
Global Competitiveness and Gross Domestic Product in Mena Countries

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Abstract: Global competitiveness is considered one of the most important economic indicators that attracted attention in the economic literature, both at the theoretical and empirical level because of its direct and indirect effects on other macroeconomic variables such as economic growth, unemployment, inflation, and other variables. However, this literature did not resolve the controversy over a specific concept for global competitiveness or its sub indicators to measure that competitiveness, as several international bodies and organizations issue periodic reports on measuring global competitiveness in most countries of the world according to methodologies that differ according to the authority or the organization issuing the report. This difference in the methodology for measuring global competitiveness directly affected the credibility of this concept and its reflection on The standard of living of citizens or the economic performance of the country in general, Therefore, the study aimed to explore the determinants of global competitiveness in the countries of the Middle East and North Africa (MENA), based on the Global Competitiveness Index issued by the World Economic Forum (WEF) to reach these determinants and rank them according to their direct impact on global competitiveness. and indirect impact on GDP in countries of the study.

Keywords: Competitiveness, GDP, World economic forum, MENA countries.

JEL Classification: O43, O47, O57.

INTRODUCTION

Most countries of the world, especially developing countries paying attention to the global competitiveness in recent years, as the competitiveness has become one of the most important criteria that indicate the progress and prosperity of the country on several levels, whether economically, socially, or technologically, despite the consensus on the importance of improving competitiveness indicators. However, defining what is meant by competitiveness is a matter that has not yet been agreed upon, and since there has not been agreement on a clear and specific concept of competitiveness, it is natural that there is no agreement on the methods of measuring and calculating this concept, as economic literature differs in the concept of competitiveness and the method of measuring it, and even within a single concept or school of thought. It is illogical to specify a set of variables to measure competitiveness in all countries of the world without differentiating between the economic and social situation of those countries, as this inevitably leads to the omission of a number of important factors that are owned by or available to countries over others or a geographical region over the other, as it is difficult to identify all variables which may lead to improving competitiveness in all countries of the world and merging it into a single model or concept. If we recognize the permissibility of this, regional differences at the geographical level may affect the relative importance of some variables over others.

Since the (MENA) countries are characterized by convergence in economic and social situation, it is possible to analyze and measure the competitiveness index in these countries to find out the most important indicators and variables that affect the global competitiveness of those countries, and to identify sectors that require special attention according to their relative importance among those countries. With a focus on the role of these determinants and their impact on economic growth in those countries, based on the Global Competitiveness Index issued by the World Economic Forum.

Improving the country's position in global competitiveness has become one of the most important goals that developed and developing countries seek to achieve. However, despite the clarity of that goal, the main problem lies in the multiplicity of variables affecting the countries' competitiveness and the lack of determination of the degree to which these variables affect the country's competitiveness, in addition to the multiplicity of competitiveness concepts and indicators indicating them, and the extent to which these determinants affect economic growth in different countries. Thus, the research goal is to answer the following question: "What are the determinants of global competitiveness in the MENA countries, and to what extent do these determinants affect GDP in those countries?"

The importance of the study stems from the fact that most of the indicators and variables that dealt with measuring the competitiveness of different countries or regions did not differentiate between the economic situation of those countries, nor did they differentiate between the different geographical regions or the position of countries in the global trade trans-

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actions, which may doubt the results of those indicators. Besides, the countries of the Middle East and North Africa is characterized by several similar characteristics between them economically, socially, geographically, and demographically, which increases the importance of measuring competitiveness and determining its determinants for that group of countries and its impact on their GDP.

The scope of the study is based on a group of 12 countries in MENA region, namely (Algeria - Bahrain - Egypt - Israel - Jordan - Kuwait - Morocco - Oman - Qatar - Saudi Arabia - Tunisia - UAE) using available data on those countries. In the period between 2008-2018.

Based on the foregoing, the study consists of two parts as follows:

The first part: The literature review of competitiveness which includes the concept of competitiveness from a macro and a micro perspective, and how the issue of competitiveness was addressed in different economic schools, in addition to an analysis of the competitiveness indicators in the countries of the study.

The second part: includes an applied study to determine the impact of the global competitiveness determinants of the World Economic Forum (WEF) in the MENA countries on GDP in those countries, based on the Panel Data series of data available in the period from 2008-2018.

