitive pressures. With clear economic policies and overall macroeconomic stability, firms are more likely to enter into research and innovation activities. Opening markets for competition, ensuring market-determined pricing mechanisms and devising standards and regulations that induce innovation are among the approaches that governments can adopt to improve the economic environment for innovation.

**Regulations and procedures:** Standards, design, accreditation and metrology are all deeply embedded in the modes and styles of innovation practice. If not properly formulated, regulations on these practices may hinder business' ability to innovate. Regulations created to protect only the rights of worker, public property or the environment may have produce negative stimulus on innovative activities. A good balance between diverse interests should be ensured to promote research and innovation. Regulations should be devised to manage intellectual property rights and encourage the transfer of know-how. Specific measures should also be formulated to narrow skills gaps and improve absorptive capacity in the productive sector to create demand for transfer of knowledge and technology, and how to share the monetary benefits coming from such transfers.

**Access to finance:** Innovation is inherently risky and may require long-term perspective. Therefore, access to finance is critical for such risky investments. Financial sector must be able to provide enough funds for healthy risk-taking, entrepreneurship and long term investment. Functioning of venture capital and angel investing as well as the securitization of innovation-related assets may well provide sources to innovative start-ups. When public funds come into play as an alternative source of finance, they should be distributed based on a clear and well-formulated approach. Risk sharing instruments can also be used to support innovation of SMEs with significant research and innovation activities.

**Education system:** Increase in human capital can increase the innovative capacity of the economy and it can facilitate the diffusion and transmission of knowledge needed to understand and process new information and to implement new technologies (Benhabib and Spiegel, 2005). Broad and relevant education and development of comprehensive skills encourage people for innovative undertakings. Policies should be directed to improve the relevance and quality of curriculum, teaching methods as well as teacher quality with a view to meeting the requirements of society for a more productive and competitive economy.

**Protection of intellectual property rights:** Protecting the rights of the innovators after possibly very costly and timely process is of utmost importance. Without protection and appropriate enforcement of intellectual property rights (IPRs), an important incentive for innovation will be lost, because it will not be possible for firms to recover their investment costs. It is also important to keep a balance between incentives for innovation and the public benefit from the diffusion of new knowledge, particularly when developing patent systems.

**Empowering people:** In order to empower people to engage in innovation, education and training policies should be adapted to the needs of society. Greater attention should be given to supporting entrepreneurial activity and creation and growth of new firms, because entrepreneurship is critical for translating innovative ideas into jobs and prosperity. New firms are generally more proactive in exploiting technological and commercial opportunities compared to more established firms.

## 4.2 Boosting Multifactor Productivity Growth

The analysis in the previous subsection pointed to a number of factors which are fundamental for enhancing productivity and hence the degree of competitiveness in D-8 countries. Better competitiveness can be achieved by increasing the productivity of the factors of production through supporting human capital development as well as research and innovation. While these factors are considered to be the essentials for any endeavour towards attaining higher productivity and growth, there are other factors that can further improve the efficiency and outcome of any investment made to support productivity.

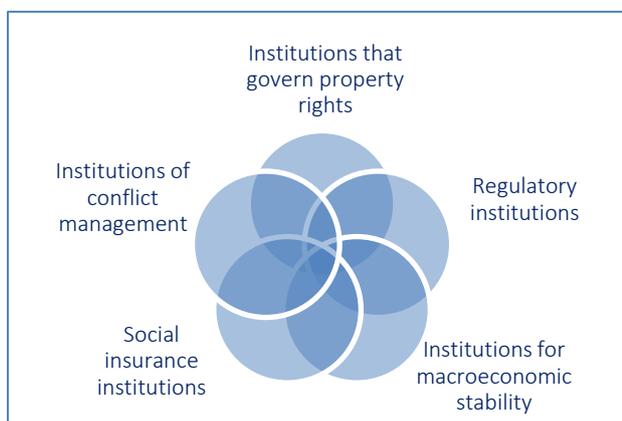
In this subsection, a number of such factors for boosting productivity and competitiveness are examined. These include institutional quality, infrastructure development, economic stability and market efficiency. All of these factors are considered to be important dimensions of realizing higher multifactor productivity growth.

### 4.2.1 Institutional quality

In recent years, a large number of economic studies have highlighted the important role of institutions in economic development. Especially, cross-country empirical analyses find that income differences across countries are closely related to variations in institutional quality (Hall and Jones, 1999; Acemoglu, Johnson and Robinson, 2001). Also in line with new institutional economics, Rodrik, Subramanian and Trebbi (2002) assert that institutions, compared to geography and trade, explain better the variation of income inequality between developed and developing countries in the world. However, before analysing the channels through which institutions may affect economic performance, it should be useful to begin with a definition of institutions.

Despite the fact that there is no consensus on the exact definition of institutions, the Nobel Prize-winning economist Douglas North's concept of institutions is frequently used in the economics literature. According to North (1990), institutions are "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction." In this definition, constraints cover formal (rules, laws, constitutions, regulations) and informal (norms of behaviour, conventions, codes of conduct) restrictions. At a more specific level, institutions can be defined in terms of property rights' protection and regulatory frameworks by which authorities defend their population against economic shocks and provide social protection.

In the light of the above definition, this subsection aims to accentuate the relationship between institutions and economic performance, specifically productivity and competitiveness. More precisely, institutions promote productivity and competitiveness by reducing transaction costs which cover search and information costs, negotiation costs, policing and enforcement costs (Coase, 1992). Institutions decrease transaction costs by setting up common legal frameworks (contracts, commercial norms and rules) and by encouraging trust with the establishment of policies and justice systems. In this context, the need



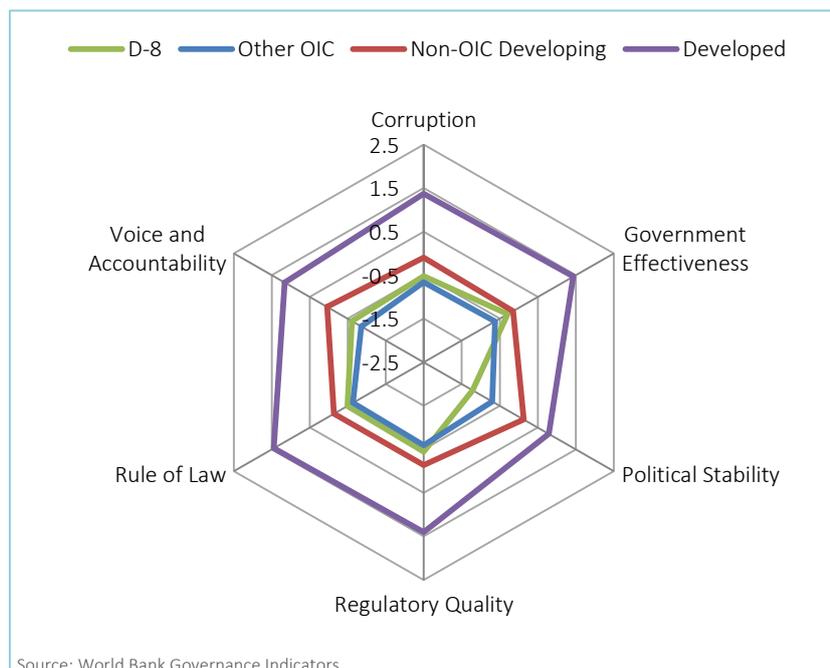
for institutions will change over time and space through the country's history, geography, stage of development and its political will. For instance, small rural communities in least developed countries rely on kinship, ethnic and religious ties for economic exchange. In these communities where transaction costs are low, adhering to norms of behaviour may be enough to guarantee compliance with agreements on trade. However, large and modern societies require more information about trading partners, and for institutions which assure agreements in the form of contracts and compliance to the agreed conditions. In other words, economic exchange will not take place until individuals know that the decisions they take and the contracts they make will be protected by law. Given these challenges, as economic relations develop and become impersonal, transaction costs may be very high without institutions that reduce uncertainty and opportunistic behaviour (Bardhan and Udry, 1999).

Besides transaction costs, Rodrik (2008) affirms that markets are not self-creating, self-regulating, self-stabilizing and self-legitimizing. As a result of these problems, markets need institutions. In other words, without institutions, incentives and price signals that are essential to the functioning of a competitive market economy cannot work in a proper manner. In the literature, economists agree on at least five types of institutions that they consider vital for economic development (Rodrik, 2008; Rodrik and Subramanian, 2008). These are institutions that govern property rights; regulatory institutions; institutions for macroeconomic stability; social insurance institutions and institutions of conflict management.

Alongside economic development, it is essential to have a most accurate measurement of the institutional quality. An indicator used in several economic studies is the aggregate governance index developed by Kaufmann, Kraay and Zoido-Lobaton (1999a). Kaufmann et al. (1999a) first define governance as "the traditions and institutions by which authority in a country is exercised." This definition is then used to measure six broad categories of governance collected from several indicators. These are: 1)

voice and accountability: ability of citizens to choose their leaders, enjoy civil and political rights and have an independent press; 2) political instability and absence of violence: probability that a state will not be overthrown by unconstitutional or violent means; 3) government effectiveness: quality of public service delivery and competence and independence of the civil service; 4) regulatory quality: relative absence of state regulation on

**Figure 4.10**  
 Institutional Quality and Governance (2015)



Source: World Bank Governance Indicators.

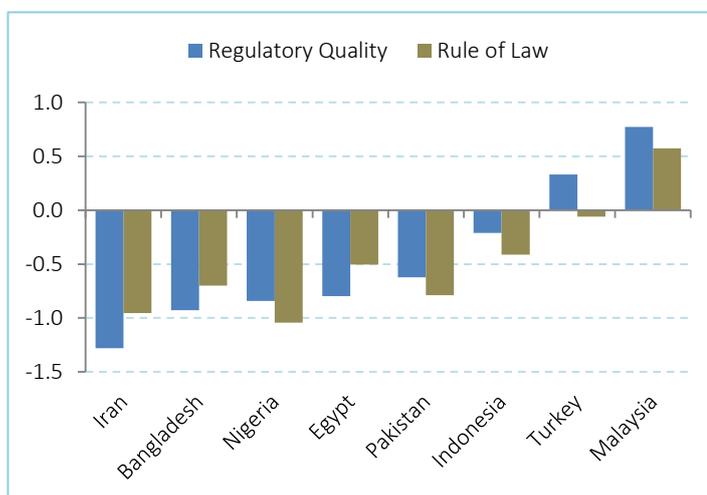
goods markets, banking system and foreign trade; 5) rule of law: protection of persons and property against violence and theft, independence and efficiency of the judiciary and contract enforcement; and 6) control of corruption: public power is not abused for private gain or corruption. Kaufmann et al. (1999b) show that countries having higher values on these six measures tend to have lower infant mortality, higher literacy rates and higher per capita incomes. The study of Kaufmann and others serve as a reference for many empirical studies that explore the link between the quality of institutions and economic development.

Figure 4.10 compares the averages of the estimates under these six categories for D-8 countries with other country groups in 2015. While developed countries outperform developing countries in all categories, other developing countries also do comparably better than D-8 and other OIC countries. In none of the categories, D-8 countries as a group attain a positive score. Other developing countries could attain a positive score only in political stability and voice and accountability categories. On the other hand, these two categories are the weakest categories for D-8 as well as other OIC countries. On the other hand, government effectiveness is the strongest category for D-8 countries, which is -0.29. All these reflect the lower level of institutional quality in D-8 countries.

For effectively enhancing productivity and competitiveness, although each of the categories is critical, two of them are of particular importance: regulatory quality and rule of law. As depicted in Figure 4.11, only Malaysia could attain positive scores in both of these categories and Turkey in only one category. While Iran appears to have the lowest score in terms of regulatory quality, Nigeria obtains the lowest score in terms of rule of law.

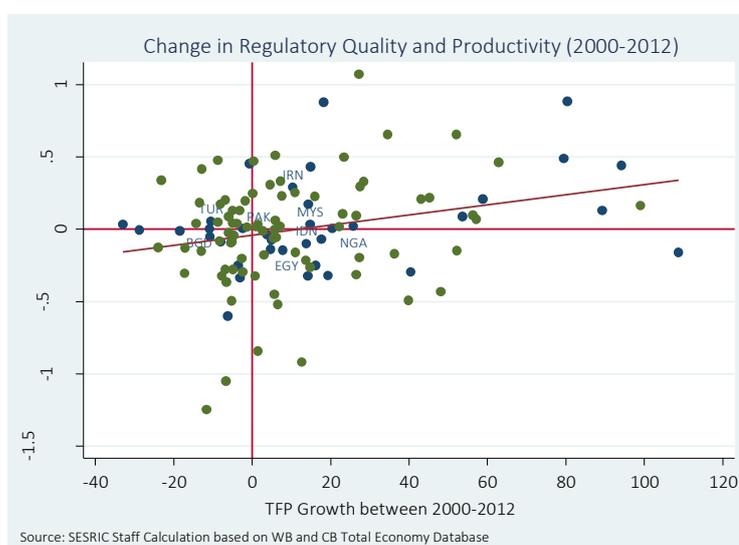
The positive association between improvement in institutional quality and productivity growth can be observed in the past performance of countries. Positive

**Figure 4.11**  
 Estimates of Rule of Law and Regulatory Quality (2015)



Source: World Bank Governance Indicators.

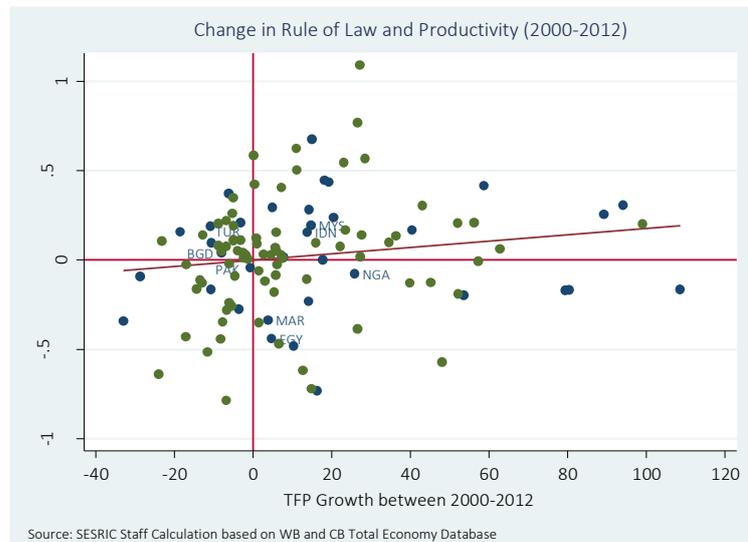
**Figure 4.12**  
 Regulatory Quality and TFP Growth



Source: SESRIC Staff Calculation based on WB and CB Total Economy Database

change in regulatory quality between 2000 and 2012 is associated with higher productivity growth during the same period (Figure 4.12). Similarly, countries that improved their rule of law experienced higher productivity growth during this period (Figure 4.13). Even though these associations are not particularly strong, on average, countries that upgraded their institutional capacities during the period under consideration showed better performance in achieving higher total factor productivity growth.

**Figure 4.13**  
 Rule of Law and TFP Growth



#### 4.2.2 Infrastructure development

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 important 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.

In addition to its direct contribution to production process and GDP, infrastructure investment can increase total factor productivity by reducing cost of doing business and allowing effective use of resources. Empirical literature also generally suggests positive impact of infrastructure investment on productivity and growth (Romp and de Haan, 2005). Development of rural infrastructure allows rural communities and small businesses to engage in income-generating activities. Firms in operating in environment with underdeveloped infrastructure have to bear the burden of higher costs arising from their efforts to overcome infrastructural challenges. Such firms will suffer significant inefficiencies and will not be able to compete in global markets.