LITERATURE REVIEW

Despite the controversy in the economic literature about the concept of competitiveness, it is possible to distinguish between two completely different terms. There is the concept of competitiveness at the micro-economic level or competitiveness and competitiveness at the macro level. Competitiveness from a Microeconomic Perspective has a clear and specific concept of competitiveness based on the facility's ability to compete, grow and make profits, and therefore the more the enterprise is able to produce products that meet the needs of international markets in terms of price and quality, the more competitive it will be and the more certain it will remain in the market, and the more competitive the enterprise will be compared its competitors, the more it acquires a larger share in the market in which it operates, and vice versa, unless it enjoys external support, protection, or subsidies. (Martin, 2003)

The concept of competitiveness at the macro level is a controversial concept between the literature and economic schools. The problem of this matter lies in the fact that it is unreasonable to talk about the macroeconomic competitiveness of countries and to make comparisons between the competitive capabilities of countries at a time when there is no clear and specific concept of macroeconomic competitiveness in the first place, and therefore it is illogical for economic policy to be based on achieving a goal whose interpretation has been disputed so far. This difference is mainly because the concept of competitiveness at the macro level emanated from the concept of competitiveness at the micro level or competitiveness at the enterprise level despite the great difference between the two concepts in several respects. As the enterprise exits the market when it loses its ability to provide products with the quality and price re-

quired in the market, or in case of its inability to fulfil its obligations to its customers or suppliers. Contrary to the situation regarding states, there are no bottom line for the performance of the state, after which it will exit from the market. The state's economic performance may be good and achieve welfare for its citizens, and its performance may not be convincing for its citizens. In all cases, there are no bottom line after which the state will exit the international markets. (Krugman, 1994).

In addition, the success of the institution in acquiring a larger share in the market will be at the expense of another institution through a decrease in its share or its exit from the market, unlike the situation regarding countries. The success of a country and its growth in international markets creates other opportunities for other countries, as international trade is not zero-sum game. That is, any improvement in the economic conditions of a country will not necessarily be at the expense of another countries. (Martin, 2003).

In addition to the controversy surrounding the concept of competitiveness at the micro and macro level, there is another controversy related to the issue of competitiveness in the economic literature, where the economic schools were exposed to the concept of competitiveness, either directly or indirectly.

The contribution of the classic school is that the country must specialize in the production of certain products to enjoy an advantage (absolute - comparative) that enables it to reduce production costs and increase the productivity of the factors of production in a way that allows it to acquire a larger share in international trade, In addition, the idea of comparative advantage developed the concept of competitiveness because, according to the model of comparative advantage, all countries can enjoy a comparative advantage in at least one product, and therefore all countries are able to compete internationally, but this idea was criticized as the comparative advantage model did not explain the comparative advantages among modern industrialized countries, and it is not applicable for two countries that have the same opportunity cost in terms of production, in addition, the idea of linking the country's competitiveness to opportunity costs only is considered insufficient concept. (Voinescu & moioiu, 2014).

As for the neo-classical school, there were many contributions about the concept and nature of competitiveness. According to John M. Clark, competitive advantage is based on innovations implemented by institutions, which in turn motivates firms to compete strongly within the markets, which ultimately leads to technological development and enhance economic growth at the macro level. While for Wroe Alderson, there are six main sources of corporate competitiveness represented in customer segments in the market, promotion and advertising, product distribution channels and access to customers, product development, production process improvement, and innovation. These six factors drive companies towards achieving competitive advantages, which in turn leads to improve the competitiveness of the country as a whole, but according to Joseph Schumpeter, the survival of the firm in the market in the long term is fully linked to its ability to adapt to external variables and its ability to innovate and achieve efficiency continuously, as the ability of the

firm to innovate is a key to achieve competitive advantage whether at the micro or macro level. (Siudek & Zawojcka, 2014).

Many contemporary contributions emerged recently that dealt with global competitiveness, and among them Paul Krugman's contribution, which linked global competitiveness to production growth, but rather made production growth the main driver of global competitiveness, Krugman also linked the high level of competitiveness in some countries to the standard of living of its citizens, and among other contemporary thoughts is the contribution of Michael Porter, who linked the global competitiveness of countries to the productivity of those countries in the long run, which requires a business environment that supports continuous innovation, whether at the product level or at the level of production processes or at the organizational level, as Porter explained that there are four factors that contribute to improving the competitiveness of enterprises and businesses within the country, which are demand conditions, intermediate industries and industrial clusters, the company's strategy and its position in global competition, and the size of resources and available production factors (labor, land, capital, and entrepreneur). (Porter, 1990)

The ongoing controversy in the literature and economic schools caused a variety of concepts and definitions of competitiveness. Some literature linked it to the overall productivity of the country, while others linked it to improving the standard of living of citizens, while others opposed the existence of a concept of competitiveness at the macro level. Below is a set of definitions and concepts of competitiveness at the macro level.