Well-developed and properly working infrastructure can also increase economic integration at regional and global level. Easy and cost-effective access to regional markets will enable firms to benefit from globalization through trade and investment. It will also increase the exposure of firms to foreign competition and force them to become more productive, and thus more competitive. All these will require efficient and well-functioning national and cross-border physical infrastructure.

Infrastructure can broadly be defined as various physical structures used by different economic sectors as inputs to the production of goods and services. They require substantial investments and

operate in markets with high barriers to entry. They are generally long-term physical assets available for public and can be grouped under social infrastructure and economic infrastructure. Social infrastructure includes assets that accommodate social services, such as schools, universities, hospitals and other community facilities. Economic infrastructure is to support economic activities through network utilities, such as energy, transport, communications and water. In order to increase efficiency and create an environment conducive to productivity growth, interconnection and complementarities across different infrastructure sectors needs to be ensured. This report will focus on economic infrastructure.

Infrastructure can also be classified according to its importance as functional, strategic and critical infrastructure (WEF, 2012) (Figure 4.14). If infrastructure works properly and satisfies the common needs, it is considered as functional, such as electricity grids and motorways. It becomes non-functional when interdependencies come into play and one infrastructure affects the functionality of another one, such as rebuilding a road linked to an airport making the airport non-functional. A functional infrastructure investment is considered as strategic if it creates the greatest impact in terms of economic growth, social progress and sustainability. A strategic infrastructure investment is considered as critical if it is essential to support the country's socioeconomic development. Critical or strategic importance of an infrastructure projects depends on the country's level of development and developmental objectives.

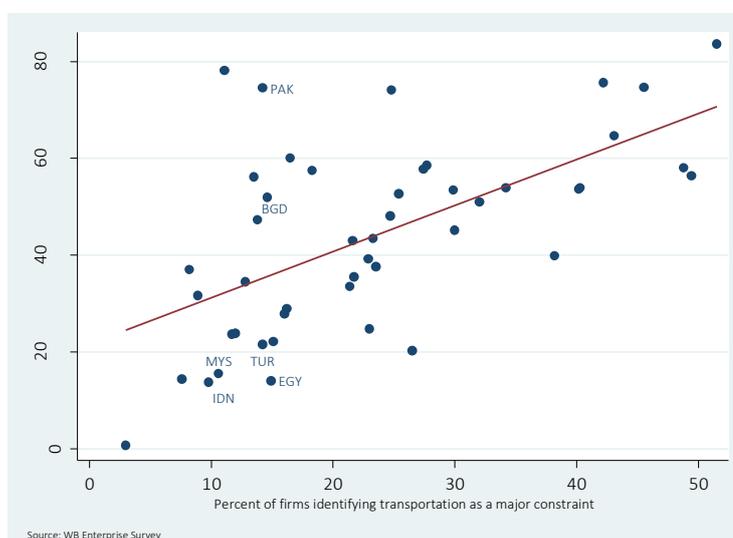
Productivity growth is higher in countries with an adequate supply of infrastructure services (Calderón and Servén, 2004). Infrastructure therefore plays a critical role in boosting a country's competitiveness and in reducing the cost of doing business. However, in many countries, enterprises are facing more than one infrastructural challenge. According to the World Bank Enterprises Survey, almost 75% of enterprises in Pakistan identified access to electricity as a major constraint for their businesses (Figure 4.15). In Bangladesh, it reaches over 50% of all enterprises, but it is a constraint for less than 20%

Figure 4.14  
 Classification of Infrastructure



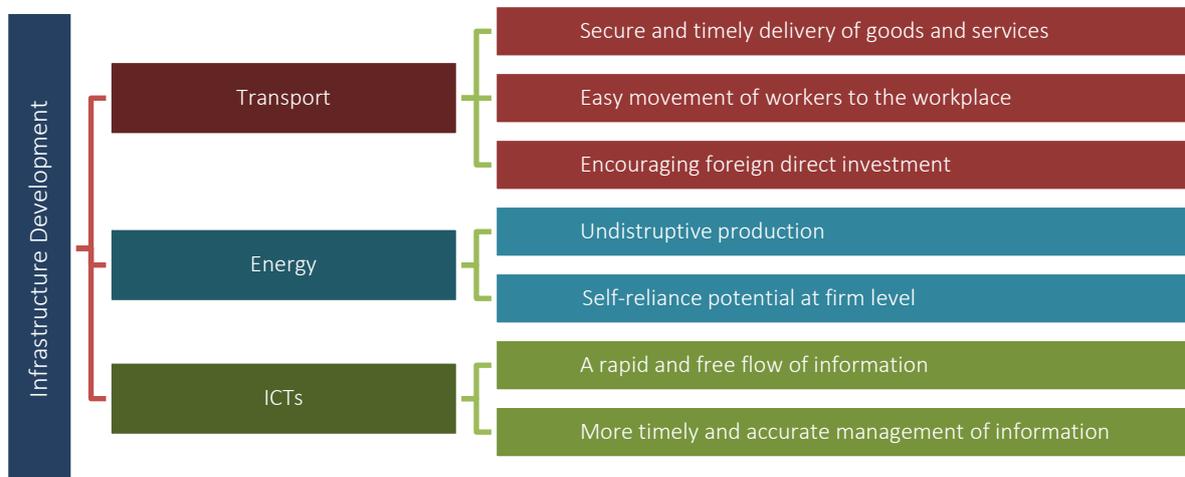
Source: WEF (2012).

Figure 4.15  
 Infrastructure Development as a Constraint



Source: WB Enterprise Survey

**Figure 4.16**  
Critical Components of Infrastructure Development



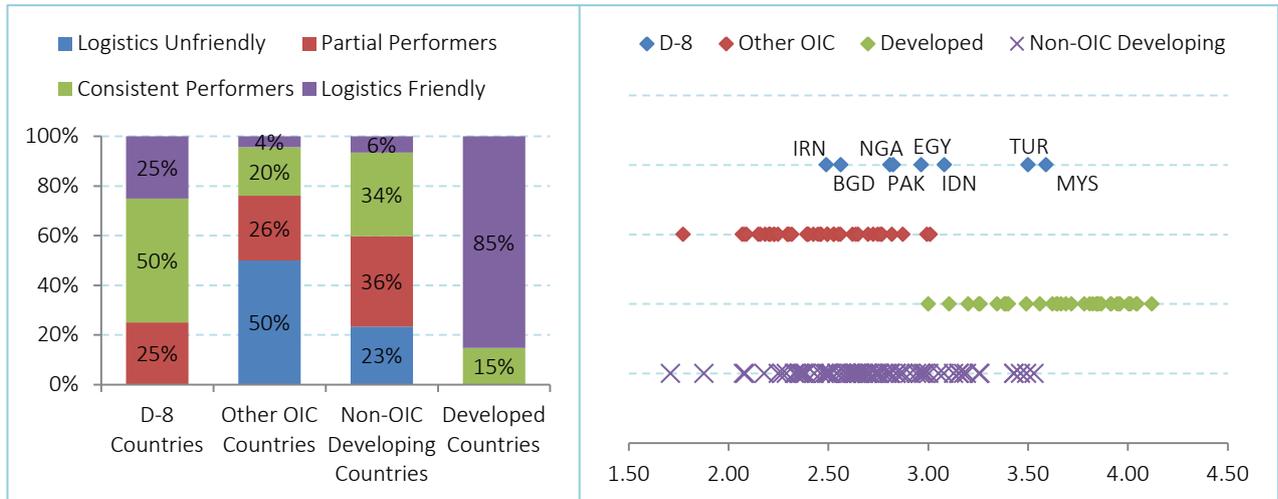
of the enterprises in Malaysia, Turkey, Indonesia and Egypt. More optimistically, 10% to 20% of enterprises in 7 D-8 countries identified transport infrastructure as major constraints for their businesses.

A major challenge in infrastructure development is financing large infrastructure projects, particularly in low-income developing countries. Sometimes governments will need to be innovative in finding alternative financing mechanisms for such projects. Private sector participation in infrastructure investments becomes crucial in such settings. In this context, private companies are increasingly given infrastructure projects by different contract types, varying according to the necessities of the particular project and country. Recent achievements of Turkey are noteworthy. Turkey is effectively using the potential of private sector in realizing large scale infrastructure investments. It enjoyed an exceptional year in 2015, with financial closings on seven projects totalling US\$44.7 billion, or 40% of global investment through public-private partnership models. Turkey is also investing a lot for transformation in health, education and energy sectors by the help of these models.

In what follows, critical components of economic infrastructure will be analysed. That will include transport, energy and communication. Figure 4.16 shows the critical features of these components for business development.

**Transport:** Sufficient and well-connected transport infrastructure is an essential component in boosting productivity and competitiveness. Roads, railways, air transport and sea ports are all needed to be well-functioning for effective production, distribution and marketing network. Trading companies not fulfilling their commitments for delivery due to poor transport infrastructure will lose their competitiveness vis-à-vis their rivals.

Figure 4.17  
 Logistics Performance Index, 2014

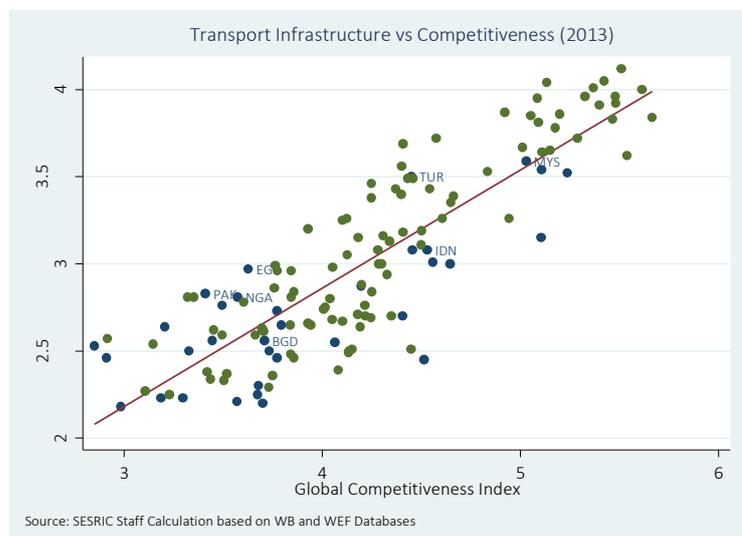


Source: World Bank WDI.

In order to evaluate the overall performance of transportation sector in D-8 countries, Logistics Performance Index (LPI) of the World Bank is used. The index measures the performance of a country along its logistics supply chain and provides qualitative evaluations of that country. According to this index, as of 2014, two D-8 countries had poor logistics performance with score below 2.47 (Figure 4.17, left panel). While half of the other OIC countries had unfriendly logistics network, none of the D-8 countries were classified under this category. Two D-8 countries received a score corresponding to a friendly logistics network. Malaysia (3.59) and Iran (2.49) were the two D-8 member countries with the highest and lowest logistics performance index values, respectively (Figure 4.17, right panel). In contrast, 85% of the developed countries are considered to be logistics friendly with scores above 3.34. There is also very strong relationship between transport infrastructure and global competitiveness level. Countries that offer better infrastructure for logistics attain better positions in global competitiveness rankings (Figure 4.18).

The modest transport development figures in various transport modes indicate that transportation infrastructure in the D-8 countries is not quite competent and the transportation system as a whole does not offers optimum connectivity, which is an essential ingredient of higher productivity and competitiveness. Underinvestment in transport infrastructure results in higher transport and trade costs in D-8 countries than experienced by other developing countries. This poses fundamental limitation to

Figure 4.18  
 Transport Infrastructure and Competitiveness



Source: SESRIC Staff Calculation based on WB and WEF Databases

global competitiveness and economic growth of D-8 countries. Therefore, more efforts should be made to develop rural roads to provide economic opportunities and access to markets and improve urban roads with a focus on better cross-border connections. Similarly, railway networks, air connectivity and port capacities should be developed to promote trade and competitiveness.

**Energy:** A reliable energy infrastructure is required for undisrupted production. Intermittent power cuts in industrial areas will damage the production processes and undermine competitiveness. Every investor needs a reliable source of energy for them to plan and organize their production and delivery. It is well known that strong economic growth will increase the demand for energy, particularly in developing economies. However, in order for infrastructure to support economic growth, it needs to be well aligned with the country's economic, social and environmental priorities. For this reason, developing with energy-efficient technologies is particularly important for energy importing countries.

**Figure 4.19**  
 Energy Production by Source (top) and Consumption (bottom)



Source: World Bank WDI.

Energy may come from three sources: fossil fuels, renewable energy and nuclear power. Fossil fuels – coal, petroleum and natural gas – are the remains of decomposition of plants and animals which forms in finite supply. Renewable energy can be generated from the natural sources such as wind, rain and sunlight. Nuclear power is, on the other hand, obtained through fission and fusion reactions to generate energy from uranium. While some D-8 countries are rich in fossil fuels, the others have huge potential in renewable energy production.

Although most of the energy demand is met by fossil fuels, combustion of fossil fuels has negative impacts on planet such as acid precipitation, stratospheric ozone depletion, and, as a result, global climate change. To overcome these issues, safe energy policies have to be implemented. Renewable energy sources appear to be the most efficient option compared to the others. It could also be generated by individual firms to meet their energy requirements and reduce the dependence to external sources as well as the cost of access to energy. However, installation and operating costs of some renewable energy facilities can be high for enterprises in some countries due to lack of technologies and also lack of policies, strategies and regulations that support investments in renewable energy infrastructure.

Electricity consumption and production in D-8 countries are constantly increasing (Figure 4.19). However, it is difficult to say whether these increases at aggregate level were enough to promote industrial development and productivity growth at individual country level. Average per capita electricity consumption in D-8 countries (1031 kWh) is well below the averages of other OIC countries (2072 kWh) and non-OIC developing countries (2202 kWh).

Another important insight from Figure 4.19 is the source of electricity production. Electricity generation from renewable sources accounts almost 30% of all electricity production in Pakistan and Turkey, but the share of fossil fuels is over 90% in Bangladesh, Egypt, Iran and Malaysia. Moreover, only Pakistan and Iran have some capacity to generate electricity from nuclear sources. Developed and non-OIC developing countries are investing more on renewable energy sources and producing larger shares of electricity from such sources. It is around 20% in developed countries and 25% in non-OIC developing countries. D-8 countries need to promote generation of electricity from renewable energy sources through effective support programs and legislations. It will also facilitate electricity production at enterprise level and remove a major constraint for them due to intermittent blackouts harming their competitiveness.

**Information and Communication Technologies (ICTs):** Information and communication technologies (ICTs) generally refer to technologies that are used to process information and facilitate communication. These include computers, internet, telephone, radio or any other hardware, software and media used for transmission and presentation of information. Development of good quality ICT infrastructure network will have direct impact on the level of development and productivity by creating an enabling environment. It will also support competitiveness by reducing communication costs.