The definition of the Economic Committee formed by US President Reagan in 1984 to discuss the competitiveness of the US economy: *"The competitiveness of a country is the degree to which a country can produce goods and services that meet the standards and requirements of global markets in light of a free and fair market, while achieving an increase in the real income of its citizens, and an increase in the creation of job opportunities. Improving the standard of living while adhering to the country's full ability to fulfil its external obligations and not being limited to a narrow competitiveness perspective that is concerned only with improving the country's trade balance"*. Also (OECD) defines competitiveness as: *"the degree to which a country can produce goods and services that meet the requirements of the global market, in an open global market while increasing the real income of its citizens"*. While the European Development Report 2000 defines competitiveness as: *"A country's economy is considered a competitive economy if that country succeeds in improving the standard of living of its citizens and achieving a high employment rate on a sustainable basis, with an emphasis that economic activity should not cause unsustainable growth in the country's trade balance, or negatively affect the welfare of future generations"*. (Martin, 2003)

The world economic forum (WEF) defines competitiveness as: *"a set of factors, institutions, and policies determining the productivity of any country, which in turn determines the extent to which this economy can grow and prosper"*. (Schwab, 2018)

The international institute for management development (IMD) defines competitiveness as: *"the competitiveness of the country is a comprehensive concept that evaluates the ability of the state to create and maintain a sustainable economic environment capable of creating added value for the institutions of this country and improving the welfare of its citizens economically, socially and culturally"*. (IMD, 2019)

Based on the previous definitions, we can identify some of the basic factors affecting the competitiveness of the country, such as, most of the definitions agreed that enhancing the competitiveness is associated with enhancing the standard of living of the country's citizens, also competitiveness requires working in an open free market, also enhancing competitiveness is a continuous process shouldn't focus only on the short term enhancements, moreover, the competitiveness should extend to include the prosperity of the standard of living at the social, environmental, and cultural level, furthermore, most of competitiveness definitions dealt with the competitiveness as a results such as (improving productivity, or improving standard of living) instead of identifying the factors that explain the competitiveness of the country.

Regarding the issue of measuring the competitiveness of the country, there are many methodologies used in measuring competitiveness and its impact on the different economic variables such as the following contributions:

- a. The world economic forum's global competitiveness index:

The (WEF) global competitiveness index (GCI) is one of the most important indicators dealt with measuring competitiveness, it relies on 12 main indicators such as (institutions, infrastructure, macroeconomic stability, health, skills, product market, labor market, financial system, ICT adoption, market size, business dynamism, and innovation capabilities). These twelve variables also include about 103 sub-indicators to explain the main indicators. (Schwab, 2019)

- b. The Global Competitiveness Index of the International Institute for Management Development (IMD):

The Competitiveness Index issued by the IMD includes four main indicators and more than 300 qualitative and quantitative sub-indicators, and these indicators change from year to year. Those variables are (country's economic performance, government efficiency, business sector efficiency, and infrastructure), and it is not possible to avoid the overlap between the sub-variables during the estimation of the Global Competitiveness Index. (IMD, 2019)

- c. The competitiveness index of the American competitiveness council:

According to this indicator, the country's competitiveness is measured based on four indicators. Investment, which includes a set of sub-indicators that measure investment in modern technology, infrastructure, and investment in the human capital. And productivity which is determined through several sub-indicators, such as the production of goods and services, the performance of the labor force, and the efficiency in the use of factors of production. The third indicator is concerned with measuring international trade and the extent to which local production is linked to global mar-

Table 1. Average Values of Determinants of Global Competitiveness for Selected MENA Countries (2008-2018).