The economic literature shows that ICTs are an important driver of productivity and growth. However, countries, industries and enterprises continue to show vast differences in the intensity of ICT use and in their capability to reap the productivity gains from ICTs. Among the major factors affecting the gain and performance from ICTs across countries include direct cost of using ICTs and associated networks, ability of firms to absorb new technology and information, and regulatory and

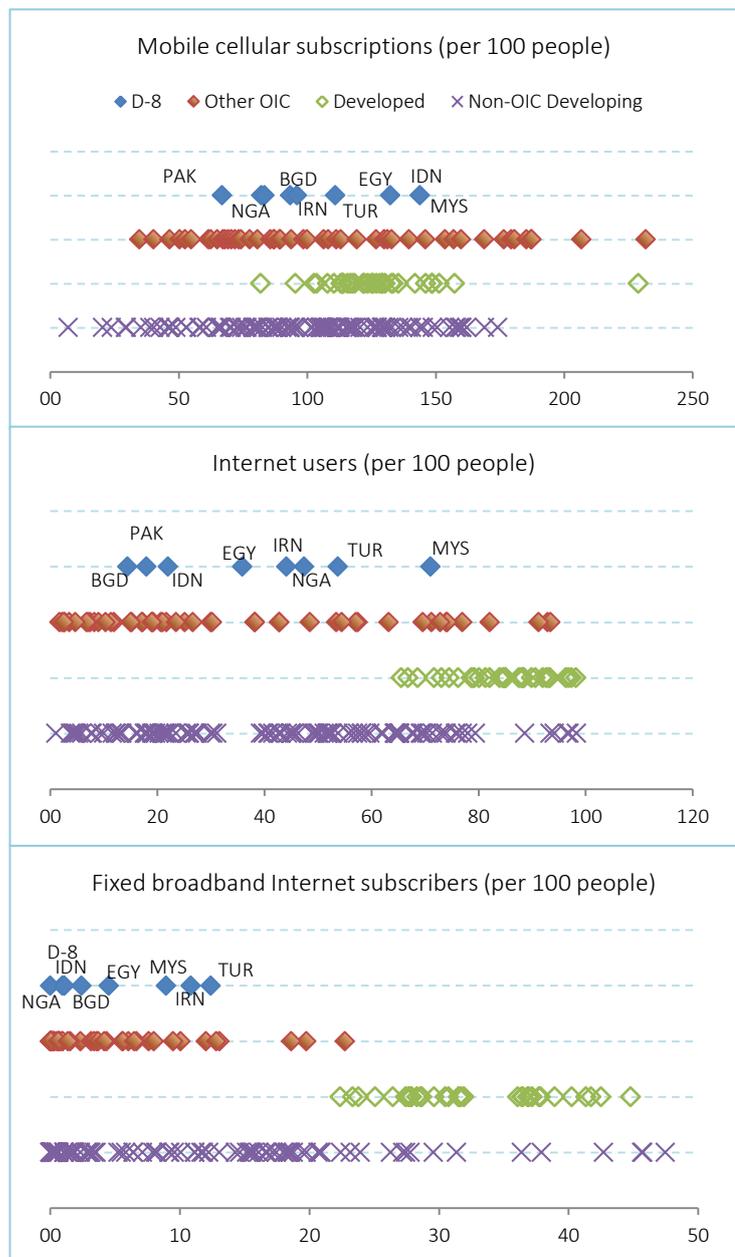
competition environment. Benefiting from ICTs requires substantial complementary investments, particularly in learning and human capital development. Policies aiming at increasing competition, lowering barriers to trade and investment and increasing labour market flexibility would also help countries to use ICTs more effectively. Then, return to ICT investment will increase and the diffusion of ICT will encourage reorganisation of production and service delivery methods with higher productivity and emergence of competitive enterprises.

ICTs will continue to reduce the costs of collecting, storing, processing, analysing and transferring information for firms. This provides an opportunity to firms to complete the tasks more quickly, effectively and cheaply. Firms with better entrepreneurial capability can use ICTs to develop and introduce innovative products, services and organizational structures.

Among the potential impacts of increased ICT use include increased human capital, greater consistency of product quality and well as quality improvement, more timely and accurate management of information, development of customized products and services, outsourcing of certain functions, greater responsiveness to customer needs and more certainty in new product design and improved communication and reporting system (Productivity Commission, 2004). All these will facilitate productivity growth and increased competitiveness.

In order to evaluate the level of current use of ICTs in D-8 countries, mobile cellular and internet use statistics are provided in Figure 4.20. With respect to mobile cellular subscriptions, D-8 countries are performing fairly well. Some D-8 countries show even better performance than many developed countries. In terms of internet use, the number of internet users per 100 people does not reach 25 in three D-8 countries. 71% of people in Malaysia, 54% in Turkey have

**Figure 4.20**  
 ICT Use in D-8 Countries (2015)



Source: World Bank WDI.

internet access as of 2015. When it comes to fixed broadband internet subscription, the current stance of D-8 and other OIC countries shows a gloomy picture. The penetration rate in best performing D-8 country (Turkey, 12.4%) is well below the lowest rate in developed countries (Cyprus, 22.4%). In Nigeria, there is no broadband infrastructure and it is only 1% Pakistan and 1.1% in Indonesia. Therefore, more investments in high speed fixed (wired) access to internet is needed in D-8 countries.

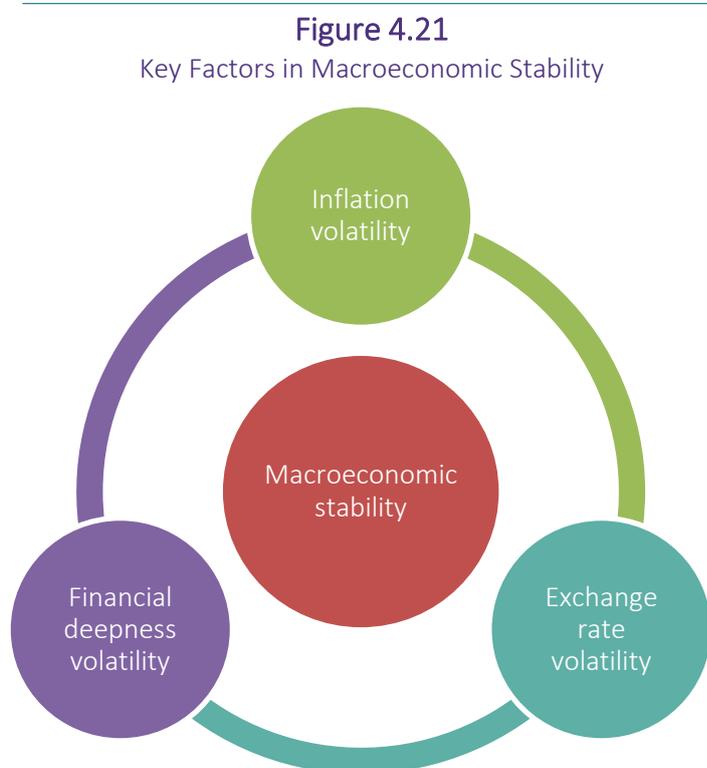
#### 4.2.3 Macroeconomic stability

An important element in the policy mix of boosting productivity and competitiveness is the need to maintain macroeconomic stability, since this would create a business environment free of uncertainty and unanticipated costs. A stable macroeconomic environment would entail lower volatility in inflation rate, interest rate, exchange rate and a low fiscal deficit as a percentage of GDP. It would also require less volatility in terms of the size of economic transactions with the rest of the world. In other words, low and predictable inflation rate, an appropriate real interest rate, and competitive and predictable real exchange rate are important elements of macroeconomic stability. There are other factors related to macroeconomic stability including a viable situation in balance of payments, unemployment rates and fiscal balance, but for the purpose of this report, the focus will be limited to inflation volatility, openness and exchange rate volatility, and financial volatility.

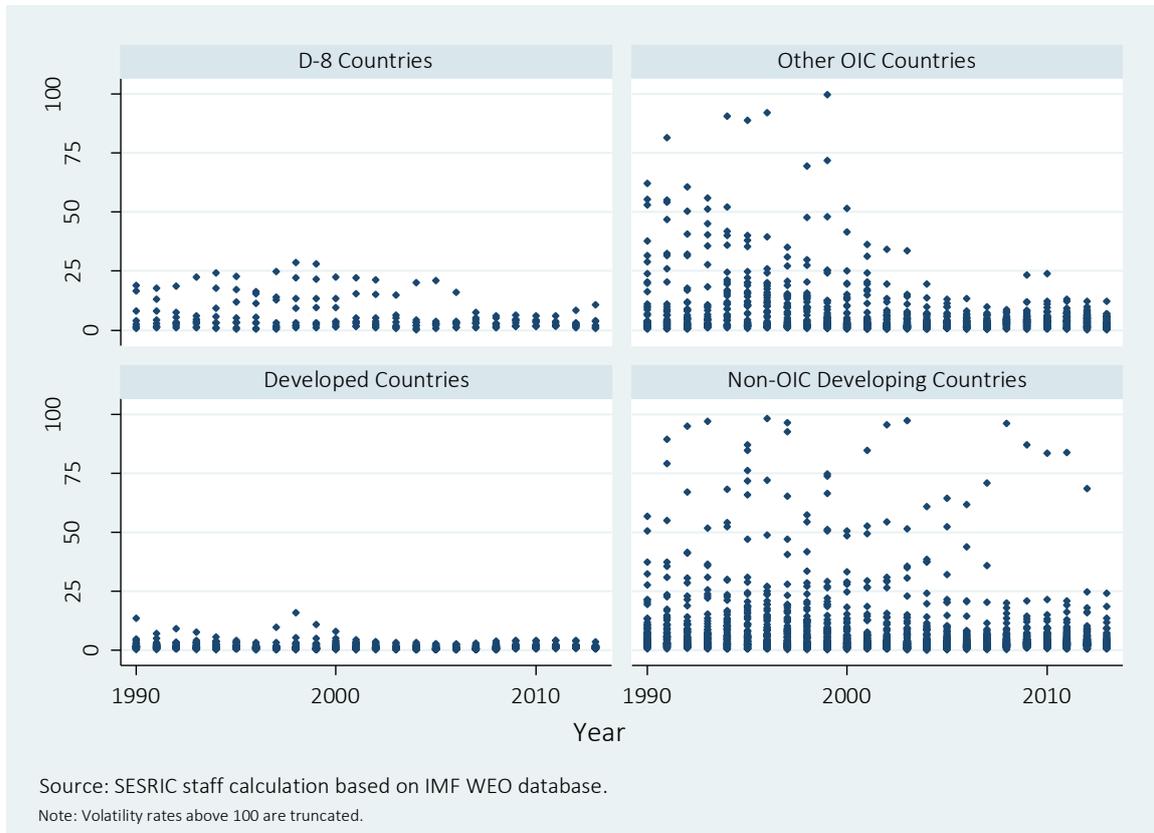
##### Inflation volatility

It is argued that inflation volatility adversely affects an effective allocation of resources, as it is not possible for firms to know the future prices and wages (Fischer, 1993). High volatility of inflation

raises price level uncertainty and this uncertainty induces risk premia for long-term arrangements, raises costs for hedging against inflation risks and leads to unanticipated redistribution of wealth. Thus, inflation volatility can impede growth even if inflation on average remains restrained (Rother, 2004). In an environment where it is not easy to foresee the relative prices of inputs and outputs, it will also not easy to plan the production. By hampering the efficiency of the price system in effectively allocating resources, unanticipated changes in inflation will lead to production and growth below the real potential and higher unemployment rates due to possible impacts on the labour market.



**Figure 4.22**  
 Inflation Volatility (5-year Overlapping Averages, 1990-2013)



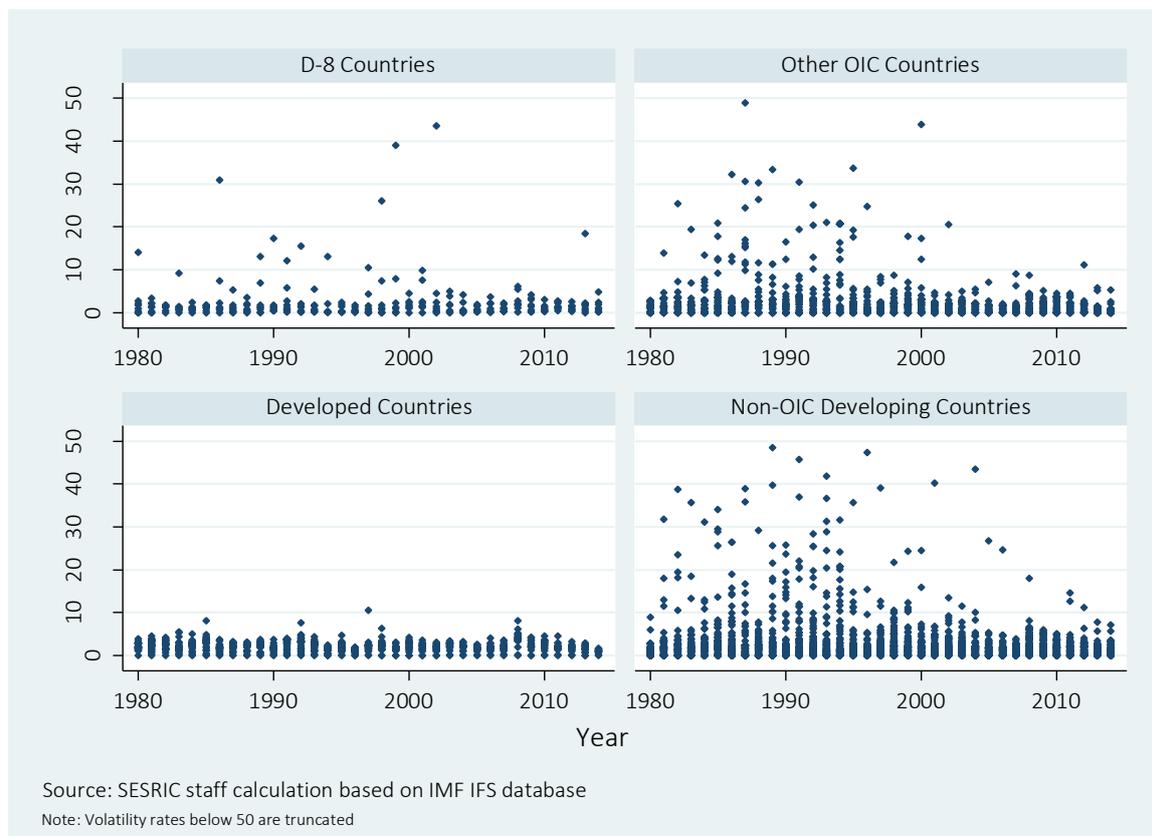
Inflation volatility is measured as standard deviations of five-year windows of year-on-year inflation, as used by IMF and depicted in Figure 4.22. Particularly after 2000, inflation volatility in D-8 countries appears to be relatively small compared to other OIC and developing countries, but still higher than the volatility in developed countries.

#### Exchange rate volatility

Real exchange rate is broadly used to compare the evolution of purchasing power across currencies. By construction, comparison of exchange rates across countries will show *changes* over time, not the *level* of prices. In other words, we can examine whether the price level in one country changed compared to another country during a period of time, but we cannot observe whether the levels of exchange rate adjusted prices are higher in one country compared to the other. Productivity growth or large capital flows may account for the change in real exchange rates. For example, it is common for resource-rich countries to experience rapid rises in real exchange rates that hamper competitiveness in other industries (the so-called *Dutch disease*). Aid flows can also lead to appreciation of local currency in low-income countries, raising demand for domestic products and making export industries less competitive.

It is beyond the scope of this report to discuss the policy choices on exchange rate regimes for competitiveness. However, large fluctuations in exchange rates, whatever the reasons, may signal weakness and imbalances in macroeconomic situation of a country. Higher volatility may discourage firms from acquiring or seeking to acquire more efficient foreign technologies and

Figure 4.23  
 Exchange Rate Volatility (1980-2013)



continue with less sophisticated domestically available technologies. Firms will refrain from more productive production processes that involve reliance on the imported materials due to price uncertainty. All these will reduce productivity growth. If exporting turns to a risky business, it will lead to a reallocation of resources towards safer activities with potentially lower return and productivity (see Rodrick, 1998, for a macroeconomic model of such scenario).

In order to evaluate the current situation, exchange rate volatility in OIC countries is measured against US dollar (USD) as  $\sigma_i = std[d(\log(s_i))]$ , where  $s_i$  is the nominal exchange rate of country  $i$  against USD. Explicitly, volatility is the standard deviation of the changes in the logarithm of bilateral exchange rates (as commonly defined in the literature, e.g., Gros and Thygesen 1998) and constructed using monthly data over January 1980 to April 2014. Figure 4.23 shows the exchange rate volatility in D-8 countries in comparison with other country groups. Volatility in developed countries is significantly lower compared to other country groups. D-8 countries appear to have less volatility in exchange rates compared to other developing countries.