	Algeria	Bahrain	Egypt	Israel	Jordan	Kuwait	Morocco	Oman	Qatar	KSA	Tunisia	UAE
GCI	3.92	4.53	3.8	5	4.25	4.55	4.14	4.5	5.16	4.96	4.22	5.07
institution	3.25	4.97	3.77	4.65	4.6	4.22	4.09	5.16	5.69	5.1	4.3	5.56
infrastructure	3.21	5.07	3.66	4.91	4.22	4.29	4.06	4.92	5.24	5.03	4.12	6.14
Macroeconomic stability	5.53	5.16	3.14	5	3.84	6.43	4.93	5.92	6.3	5.94	4.57	5.97
health	5.5	6.1	5.35	5.97	5.75	5.56	5.48	5.63	6.3	5.82	6	6.1
Labor skills	3.58	4.7	3.4	5.04	4.52	3.93	3.53	4.17	4.94	4.64	4.42	4.97
Product market	3.41	5	3.93	4.53	4.5	4.21	4.28	4.7	5.2	4.84	4.26	5.35
Labor market	3.25	4.7	3.2	4.67	4	4.1	3.62	4.41	4.98	4.34	3.7	5.04
Financial system	2.75	4.77	3.62	5.02	4.13	4.1	3.97	4.53	5	4.54	3.67	4.74
ICT adoption	2.76	4.9	3.27	5.42	3.8	3.89	3.57	4.05	5	4.5	3.67	5.29
Market size	4.44	3.02	4.86	4.27	3.34	3.97	4.13	3.65	3.96	5.08	3.79	4.5
Business dynamism	3.1	4.35	3.81	4.96	4.23	4.06	3.83	4.19	5.07	4.7	3.97	5.08
Innovation capability	2.6	3.29	2.87	5.5	3.42	2.95	3.02	3.35	4.51	3.84	3.34	4.15

Source: Author's calculations based on WEF Global Competitiveness reports (2008-2018).

kets. The fourth indicator is the standard of living, given that its improvement represents the goal of enhancing competitiveness. (Metwally, 2021).

d. OECD measure of competitiveness:

The OECD prepared a program to search for the determinants of long-term economic growth and competitiveness. The program focused on labor productivity as a basic determinant of increasing total productivity in the country and thus as a basic determinant of long-term growth and competitiveness. In measuring the competitiveness of countries, it relied on five determinants: intensity of use of communications and information technology, innovation technology dissemination, human capital, entrepreneurship, and macroeconomic stability and competition protection. (OECD, 2001).

The previous indicators are considered the most important measures used in measuring competitiveness. However, the indicator of the World Economic Forum is considered the best among these indicators, for several reasons such as, it is the indicator with the largest number of variables that explain the competitiveness between countries, and that it is issued annually, and it was prepared to be a global indicator and was not prepared according to a specific country or region, in addition to its reliance on experts from all the countries included in the report to ensure the credibility and reliability of the available data on those countries. Despite the multiplicity of advantages of the Global Competitiveness Index of the WEF, it is marred by some problems. Such as, the neglect of some indicators that are of great importance to some countries or regions that enjoy some economic, geographical, or demographic advantages over others, which may be a decisive factor in increasing the competitiveness of those countries or regions.

As for the MENA countries, they are similar in a set of economic, cultural, and social aspects, which leads to a convergence of their performance in the determinants of global competitiveness. The following table shows the average values of the determinants of global competitiveness for the countries under study in the period between 2008-2018.

Note: from the previous table we can notice that Qatar, Israel, and UAE have a better ranking than the other countries in the GCI and in the sub-indicators as well, as Qatar ranked first in both health and institutions, while the UAE ranked first in indicators of infrastructure, product market, and labor market, and shared the first rank with Qatar in the business dynamism index, while Israel has the lead in the labor skills, the financial system, communications, ICT adoption, and innovation, on the other hand, Egypt was at the bottom of the ranking of the countries under study in terms of the average overall GCI, even if it showed an annual improvement in the years under study without benefiting from the huge size of the market or The enormity of the product market and the labor market as indicators that could put Egypt at the top of the list.

THE MODEL

the model of the study is based on the data from World Economic Forum's global competitiveness reports from (2008-2018) besides the world development indicators from world bank data, using (Path Analysis) of AMOS software, as the path analysis method is used to test the causal relationship between a dependent variable and two or more independent variables. In this case, the impact of the twelve competitiveness sub-indicators on the overall global competitiveness index will be measured directly, and its impact on GDP indirectly, so that the global competitiveness index in this case

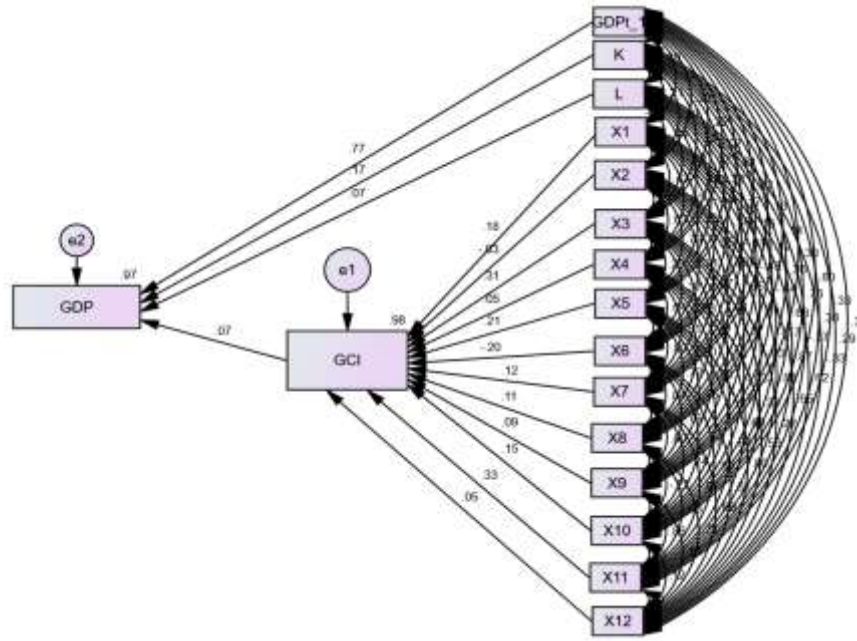


Fig. (1). The model structure.

Table 2. The Model Estimation Results.

P	C.R.	S.E.	Estimate	independent	Dependent
0.524	-0.638	0.029	-0.019	X2	GCI
0.001	17.088	0.008	0.132	X3	GCI
0.029	2.181	0.032	0.07	X4	GCI
0.001	5.364	0.031	0.164	X5	GCI
0.001	-3.218	0.052	-0.166	X6	GCI
0.01	2.569	0.032	0.083	X7	GCI
0.008	2.66	0.027	0.071	X8	GCI
0.037	2.085	0.023	0.048	X9	GCI
0.001	7.008	0.017	0.116	X10	GCI
0.212	1.248	0.023	0.029	X12	GCI
0.001	4.983	0.05	0.252	X11	GCI
0.001	3.532	0.033	0.115	X1	GCI
0.015	2.425	10247303196	24852583261	GCI	GDP
0.01	2.564	641.889	1645.734	L	GDP
0.001	3.467	0.206	0.712	K	GDP
0.001	13.763	0.057	0.791	GDP _{t-1}	GDP

becomes an intermediate variable. It is directly affected by the twelve sub-indicators of competitiveness and directly affects GDP, while the twelve competitiveness indicators affect GDP indirectly.

Based on the previous empirical studies, GDP is a function of GCI, gross fixed capital formation (K), total labor force (L), and GDP in the previous year (GDP_{t-1}), while the sub-indicators of GCI are institutions (X1), infrastructure (X2),

macroeconomic stability (X3), health (X4), labor skills (X5), products market (X6), labor market (X7), financial system (X8), ICT adoption (X9), market size (X10), business dynamism (X11), and innovation (X12), As follow:

After the estimation of the model the results came as follows.

Note: from the results we can see that the infrastructure (X2) and innovation (X12) were insignificant as P value for infra-

structure was 0.524 and the value of C.R. was less than 1.964 (the lowest value to consider the variable significant), while P value for innovation was 0.212 and C.R. value was 1.248. For the rest of the variables, they were all significant, whether for the competitiveness sub-indicators affecting the overall global competitiveness index (GCI) or for the other independent variables affecting the GDP.

The model dealt with the multicollinearity issue, as most of the competitiveness sub-indicators are linked to each other, as the path analysis model avoids the effects of this problem when estimating.

As for the value of the parameters of the independent variables of the model, they came as follows:

First: the standardized direct effects (the direct effects of the 12 sub-indicators on the GCI, and the effects of the other main independent variables on GDP).

Table 3. The Standardized Direct Effects.

GCI	GDP	
GDPt_1	0	0.766
K	0	0.171
L	0	0.072
X7	0.117	0
X4	0.052	0
X9	0.09	0
X12 (insignificant)	0.051	0
X11	0.327	0
X10	0.151	0
X8	0.105	0
X6	-0.201	0
X5	0.213	0
X3	0.31	0
X1	0.183	0
X2 (insignificant)	-0.032	0
GCI	0	0.067

Second: the standardized indirect effects (the effects of the 12 competitiveness sub-indicators on the GDP):

Table 4. The Standardized Indirect Effects.