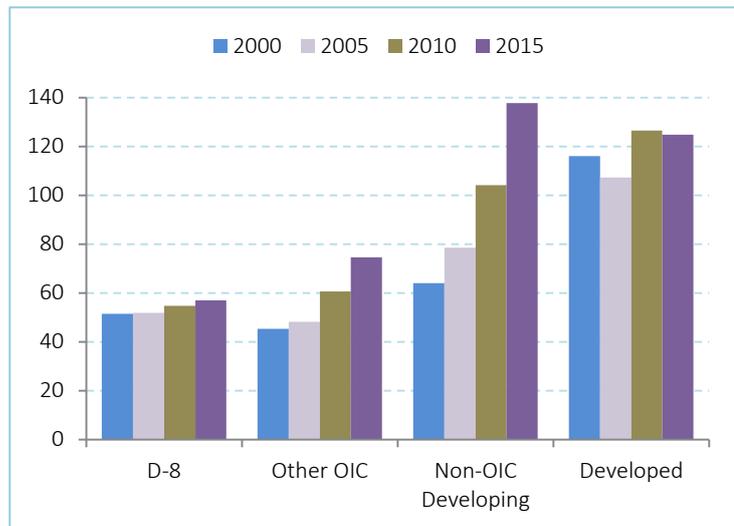
#### Financial deepness volatility

According to a report by the IMF, through an increase in financial transaction volumes, financial deepening 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). It can also lower the reliance on foreign savings and attenuate balance sheet mismatches by increasing the scope to raise funds in domestic currencies and at longer maturities (World Bank, 2011). Deeper financial markets can provide alternative sources of funding during times of international stress, limiting

adverse spill-overs, as evidenced in the recent global financial crisis. Yet, 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).

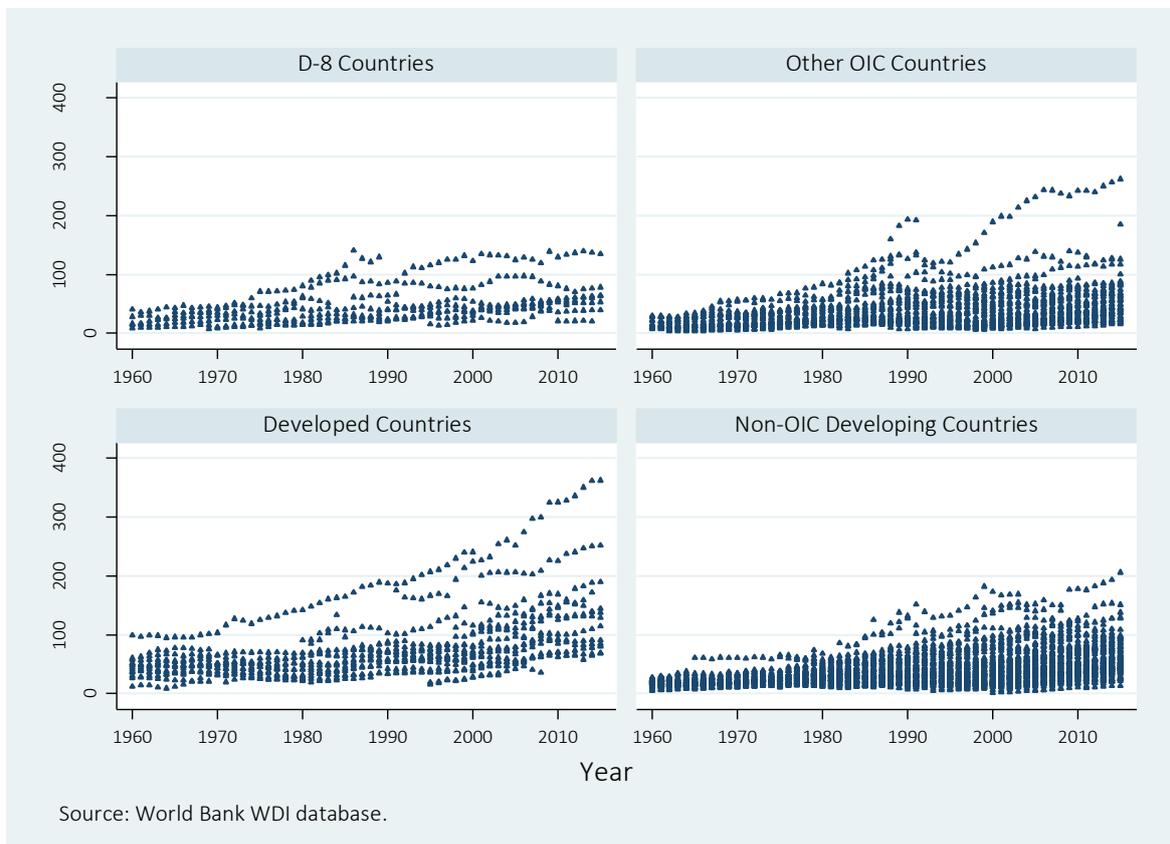
Conceptually, financial depth is often described by three dimensions: (i) sectors and agents are able to use a range of financial markets for savings and investment decisions, including at diverse maturities (access); (ii) financial intermediaries and markets are able to deploy larger amounts of capital and manage larger turnover, without

**Figure 4.24**  
 Average Volume of Broad Money (% of GDP)



Source: World Bank WDI.

**Figure 4.25**  
 Financial Deepness (1960-2012)

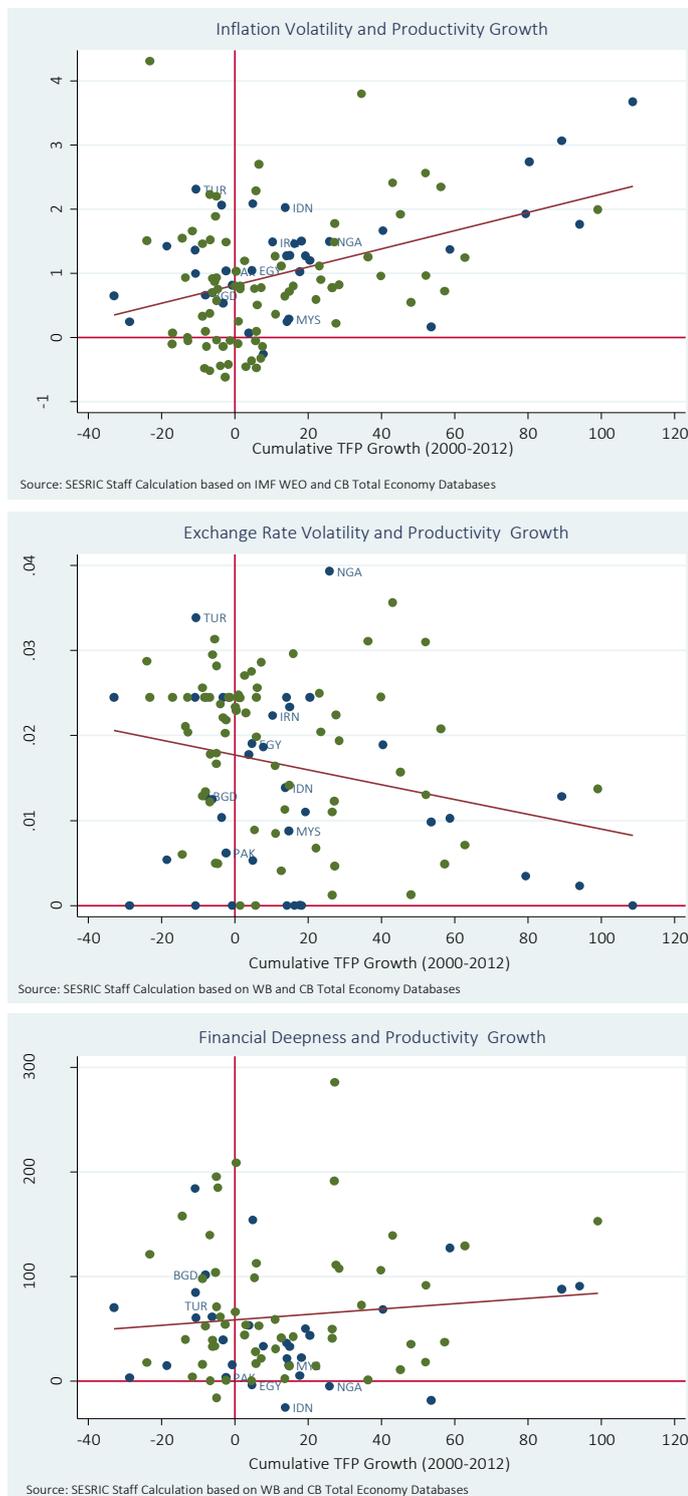


Source: World Bank WDI database.

necessitating large corresponding movements in asset prices (liquidity); and (iii) the financial sector can create a broad spectrum of assets for risk-sharing purposes (hedging or diversification). A commonly used metric for determining the degree of financial deepening is the ratio of broad money<sup>2</sup> to GDP. A higher ratio is generally associated with greater financial liquidity and depth. As shown in Figure 4.24, the average volume of broad money relative to the GDP of D-8 countries has been recorded at 57% in 2015, as compared to 74.7% in other OIC countries, 137.8% in non-OIC developing countries and 124.9 in developed countries. In a long-term perspective, Figure 4.25 also shows the value of individual countries for four country groups over the period of 1960-2012. This situation clearly indicates that the financial sector in the D-8 countries is lagging behind their counterparts in other developing as well as developed countries in terms of the provision of sufficient liquidity and better investment opportunities to the economy at a lower cost.

Taking into account the widely accepted view that the financial deepening confers important stability benefits to the economy, albeit with caveats, D-8 countries are apparently deprived of these stability benefits. Another important aspect of the financial depth is its volatility. Higher volatility in the financial system may discourage financial intermediaries from giving long-term loans even if project evaluations on the profitability are positive. This will

Figure 4.26  
 Macroeconomic Stability and TFP Growth



<sup>2</sup> The IMF defines broad money as the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper.

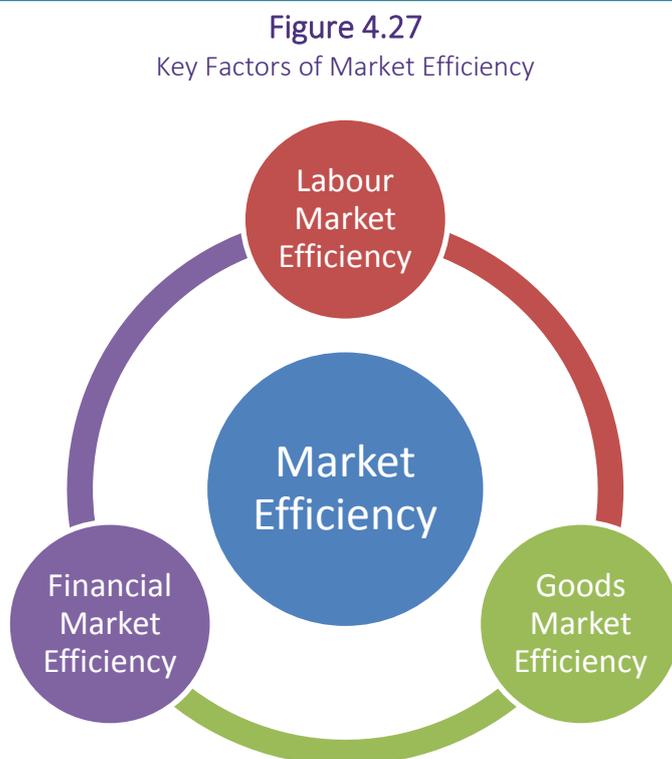
lead to less efficient allocation of resources and lower productivity growth, with implications on overall competitiveness.

When it comes to the impact of macroeconomic stability indicators on productivity growth, a somewhat mixed outcome is observed. Upper panel of Figure 4.26 shows a negative relationship between stability and productivity growth, where countries with higher inflation volatility during 2000-2012 experienced higher productivity growth rates. Middle panel of the figure, on the other hand, shows a positive relationship with stability and productivity growth, where countries with lower exchange rate volatility tended to experience better total factor productivity improvements. Finally, countries that increased their financial deepness have also experienced positive impact on their productivity growth performance (Figure 4.26, lower panel).

Overall, it is fair to argue that macroeconomic stability is critical for attracting more investment, attaining greater economic efficiency and a better allocation of capital. Predictability and clarity in fiscal and monetary policies will bring better performance in terms of productivity growth and competitiveness.

#### 4.2.4 Market efficiency

An efficient market is critical for ensuring the optimum allocation of resources based on supply and demand conditions in the market. There are three main areas where efficiency is sought: labour market, goods market and financial market (Figure 4.27). An efficient labour market should ensure that the skill mismatch is at minimum level in the market. In other words, the skills and capabilities offered by the labour force should match to a large extent with the skills and capabilities needed by enterprises. Moreover, an efficient labour market should ensure that the available labour force is used in most effective way.



In the case of goods market efficiency, the right mix of goods and services should be produced and effectively traded in the market. Healthy market competition is important in driving market efficiency and business productivity. The most efficient firms in such markets are those that produce goods demanded by the market (WEF, 2013). Burdensome taxes, restrictive and discriminatory rules on investment, size of informal sector, rules and procedures on business start-up and licensing as well as promotion of competition are critical factors in ensuring goods market efficiency.

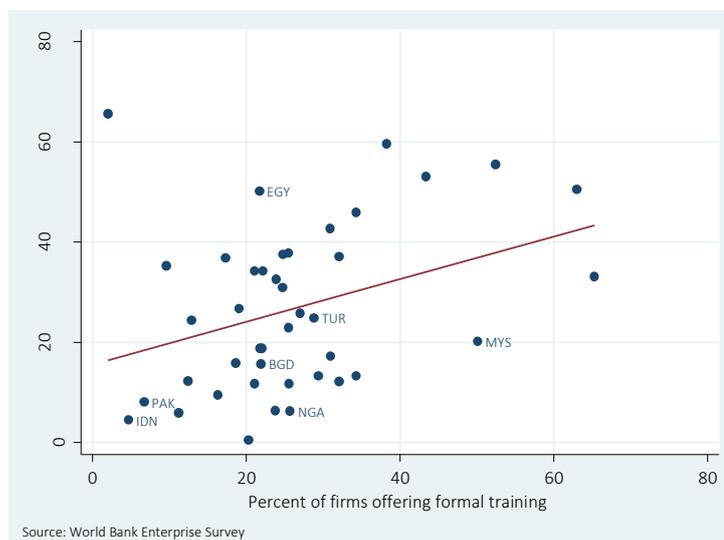
Another aspect of market efficiency is financial market efficiency. The degrees of financial stability and efficiency are important features of the financial sector development. They are closely interlinked with the broader process of financial development. On the other hand, to perform its functions well, a financial sector should be efficient and able to perform its intermediating functions in the least costly way possible. If intermediation is costly, the higher costs may get passed on to households, firms, and governments. An efficient financial market will ensure allocation of resources to most productive business opportunities; thereby increase overall productivity and competitiveness of an economy.

**Labour market efficiency:** An efficient labour market is important in allocating human capital to its most productive uses. Particularly in developing countries, ability of the market to reallocate labour between sectors (or from old sectors to newer more productive sectors) is critical in growth process. Moving timely out of agriculture into manufacturing and then into services sector has long been thought to have significant impact on growth rates. The level of labour market efficiency depends on the speed by which the labour market reallocates labour from low productive to new more productive sectors (Burgess and Mawson, 2003). It is also argued that by reducing the time workers spend in unemployed or sub-optimal jobs, an increase in labour market efficiency raises the value of workers' human capital investments and leads them to invest in more education (Laing et. al, 1995). These two channels, reallocation from old to new technologies and creation of incentives to invest more on human capital, make labour market efficiency a critical driver for higher growth.

A flexible labour market, on the other hand, facilitates the adjustment to new economic conditions after any shocks that may arise. For example, during a recession, the job market may adapt to new conditions by reducing real wages in order to keep employment. Pessoa and Reenen (2013) analysed the response of the UK labour market to the recent global financial crisis and they found that the flexibility in UK labour market kept the people employed but reduced their wages due to their lower bargaining power. However, this flexibility resulted in lower productivity levels due to lower investment in capital and higher investment in labour. Successful adaption to growing economy is as important as to adjusting to a shrinking economy. In a growing economy, firms will invest more in new technologies and labour force needs to quickly obtain new skills required to utilize these technologies.

Efficiency and flexibility of labour market are closely linked to each other. Efficiency leads to an allocation of human capital to its most productive uses during regular times and flexibility leads to rapid market clearing during irregular times through various channels. On the other hand, labour market frictions may inhibit aggregate growth.

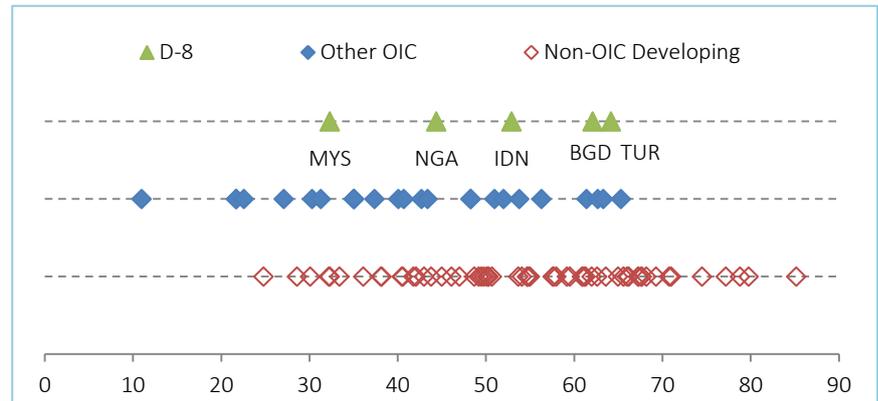
Figure 4.28  
Workforce as a Constraint



Skills level of labour force is generally classified according to specific level of education they attained. As the share of labour force with secondary and tertiary education increases, the ability to adopt new skills and absorb new knowledge increases. This in turn increases their flexibility in the labour market. As shown in Figure 4.28 for D-8 and other OIC countries, while significant number of firms identify inadequately educated workforce as a major constraint in some countries (vertical axis), firms tend to offer formal training to increase the quality of labour force (horizontal axis). This is important in the sense that firms take initiatives to improve the human productivity through various on-the-job-training (OTJT) modules. On the other hand, total share of workers offered formal training in D-8 countries is ranges between 30% and 70%, which is pretty much close to the patterns observed in other country groups (Figure 4.29).

Figure 4.29

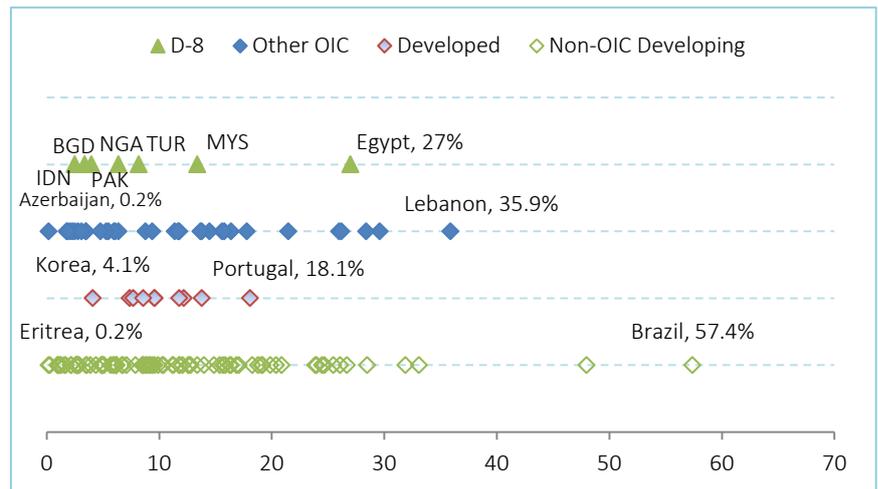
Proportion of workers offered formal training



Source: World Bank Enterprise Survey.

Figure 4.30

Proportion of firms identifying labour regulations as a major constraint



Source: World Bank Enterprise Survey.

Labour regulations handle the relationship between workers, employers, trade unions and the government. Effective laws and regulations promote the efficiency of the labour market. Figure 4.30 shows the percentage of firms identifying labour regulations as a major constraint according to the World Bank Enterprise Survey. In general, D-8 countries perform fairly better compared to other countries. D-8 countries except Egypt and Malaysia appear to have less restrictive labour regulations compared to the world average of 11.8%.

**Goods market efficiency:** Markets are expected to supply the right mix of products demanded. In order to avoid oversupply or undersupply of goods in the long term, an efficient market mechanism is needed. Technically, goods and services will be oversupplied if prices are above the equilibrium level and they will be undersupplied if prices are below the equilibrium level. Economic theory suggests that markets will equilibrate prices based on supply and demand for goods and services; however adjustment may take time if market does not function properly. In a competitive

environment, firms seeing profitable business opportunities will enter the market and they will accelerate the adjustment. However, if it is costly for firms to enter the market and if there are imperfections and monopolistic behaviours in the market or frequent distortionary interventions of government, adjustment can be sluggish.

Market efficiency is, therefore, commonly associated with competition, which requires control of abuse of dominant positions, prevention of collusion between firms and removal of market entry barriers (Formosa, 2008). The literature also

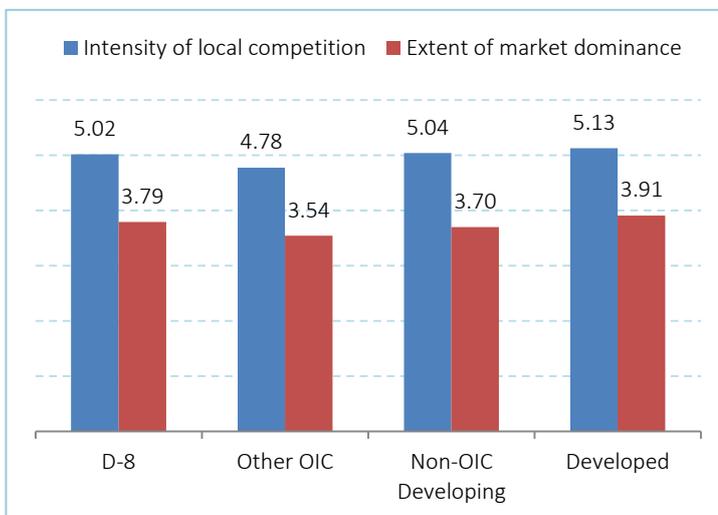
suggests that an efficient market can only exist if there are no barriers to entry for potential competitors who wish to enter the market. As is well known, freedom of entry into and exit from the industry is one of the theoretical assumptions underlying perfect competition.

It should also be noted that while distortionary government intervention may hinder market efficiency, by establishing necessary institutions, legislations and regulative framework, government can promote market efficiency. If entry into markets is not easy or too costly, informal sectors will emerge and unfair competition will have negative consequences on the efficiency of the market. Punishing abuse of dominance and preventing collusions are also critical.

Figure 4.31 shows the average scores in intensity of local competition and extent of market dominance in D-8 countries in comparison with other-OIC, non-OIC developing and developed countries. The intensity of local competition score is ranged between 1 (not intense at all) and 7 (extremely intense). On average, there is some difference with developed countries but it is rather equivalent with non-OIC developing countries. With respect to the extent of market dominance, which ranges between 1 (dominated by a few business groups) and 7 (spread among many firms), D-8 countries reveal slightly better picture compared to other developing countries, however, further efforts are needed to reduce the market dominance of few business groups in order to promote competition and productivity in OIC countries.

Burdensome procedures of doing business may encourage firms to operate in the informal sector. Such firms will negatively affect the performance of firms' operation in the formal sector. Figure 4.32 shows the percentage of firms identifying business licensing and permits as a major constraint and percentage of identifying practices of competitors in the informal sector as a major constraint. In countries where business licencing and permits are burdensome, firms are facing more competition from informal sector.

**Figure 4.31**  
 Intensity of Local Competition and Extent of Market Dominance



Source: World Economic Forum (WEF).

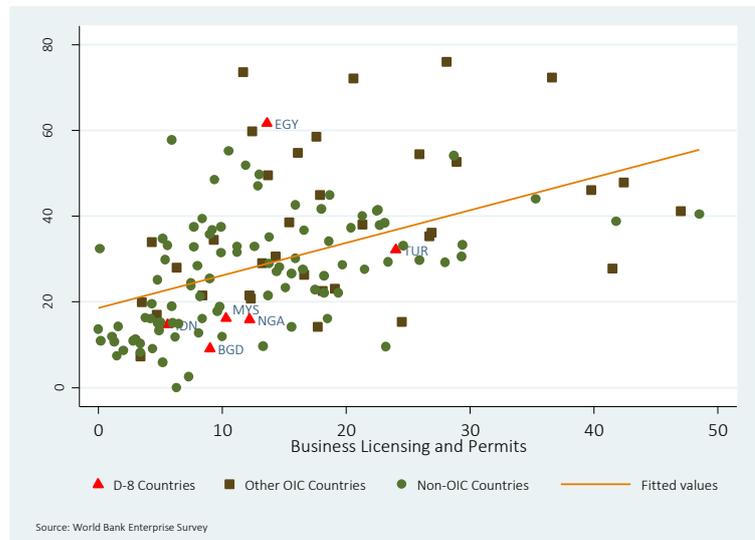
**Financial market efficiency:**

Financial services are fundamental to economic growth and development. Critical roles of financial sector are to mobilize savings for investment, to ensure that funds are allocated to the most productive use, to spread risks and to provide liquidity so that enterprises can manage the productive capacities efficiently and compete in local and international markets. Throughout this process, an efficient financial intermediation will support long-term sustainable development by

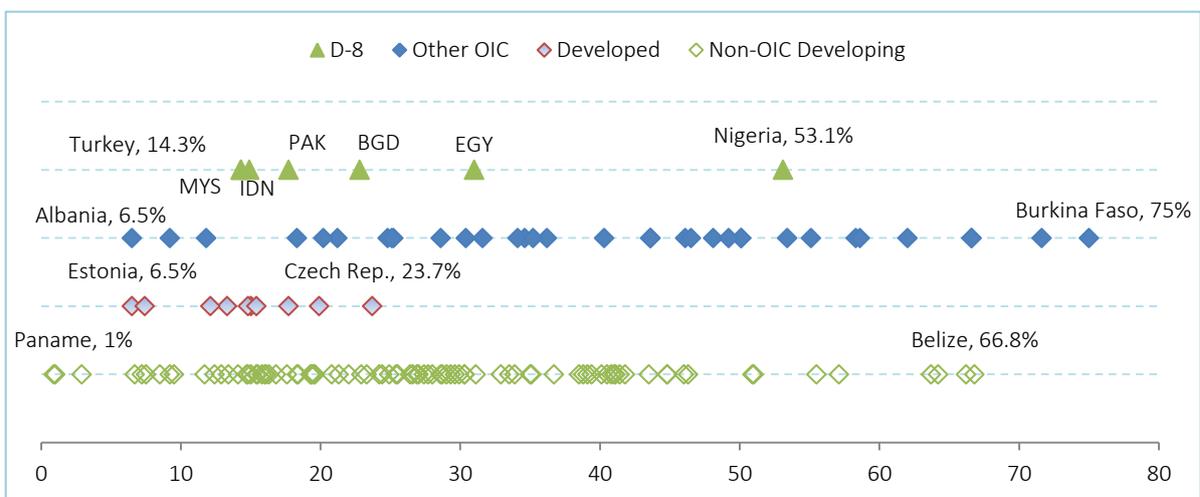
facilitating accumulation of physical and human capital, pushing for more efficient use of the resulting productive assets and ensuring the access of people to these assets.

Levine (2005) summarizes the elements of financial development in five categories. Financial development involves improvements in the (i) production of *ex ante* information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) exchange of goods and services. Each of these may influence savings and investment decisions and hence economic growth. Due to many market frictions and different rules, regulations and policies across economies and over time, improvements along any single dimension may have different implications for resource allocation and welfare depending on the other frictions at play in the economy.

**Figure 4.32**  
 Business Licensing and Competition with Informal Sector



**Figure 4.33**  
 Access to Finance as a Constraint



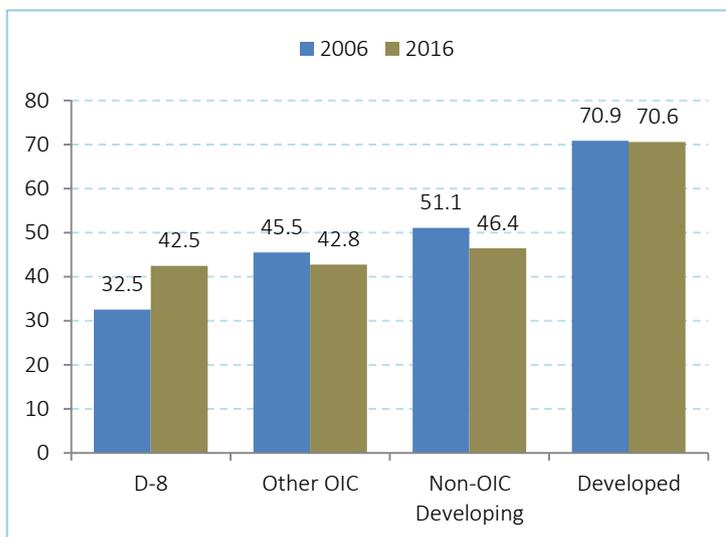
Financial sector is a critical constituent of an economy. The performance of the rest of the economy will depend on how the financial sector performs. As painfully experienced just recently, a crisis in financial markets plunged economies into recession around the globe. Therefore, its relation with real economy is particularly critical. In order to ensure efficient functioning of financial sector, development of the sector should be reinforced by establishing and expanding institutions, instruments and markets that support investment and growth process as desired.

An efficient financial market is required to allocate resources to their most productive uses. For an efficient allocation of resources, prices should reflect all information available and transaction costs should be realistic. If informational and operational efficiency conditions are met, resources will be directed to the places where they will be the most productive and effective.

The level, efficiency and composition of financial intermediation are generally regarded as three basic characteristics of financial systems in capturing the above-mentioned five functions on economic growth (Fitzgerald, 2006). According to the World Bank Enterprise Survey, percentage of firms identifying access to finance as a major constraint is relatively low in D-8 countries (Figure 4.33). While around 14% of firms in Turkey, Malaysia and Indonesia identify the practices of competitors in the informal sectors as a major constraint, it reaches up to 53% in Nigeria. Given 29.7% of the world average, firms in five D-8 countries identify access to finance as a constraint below the world average. Nevertheless, if significant numbers of firms are still struggling in access to finance, the financial sector needs to be further developed for higher efficiency.

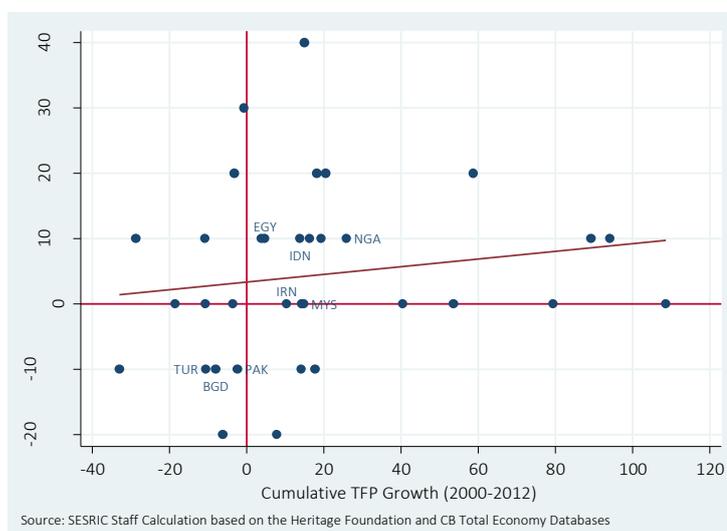
In assessing the level of financial market efficiency, financial freedom index and interest rate spread will be used. Financial freedom index, developed by the Heritage Foundation, is a measure of banking efficiency as well as a measure of

Figure 4.34  
 Financial Freedom Index



Source: Heritage Foundation.

Figure 4.35  
 Financial Freedom and Productivity Growth



Source: SESRIC Staff Calculation based on the Heritage Foundation and CB Total Economy Databases

independence from government control and interference in the financial sector. It is argued that state ownership of banks and other financial institutions reduces competition and generally lowers the level of available services. The financial freedom index scores an economy's financial freedom by looking into (i) the extent of government regulation of financial services, (ii) the degree of state intervention in banks and other financial firms through direct or indirect ownership, (iii) the extent of financial and capital market development, (iv) government influence on the allocation of credit and (v) openness to foreign competition. D-8 countries as a group have the lowest financial freedom, but it is the only country group that could improve the financial freedom over the last decade, which helped to reduce the gap with other country groups (Figure 4.34). Financial freedom in non-OIC developing countries fell sharpest and it has hardly changed over the last decade in developed countries. The D-8 countries that increased their financial freedom also experienced on average higher productivity growth rates during the period 2000-2012 (Figure 4.35).

### 4.3 Identification of Productive Capacities for Competitiveness

The previous two subsections discussed the fundamentals for enhancing productivity and competitiveness and factors that boost multifactor productivity. Another important dimension of enhancing productivity and competitiveness is the process of identification of productive capacities. If investments are made in sectors that are to become more competitive and more strategic for the development of an economy, then critical achievements can be made in enhancing overall productivity and competitiveness in medium and long term.

Even though countries can assess their capacities based on the available resources, technological progress and investment in human resources can create new opportunities in wide ranging areas for higher competitiveness and productivity. These opportunities can be realized through successful discovery processes. An important process of identification is economic diversification, where countries try to position their most competitive advantages through investing in a large variety of fields. Another important factor in identification is the entrepreneurial activities. Diversification can only take place if there are enough entrepreneurs who can take risks to explore new profitable business opportunities. Below these two critical components of identification processes are discussed.

#### 4.3.1 Economic diversification

Specialization is a dynamic process and its effect on productivity depends on the circumstances in which industries operate. That is, similar specialization pattern may give rise to different productivity and growth rates at different points in time. In general, countries may benefit from specialization due to its impact on economies of scale or from diversification due to its impact on technology spillover and discovery of productive and competitive sources. The literature suggests that anything that pushes the economy to specialize in good(s) with higher productivity levels sets forth a dynamic (if temporary) process of economic growth (Hausmann et al. 2007). Therefore, the type of goods in which a country specializes has direct implications for the economic performance of that country. Export of goods with higher productivity potentials bring about higher growth rates

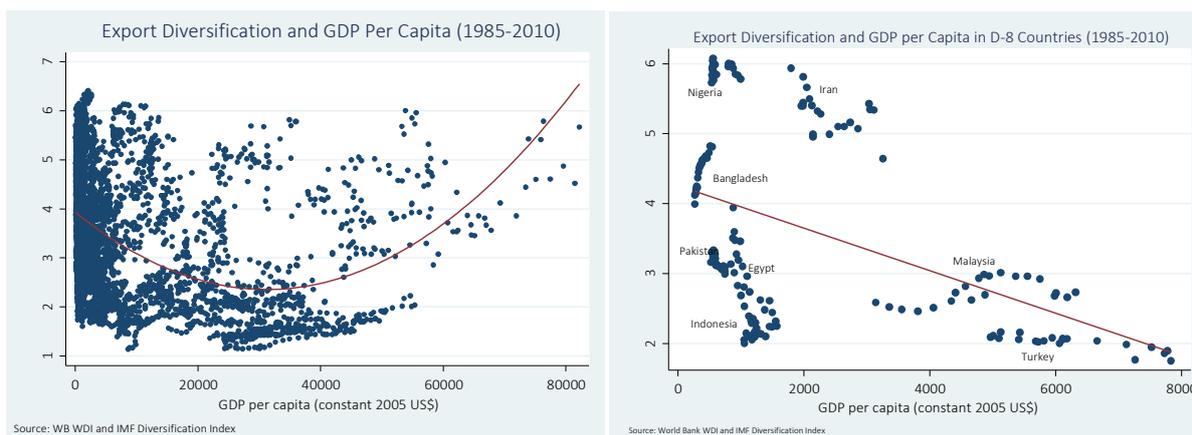
and this is achieved by transferring resources from low-productivity to the higher-productivity activities by the entrepreneurial cost-discovery process.<sup>3</sup>

Many developing countries, particularly low income countries, are characterized by high concentration of export and limited diversification of domestic economy. While lack of diversification in export increases the exposure of countries to adverse shocks and macroeconomic instability, high concentration of economic activity in sectors with limited potential for productivity growth may not bring about much growth and development to the country. While striving for higher diversity, identifying sectors and product categories that are conducive for technology spillover, productivity growth and better competitiveness is particularly challenging.

Recent literature suggests that change of sectoral concentration in relation to the level of per capita income shows a U-shaped pattern (Imbs and Wacziarg, 2003). This nonlinear relationship between export diversification and economic development indicates that countries diversify their export structure as they grow and at some level of income they start specializing again. The relationship is evident in Figure 4.37 (left), which plots global sample of country-year observations over the period of 1985-2010.<sup>4</sup> Therefore, early stages of development are associated with structural transformation. In the case of D-8 countries, the relationship between higher income levels and diversification appears to be more robust (Figure 4.37, right). Evidence also suggests that economic development ultimately involves this transformation with dynamic reallocation of resources from less productive to more productive sectors and activities. High concentration of low income countries in agriculture and resource-based activities will inevitably require diversification in domestic production and external trade.

Export diversification can be achieved across products or trading partners. When it occurs at product level, it can involve introduction of new product lines or a more balanced mix and higher

**Figure 4.37**  
Export Diversification and Per Capita Income (1985-2010)

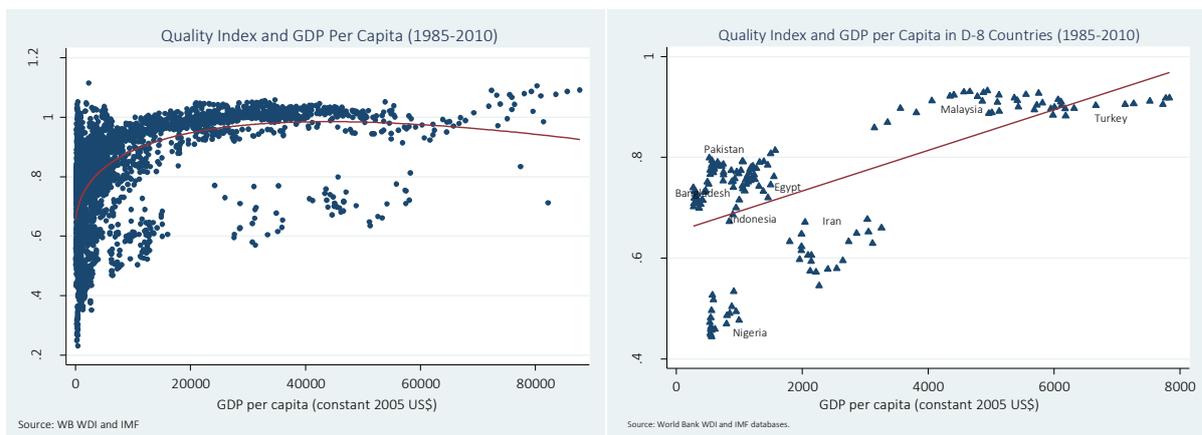


<sup>3</sup> It is also conjectured that differences in observed TFP are driven by differences in the institutions and government policies they collectively refer to as 'social infrastructure' (Hall and Jones, 1999). Better social infrastructure eases the process of cost discoveries, which in turn increases the overall productivity.

<sup>4</sup> IMF (2014) provides data on export diversification based on the Theil Index, which measures the extent of diversification across a country's exports. Lower values indicate higher diversification.

quality of existing product lines.<sup>5</sup> Producing higher quality varieties of existing products can build on existing comparative advantages. It can boost export revenue potential of countries through the use of more physical- and human-capital intensive production techniques. However, agricultural and natural resources tend to have lower potential for quality upgrading than manufactures. Countries at early stages of development with small economic size and limited potential to exploit economies of scale may, therefore, find it difficult to move into new products, making quality upgrading within existing products the more important (IMF, 2014).

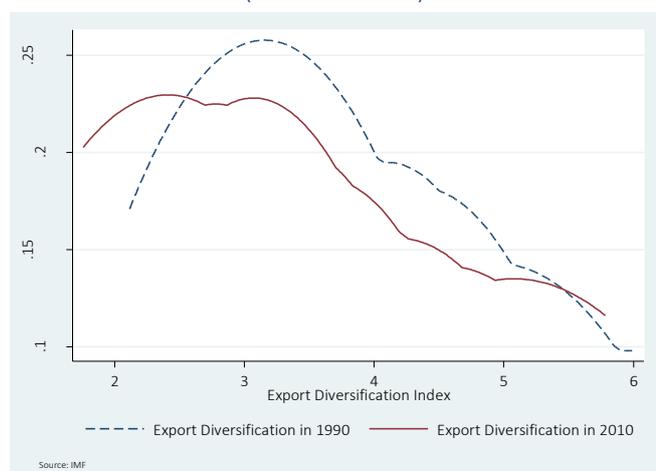
**Figure 4.38**  
 Export Quality and Per Capita Income



Quality upgrading is particularly strong during the early stages of development. However, wide variation in quality upgrading experiences across countries suggests a strong association between income growth and quality upgrading (Figure 4.38, left). As countries grow, their prospects for quality upgrading will slow down and quality convergence to the world frontier will be largely completed as countries reach upper middle income status. This is also evidenced in the case of D-8 countries (Figure 4.38, right). This suggests that low income countries can gain considerably from quality upgrading. This entails once again diversification across and within products.

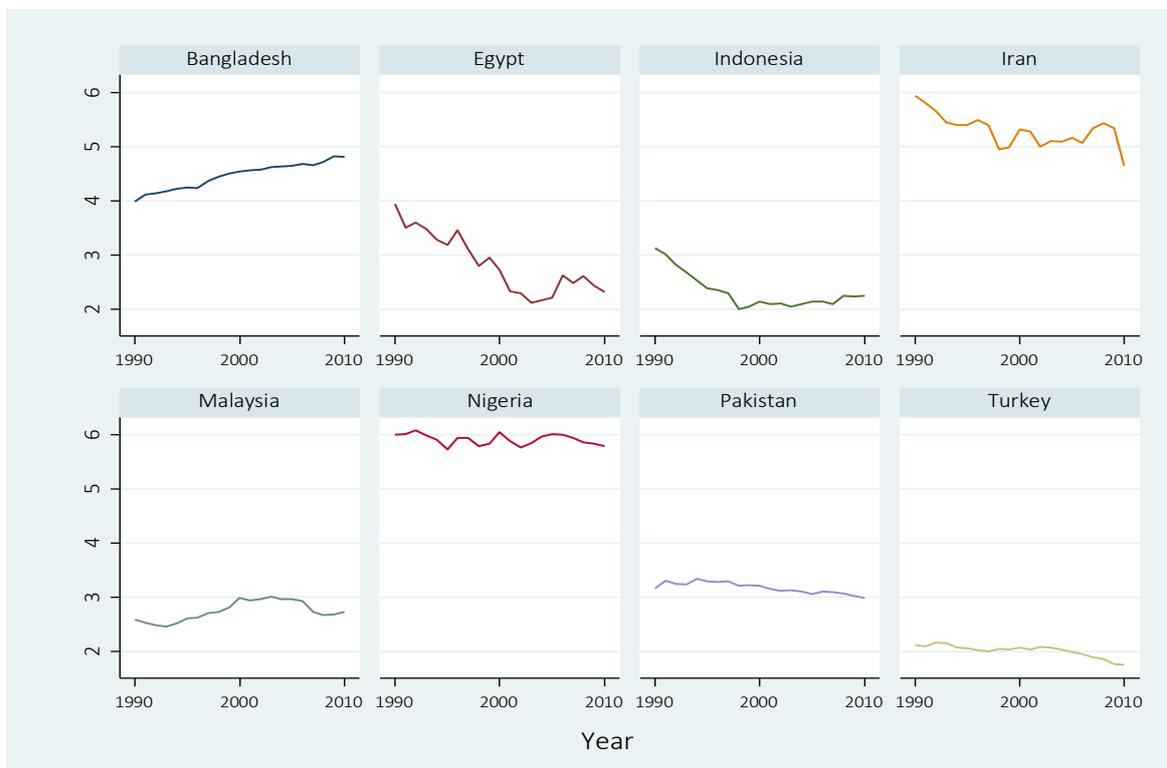
When the overall and individual diversification performance of D-8 countries is analysed, several interesting observations can be made. Figure 4.39 compares the level of diversification in D-8 countries in 2010 with the level in 1990.

**Figure 4.39**  
 Export Diversification in D-8 Countries  
 (1990 vs. 2010)



<sup>5</sup> When diversifying their export structure, a rather challenging task for countries is whether to diversify at both industry and product level or diversify at only product level while specializing at industry level. The recent evidence suggests that the importance of within-goods specialization increases in characterizing the current patterns of trade. By using US trade data, Schott (2004) provides the first empirical evidence on the nature of trade within and across industries.

**Figure 4.40**  
 Export Diversification Patterns in D-8 Countries



As it is evident, D-8 countries became more diversified over the years and distribution of countries leaned towards lower values of index values, indicating higher diversification. At individual country level, different patterns of diversification are observed among the D-8 countries (Figure 4.40). While some countries made significant progress in increasing their level of diversification, including Egypt, Indonesia, Iran and Turkey, some others could not significantly increase the diversification level or even became more specialized in their export structure, including Bangladesh, Malaysia and Nigeria. While the most diversified economy is Turkey, the most specialized one is Nigeria.

Another important aspect of evaluating potential competitiveness in export products is the comparative advantage of countries in particular products and sectors. Different economic theories suggest that technology differences and cost differences due to differences in factor prices across countries lead some countries to be more advantageous compared to others. In order to evaluate the diversification process of OIC countries, the measure of the revealed comparative advantage (RCA) will be used. The revealed comparative advantage of a nation is measured by the relative weight of a percentage of total export of commodity's in a nation over the percentage of world export in that commodity, as suggested by Balassa (1965). More specifically,  $RCA = \frac{x_{ij}/x_{wt}}{x_{it}/x_{wt}}$ , where  $i$  indicates county,  $j$  indicates commodity or sector,  $t$  indicates total export and  $w$  indicates the world. When  $RCA > 1$ , it means that country  $i$  has a revealed comparative advantage on commodity  $j$ . When  $RCA < 1$ , it means that country  $i$  has a revealed comparative disadvantage on commodity  $j$ .

Table 4.2 provides the data on the number of (two-digit) sectors where D-8 countries have comparative advantage vis-à-vis other countries. In general, D-8 countries tend to have comparative advantage in food products, crude materials and manufactured goods (Codes 0, 1, 2,

**Table 4.2**  
Comparative Advantage in D-8 Countries (Total number in each sector)

Code	Description	1995		2005		2012	
0-1	Food and beverages	17	19.3%	21	23.1%	25	22.1%
2	Crude materials, inedible, except fuels	18	20.5%	15	16.5%	16	14.2%
3	Mineral fuels, lubricants and related materials	7	8.0%	8	8.8%	8	7.1%
4	Animal and vegetable oils, fats and waxes	6	6.8%	7	7.7%	7	6.2%
5	Chemicals and related products	7	8.0%	4	4.4%	10	8.8%
6	Manufactured goods classified chiefly by materials	15	17.0%	18	19.8%	24	21.2%
7	Machinery and transport equipment	3	3.4%	4	4.4%	4	3.5%
8	Miscellaneous manufactured articles	11	12.5%	11	12.1%	14	12.4%
9	Commodities and transactions not classified	4	4.5%	3	3.3%	5	4.4%
<b>TOTAL</b>	<b>All Commodities</b>	<b>88</b>	<b>100%</b>	<b>91</b>	<b>100%</b>	<b>113</b>	<b>100%</b>

Source: SESRIC Staff Calculation based on UN Comtrade Database.

6), accounting up to 60% of all sectors in which they have comparative advantage. An upward trend can be observed in the number of sectors where D-8 countries have comparative advantage under manufacturing industries (Code 6), but a declining trend is observed in the crude materials sectors (Code 2). This indicates that D-8 countries are increasingly gaining comparative advantages across different sectors and products of manufacturing industries.

This is a particularly strong outcome of increasing diversification observed in D-8 countries. However, further efforts should be made to achieve more competitiveness in sectors and products of manufacturing industries. Overall, discovering productive advantage requires significant diversification. Successful discoveries will not only increase overall productivity levels but also number of products in which to have comparative advantage.

High-tech industries are usually the area of specialization of leading industrialized countries and low-skill industries are the area of concentration of the least developed countries. As they progress, developing countries usually diversify their production and export structure in order to attain higher economic growth. Successful diversifiers reap the benefits in terms of better economic performance and faster development. The countries that cannot diversify and are taken captive by limited infertile industries (those specialize in primary commodities) will not be able to jump to the era of higher economic growth.<sup>6</sup> Therefore, as a policy outcome, recommending least developing countries to specialize in what they currently doing best may not necessarily help them to achieve long run sustainable growth.<sup>7</sup>

#### 4.3.2 Entrepreneurship

It is widely believed that entrepreneurship is beneficial for economic growth and development. Entrepreneurship has been also remarkably critical in developing countries that achieved substantial poverty reduction (Naudé, 2013). Scholarly thinking about entrepreneurship have taken

<sup>6</sup> The question is that should the countries producing coffee-beans be the best coffee beans producer and ignore the other industries. The answer should not be that difficult, but what usually recommended to such countries is generally the opposite (see, e.g., Stockey, 1988).

<sup>7</sup> For instance, though no one would regard India, a low-income developing country, to have comparative advantage in technology intensive industries, the country showed remarkable success in information technology sector.

different forms, but a synthesis definition has been offered by Gries and Naudé (2011) that combines different views to define entrepreneurship as “the resource, process and state of being through and in which individuals utilize positive opportunities in the market by creating and growing new business firms.”

Schumpeter (1950; 1961) famously defined the entrepreneur as the coordinator of production and agent of change. Scholars who share this view of entrepreneurship see the contribution of entrepreneurship to be much more important at later stages of development, where economic growth is driven by knowledge and competition. At earlier stages of development, entrepreneurship may play a less pronounced role because growth is largely driven by factor accumulation (Ács and Naudé, 2013).

Technically, entrepreneurs create a positive externality through bringing new goods and new technology to the market. Hausmann and Rodrik (2003) emphasize the role of entrepreneur in discovering new products when there is uncertainty about what a country is good at producing. Entrepreneurial cost discovery process, as suggested by Hausman and Rodrik, involves making sunk costs in a new activity to identify the profitability of the activity, which is *ex ante* unknown but it will later provide information to other entrepreneurs on the profitability of a specific entrepreneurial activity. However, there is a lack of clear empirical evidence of whether entrepreneurship drives economic growth and productivity.

In order to further elaborate on why entrepreneurship is important in identifying productive capacities, the importance of discoveries of new productive sectors against the existing comparative advantage needs to be further highlighted. Three important arguments cited in Hausmann and Rodrik are the followings:

- i. There is much randomness in the process of discovering what one can be good at. More likely, existing patterns of specialization are the consequence of historical accidents and serendipitous choices by entrepreneurs.
- ii. For most economies, industrial success entails concentration in a relatively narrow range of high-productivity activities. However, the specific product lines that eventually prove to be the most productive are typically highly uncertain and unpredictable.
- iii. Enterprises may not be able to predict if, when, how, and at what cost they would learn enough to become fully competitive, even when the technology is well known and mature elsewhere.<sup>8</sup>

The empirical literature also finds a U-shaped relationship between entrepreneurship and a country’s level of economic development, as measured by GDP per capita (Naudé, 2010), implying a higher rate of entrepreneurial activity in low-income countries than in middle-income countries. This result may reflect that entrepreneurs in developing countries are less innovative and tend to be proportionately more ‘necessity’ motivated (Ács et al., 2008). Higher levels of GDP may therefore be associated with more ‘innovative’ forms of entrepreneurship. Studies find that

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<sup>8</sup> As noted by Acemoglu and Zilibotti (2001), “many technologies used by the LDCs are developed in the OECD economies and are designed to make optimal use of the skills of these richer countries’ workforces. Differences in the supply of skills create a mismatch between the requirements of these technologies and the skills of LDC workers, and lead to low productivity in the LDCs. Even when all countries have equal access to new technologies, this technology- skill mismatch can lead to sizable differences in total factor productivity and output per worker.”

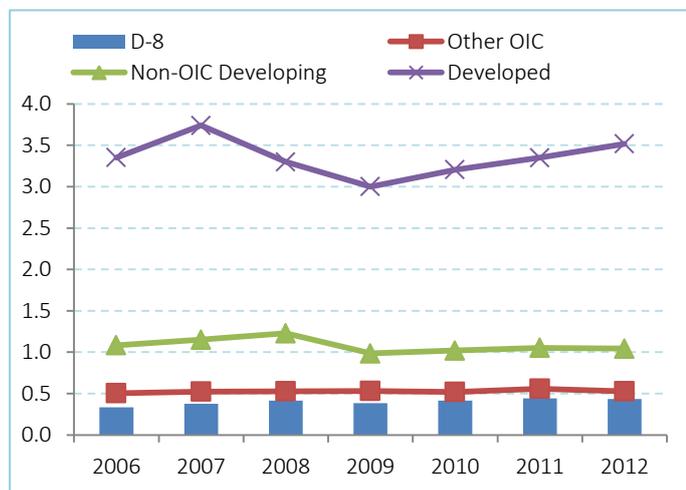
innovative firms, particularly in high-tech sectors, have on average higher levels of productivity, tend to do enjoy higher employment growth, and cause positive spillovers for other firms (Stam and Wennberg 2009).

In order to assess the level of entrepreneurial activity in D-8 countries, the Entrepreneurship Database of the World Bank is used. It is a critical source of data that facilitates the measurement of entrepreneurial activity across countries and over time. Data from 139 economies on the number of newly registered firms per year over the period 2004-2012 can help show the relationship between the level of cost, time, and procedures required to start a business and new firm registration. Figure 4.41 shows the weighted average of newly registered firms per 1,000 working-age adults during 2006-2012. Entrepreneurial activity in D-8 countries is clearly lagging behind developed as well as other OIC and non-OIC developing countries. During 2006-2012, the weighted average increased only from 0.33 to 0.44 in D-8 countries, while this number reached 3.5 in developed countries, 1.04 in non-OIC developing and 0.53 in other OIC countries. However, the gap between D-8 and non-OIC developing countries decreased from 0.75 in 2006 to 0.6 in 2012.

There are important constraints in promoting entrepreneurial activity, which include among others time and procedures required to start a business as well as investor protection. According to the World Bank Doing Business database, time and

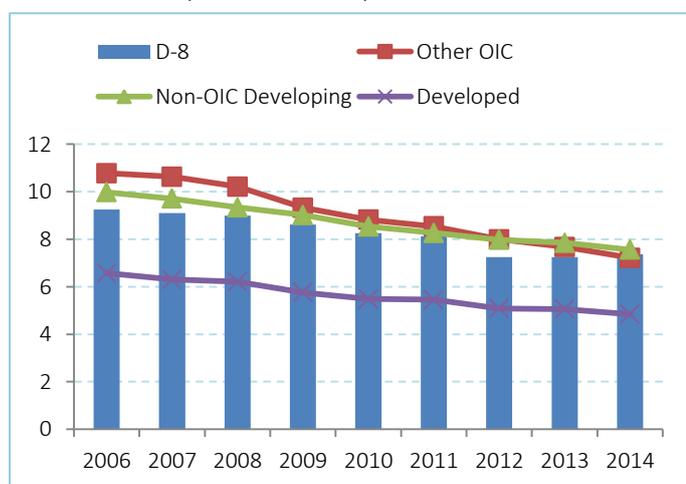
procedures required to start a business is constantly falling since 2006 all around the world. On average, D-8 countries were performing better than other OIC and non-OIC developing countries in 2006, but other OIC countries narrowed the gap and even attained a better score. So, the progress achieved by other country groups during 2006-2014 was better than the achievements made by D-8 countries (Figure 4.42). D-8 countries on average require 7.4 procedures, while it only 4.8 in developed countries, 7.2 in other OIC countries and 7.6 in non-OIC developing countries in 2014.

**Figure 4.41**  
 Establishment of New Firms  
 (Per 1,000 working-age adults)



Source: World Bank.

**Figure 4.42**  
 Number of procedures required to start a business



Source: World Bank WDI.

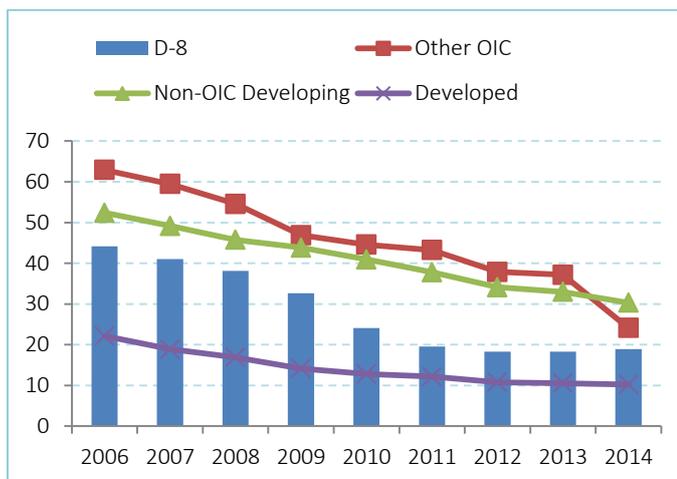
A similar trend has been observed in terms of time required to start a business (Figure 4.43). As of 2014, D-8 countries on average still require less time to start a business compared to other OIC countries, but the gap between the two groups have significantly reduced from 19 days in 2006 to 5 days in 2014. However, D-8 countries reduced the gap with developed countries from 22 days to 9 days during the same period.

Another aspect of supporting entrepreneurial activity is investor protection. Strength of investor protection index<sup>9</sup> measures the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain, which is particularly important to support risk-taking by small investors. In this context, despite continuous improvement, D-8 countries as a group perform much better than other OIC and non-OIC developing countries. As of 2014, the index value for D-8 countries reached 5.8, compared to 5.1 in other developing countries and 4.4 in other OIC countries (Figure 4.44). Therefore, in addition to favourable developments observed in time and procedures required to start a business, further efforts should be made in protecting investors as well in order to better encourage entrepreneurship.

A drawback of the ease of doing business ranking is that it can measure the regulatory performance of economies only relative to the performance of others, but does not provide information on how the absolute quality of the regulatory environment is improving over time. It also does not provide any information on how large the gaps are between economies at a single point in time. The distance to frontier measure is designed to address both shortcomings, complementing the ease of doing business ranking. This measure illustrates the distance of an economy to the “frontier,” and the change in the measure over time shows the extent to which the

Figure 4.43

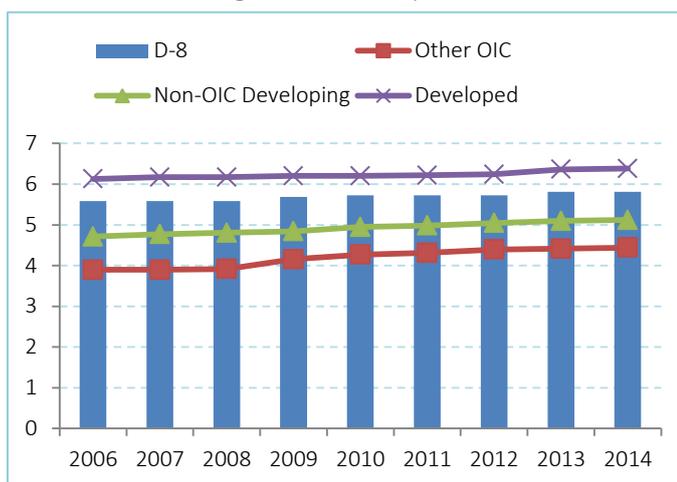
Time required to start a business



Source: World Bank WDI.

Figure 4.44

Strength of investor protection



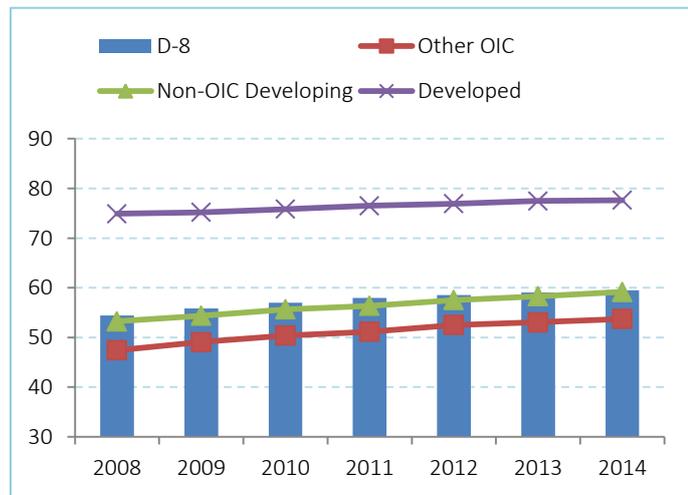
Source: World Bank WDI.

<sup>9</sup> The index provided by the World Bank ranges between 0 and 10, with higher values indicating better investor protection.

economy has closed this gap.<sup>10</sup> Accordingly, D-8 and other developing countries are moving towards closing this gap (Figure 4.45). On average, D-8 countries' distance to frontier was 54.4 in 2008, but it improved to 59.5 in 2014 and narrowed the gap with developed countries. The performance of D-8 countries continues to remain slightly stronger than the performance of other OIC and non-OIC developing countries.

As a result, encouraging entrepreneurial activity for identifying productive capacities is critical, but improving only procedures is not enough if entrepreneurs are not innovative. Innovative abilities of entrepreneurs should also be improved through investing in skills and education of entrepreneurs. It is innovative entrepreneurship that is most desirable for growth. Therefore, innovation and education policy should be a central focus of entrepreneurship promotion in D-8 countries as it is in developed economies.

**Figure 4.45**  
 Distance to frontier



Source: World Bank WDI.

<sup>10</sup> An economy's distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier.

## 5 POLICY ISSUES FOR STRUCTURAL TRANSFORMATION

Part II of this report focused on the critical issue of productivity and competitiveness in OIC countries in a comprehensive manner. It highlighted the role of these issues in economic development and wealth creation process and provided some basic statistics on the current level of productivity and competitiveness in OIC countries. Then, a comprehensive examination of key issues in fostering productivity and competitiveness is made. In the light of the analyses made throughout this part, this section provides important policy issues identified for better performance in enhancing productivity and competitiveness and achieving successful structural transformation towards higher development in D-8 countries. These issues are summarized under each category classified discussed in the report, as provided in Figure 5.1.

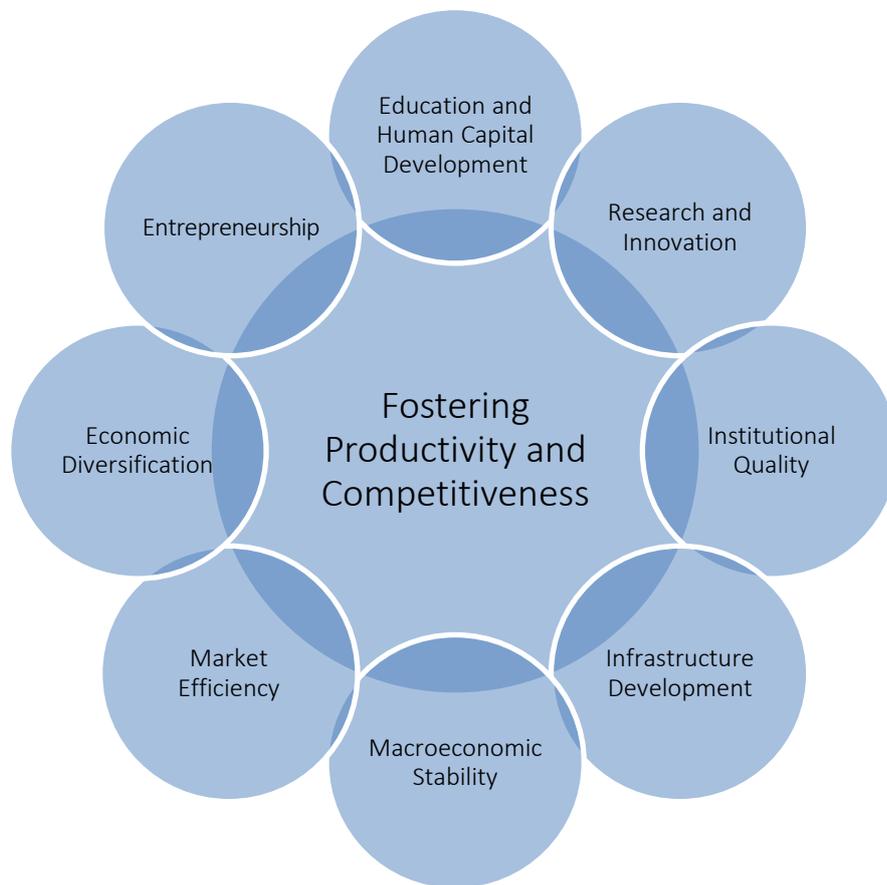
Evidence suggests that reform priorities for better productivity growth differ across countries. Low income countries are particularly in need of improved education and infrastructure, good quality economic institutions, reduced barriers for better market efficiency and effective competitiveness. Low income countries need to achieve rapid accumulation of capital, raising agricultural productivity and technology diffusion in labour intensive industries in order to maintain a dynamic growth path supported by productivity growth.

On the other hand, middle income countries need, among others, effective policies for investment promotion, quality higher education, investment on research and development, deepening of financial markets, more flexible and competitive goods and labour markets. Sectoral reallocation from agriculture to industry and services in these countries may already have taken a long way and these countries may need more efforts to increase their capacity to innovate and apply new knowledge and technologies. Middle income countries need also to achieve a greater flexibility to shift resources across sectors in order to improve productivity and competitiveness. Economic diversification, particularly in resource-rich countries, remains critical to achieve sustained growth through higher productivity and competitiveness levels. More specific policy issues are discussed below under each of the eight categories focused in this report.

### **Education and Human Capital Development**

Human capital is one of the main determinants of long-term growth. Skilled and well-educated workforce facilitates the absorption of foreign knowledge and technology from other countries through channels including international trade and foreign direct investments that smooth the

**Figure 5.1**  
Critical Factors in Fostering Productivity and Competitiveness



spill-over of this stock of knowledge and technology. But, it is the absorptive capacity that determines the level of diffusion. Investment in human capital accumulation or education has, therefore, the potential to increase the capacity to obtain and utilize the knowledge developed elsewhere. Since the D-8 countries occupy only middle or lower ranks in economic development, the issue of human capital development remains critical in widening the potentials to achieve long-term sustainable growth.

Development policy today recognizes the role of education but focuses most attention on ensuring that everybody is in school and ignoring the quality and efficiency of the learning that takes place in educational institutions. Promoting the quality of education at international and regional level is highly critical for creating better opportunities of growth and development. It is observed that despite some improvement in school attendance, there are still D-8 countries with low level of schooling. The quality of education also remains a critical concern in many D-8 countries. For effective human capital development that can lead to higher productivity and better competitiveness levels, attendance as well as quality of education at all levels (pre-primary, primary, secondary, and tertiary) and all types (vocational, formal, and evening) should be supported through effective programmes and policies.

Given the shortage of skilled workers, effective policies and programmes need to be devised and implemented for better education and training as they are critical factors for technological

readiness to raise productivity and diversify into more sophisticated products. Enhancing firm productivity, upgrading technologies, developing high-value added services and achieving more competitive status in the world economy necessitate the assurance of better educated and trained human resources that match the needs of the labour market.

### **Research and Innovation**

The performance of D-8 countries on different indicators for technology-based innovation, investments in research and development (R&D) and patents suggest that many of these countries face an innovation shortfall. In this perspective, it is evident that investments in human capital are not sufficient to translate the capacities into more innovative structure to generate higher patent applications, casting doubt on the quality of education in D-8 countries. Gains in access to education should turn attentions to the challenge of improving the quality of education and accelerating learning. D-8 countries should focus on improving the framework conditions for innovation and thus the potential outcomes related to the productivity and competitiveness in order to prompt a faster catch-up process.

In this process, it is important to allocate a reasonable amount of public budget to education, R&D and innovation. Training and attracting talent should be placed in top of the national strategies for innovation. In order to ensure effective use of these resources while supporting research and innovation activities, necessary monitoring and evaluation mechanisms should be in place. Needs for critical reforms should be quickly identified and implemented. Cooperation with other countries in knowledge sharing and transfer should be strengthened. It is also important to note that challenges for making innovation the engine of economic development can be quite demanding in low income countries due to poor framework conditions and low human capital. Improving education attainment and quality of education as well as strengthening framework conditions should be priority policies in these countries.

D-8 countries need to pay a special attention to innovation and R&D policies that are critical ingredients for technology growth. National R&D policies should encompass several components such as sharing a larger budget for R&D sector (public and private), increasing average education level, and redesigning curriculums to encourage innovative ideas. The framework conditions, which include policy environment, economic environment, regulations and procedures, access to finance, education system, protection of IP rights and empowerment, should be well taken into consideration while devising policies for innovation-friendly environment.

### **Institutional Quality**

Institutions promote productivity and competitiveness by reducing transaction costs which cover search and information costs, negotiation costs, policing and enforcement costs. Institutions decrease transaction costs by setting up common legal frameworks and by encouraging trust with the establishment of policies and justice systems.

D-8 countries need to undergo a change in their institutional structure and legal framework that affect directly and indirectly their competitiveness. In recent years, a small decline was observed in the average OIC competitiveness scores that indicate the urgency of this issue. It is clear that the

reforms should be prepared with a holistic approach and implemented under a strategic plan. Otherwise, the efforts will more likely to be inconclusive.

D-8 countries, particularly low-income member countries, can reap productivity gains by further strengthening the quality of their institutional frameworks that protect property rights, including intellectual property. Property rights and the ability to enforce contracts are considered to be two critical elements of a country's institutional and legal framework and they are critical conditions for market-based economic activity.

Further strengthening institutions would have many repercussions on other key factors of raising productivity. It could help promote private investment and entrepreneurship, and foster financial sector development. Even if total investments are rising, inefficiencies in public investment management and weak governance often distort the impact of public spending on capital accumulation and inadequate protection of investors discourage investments. Therefore, it is essential to improve the quality of institutions and governance in order to improve the quality and outcome of investments.

### **Infrastructure Development**

Improved infrastructure improves competitiveness and productivity, lower the cost of doing business, and facilitate trade and foreign direct investment as well as deepen economic and social integration and create employment opportunities. Despite significant progress in some areas, many D-8 countries are still suffering large infrastructure deficits, manifested in deficient transportation and communications networks and low energy-generating capacity to meet rising demand.

Integrating energy, transport, communication and water infrastructure within and across countries is critical for enhancing productivity and competitiveness. Although D-8 countries are big enough to develop large scale infrastructure on their own, particularly in the area of transport, initiating regional infrastructure projects would be an efficient option for the member countries to increase connectivity, reduce the cost of doing business and trade as well as facilitate people to have access to larger markets.

In the area of energy, there is an urgent need to invest in the diversification of the energy mix. This will reduce heavy reliance on single source of energy and make the infrastructure investments sustainable. Finally, as a critical tool in enhancing productivity and competitiveness, ICT infrastructure should be developed for firms to obtain and utilize the latest information and technology. In areas where transport, energy and ICT policies converge with each other or other policy objectives, a high degree of coordination among different ministries and institutions should be ensured.

Overall, insufficient infrastructure is a key cause of low productivity growth. Improving connectivity to both domestic and foreign markets could boost prospects for productivity growth in agriculture and manufacturing with significant growth impacts. In order to attract more private and foreign investment, the regulatory environment for infrastructure may be reformed and public-private partnerships can be further promoted.

### **Economic Stability**

Low and predictable inflation rate, an appropriate real interest rate, and competitive and predictable real exchange rate are important elements of macroeconomic stability that are discussed in the report. It is argued that inflation volatility adversely affects an effective allocation of resources, as it is not possible for firms to know the future prices and wages. Moreover, large fluctuations in exchange rates may signal weakness and imbalances in macroeconomic situation of a country. It is also argued that financial deepening can enhance the capacity of the financial system of a country to intermediate capital flows.

D-8 countries found to have in general low inflation and exchange rate volatility, but low financial depth. Macroeconomic stability requires a proper mix of fiscal and monetary policies. A well-developed financial system facilitates the financing of long-term investment and better risk sharing can support investment in higher return projects. When this leads to greater economic efficiency and a better allocation of capital, it is conducive to higher output and growth (Levine, 2005). Fiscal policy and monetary policy should support sustainability and stability in major economic indicators so that investors and finance institutions have the clarity about the projects and project financing.

Financial openness may expose economies to higher volatility in financial flows. Capital account liberalisation without sufficiently developed financial markets can lead to increased volatility (Dell’Ariccia et al., 2008). There is again a considerable body of evidence associating trade openness with long-term growth but also with greater output volatility (Easterly, et al., 2001). Flexible exchange rates help to absorb terms-of-trade shocks, which can be large, persistent and account for a sizeable share of macroeconomic volatility (Andrews and Rees, 2009; Kose, 2002). Proper policy choices should be made in line with the economic fundamentals and development strategies in each economy.

### **Market Efficiency**

The three main areas where efficiency is sought were labour market, goods market and financial market. An efficient labour market should ensure that the skill mismatch is at minimum level in the market. In the case of goods market efficiency, the right mix of goods and services should be produced and effectively traded in the market. Finally, an efficient financial market will ensure allocation of resources to most productive business opportunities; thereby increase overall productivity and competitiveness of an economy.

With respect to labour market efficiency, it is important to ensure that human capital resources are allocated to their most productive uses. Particularly in developing countries, ability of the market to reallocate labour between sectors (or from old sectors to newer more productive sectors) is critical in growth process. It should be noted that while in some countries significant number of firms identify inadequately educated workforce as a major constraint, firms tend to offer formal training to increase the quality of labour force. This indicates some level of efficiency in the labour market, skill mismatch in the labour market can be reduced and employability of labour force should be improved by raising the quality of training and education programmes. There is also quite a moderate share of firms identifying labour regulations as a major constraint, therefore further efforts should be made to improve regulations for higher labour market efficiency.

Significant flexibility in the labour market should be attained in order to allow for structural transformation from resource-based economy to efficiency- and innovation-driven economy.

Market efficiency is commonly associated with competition, which requires control of abuse of dominant positions, prevention of collusion between firms and removal of market entry barriers. The literature also suggests that an efficient market can only exist if there are no barriers to entry for potential competitors who wish to enter the market. In these indicators, D-8 countries reveal slightly better picture compared to other OIC and non-OIC developing countries; however, it is still recommended to reduce the market dominance of few business groups in order to promote competition and productivity in D-8 countries.

If financial markets do not work properly, adequate and long-term financial resources will not be able to channel to producers and entrepreneurs with profitable investment opportunities. Financial freedom index, which is a measure of banking efficiency as well as a measure of independence from government control and interference in the financial sector, is still lower in D-8 countries compared to other OIC and non-OIC developing countries, despite the fact that it was the only country group that improved its score over the last decade. This indicates the needs for improving banking efficiency and efficiency-distorting interventions in the financial sector.

The empirical literature suggests that reforms focused on reducing administrative burdens, simplifying regulations, strengthening competition, and reducing bureaucracy are positively associated with higher productivity growth (IMF, 2013). All these improve the environment in which firms operate and increase the overall efficiency. The composition and quality of taxation and public spending can also have a significant impact on productivity and growth. An efficient fiscal policy can result in more effective provision of public services in education and infrastructure. In this context, increasing amount and efficiency of public spending in productive areas and cutting back in non-productive areas can provide important productivity gains.

### **Economic Diversification**

Identification of productive capacities may require significant economic diversification. It is particularly important to exert new and powerful efforts to develop the productive base given the immense competition among the countries and global economic slowdown. Countries with small market size may face particular challenges in their efforts to diversify the economy, but promoting export-oriented industries and larger economic integration with neighbouring countries may ease this bottleneck.

The standard argument for diversification for resource-rich economies is to mitigate the effects of Dutch disease. In small economies with narrowly defined production structure, volatility of resource prices can be a source of economic volatility, therefore these countries need to expand their range of export commodities in order to reduce the impact of external volatility. However, the main argument for diversification is to encourage countries to engage in activities with significant productivity and competitiveness potential. This process of identification should be managed in a way that does not waste the limited resources available and it should be realistic. If the process involves resources that do not available or difficult to secure or a timeframe that is not sustainable or a potential outcomes that does not cover the investments made and bring enough competitive advantages, the outcomes of the diversification strategy may be disappointing.

It is found that there is a tendency towards increased diversification in D-8 countries. However, there is a need to achieve more competitiveness in sectors and products of manufacturing industries. Overall, discovering productive advantage requires significant diversification. Successful discoveries will not only increase overall productivity levels but also number of products in which to have comparative advantage.

### **Entrepreneurship**

Entrepreneurial activity in D-8 countries is clearly lagging behind developed as well as other OIC and non-OIC developing countries. There are important constraints in promoting entrepreneurial activity, which include among others time and procedures required to start a business as well as investor protection. With regard to the number of procedures, the progress achieved by other groups during 2006-2014 is better than that achieved by D-8 countries. A similar trend has been observed in terms of time required to start a business. Despite the poor progress, D-8 countries on average still require less time to start a business compared to other developing countries as of 2014. However, with regards to investor protection, D-8 countries as a group perform much better than other OIC and non-OIC developing countries.

Encouraging entrepreneurial activity for identifying productive capacities is critical, but improving only procedures is not enough if entrepreneurs are not innovative. Innovative abilities of entrepreneurs should also be improved through investing in skills and education of entrepreneurs. It is innovative entrepreneurship that is most desirable for growth. Therefore, innovation and education policy should be a central focus of entrepreneurship promotion in D-8 countries as it is in developed economies.

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