	GCI	GDP
GDPt_1	0	0
K	0	0
L	0	0
X7	0	0.008
X4	0	0.004

X9	0	0.006
X12 (insignificant)	0	0.003
X11	0	0.022
X10	0	0.01
X8	0	0.007
X6	0	-0.014
X5	0	0.014
X3	0	0.021
X1	0	0.012
X2 (insignificant)	0	-0.002
GCI	0	0

Third: the standardized total effects.

Table 5. The Standardized Total Effects.

	GCI	GDP
GDPt_1	0	0.766
K	0	0.171
L	0	0.072
X7	0.117	0.008
X4	0.052	0.004
X9	0.09	0.006
X12 (insignificant)	0.051	0.003
X11	0.327	0.022
X10	0.151	0.01
X8	0.105	0.007
X6	-0.201	-0.014
X5	0.213	0.014
X3	0.31	0.021
X1	0.183	0.012
X2 (insignificant)	-0.032	-0.002
GCI	0	0.067

As for the explanatory statistics of the model, the value of (CMIN/DF) of the default model was 2.402, between (2 and 5) Which means the huge explanatory power of the model.

Table 6. CMIN Statistics.

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	138	36.024	15	0.002	2.402
Saturated model	153	0	0		
Independence model	17	3810.327	136	0	28.017

RESULTS & RECOMMENDATIONS

Regarding the impact of the twelve competitiveness sub-indicators on the overall global competitiveness index (GCI), the infrastructure variable and the innovation variable were statistically insignificant in the selected MENA countries.

With regard to the infrastructure variable, this matter can be attributed to the fact that the investments that most of these countries attract are primarily related to the extractive industries such as oil, natural gas, and metals, which represent the largest share in the economies of the MENA countries in a way that may lead to not giving the infrastructure variable sufficient share in the development policies of those countries, in addition to focus in infrastructure development is mainly on roads or bridges without the infrastructure related to information technology and means of communication, which led to a decrease in the infrastructure index in countries such as Algeria, Egypt, Bahrain and Saudi Arabia, and its fluctuation between high and low in each of Jordan, Kuwait and Morocco, Where this matter is also due to the change in the methodology for calculating the infrastructure variable and the addition of other sectors in which the countries under study do not have sufficient development to catch up with developed countries, as the measurement of the infrastructure variable depends on a number of indicators such as the quality of infrastructure in general, the quality of roads, railways, ports, airports, and the number of flights seats available and availability of electric power, telephone and Internet. (Schwab, 2018)

As for the innovation variable, the indicators of the countries under study were low in all years except for Israel, and only the UAE and Qatar are close to its results, which means that there is no effect of this variable on the competitiveness of the countries under study, as the methodology for measuring this variable depends on the innovation environment in the country and the quality of scientific research institutions, spending of academic institutions and business firms on research and development, the contribution of universities to scientific research, the involvement of the country in the production of advanced technological products, the number of scientists and engineers in the country, the volume of patents and the extent of their application. (Schwab, 2018)

As for the product market efficiency (X6) indicator, its parameter sign was negative to reflect an inverse relationship between this variable and the GCI on the one hand, and the GDP variable on the other hand. This could be due to the complexity of the methodology for measuring this variable, as this variable depends on about 16 sub-indicators, and MENA countries have a major problems in its markets due to lack of governance and huge existence of informal economy.

It appears that these countries are greatly affected by the Dutch disease, especially the oil-exporting countries whose economies depend heavily on crude oil revenues, as the per-

capita income in those countries is not commensurate with the GCI nor with sub-indicators of it.

As for the 9 remaining sub-indicators of GCI, it was positively affecting GCI and GDP, we can list those sub-indicators according to the following order according to its impact on GCI and GDP, (business dynamism, macroeconomic stability, skills, institutions, market size, labor market, financial system, ICT adoption, health).

Based on the foregoing, the study recommends the following:

- Enhancing the business environment through reducing the cost and the time of starting a business, paying more attention to the entrepreneurial culture, spread the principle of delegation of authorities.
- The macroeconomic stability came from stabilizing the inflation rate, controlling public dept, and attracting more FDI.
- Paying more attention to labor skills through education and continuous training.
- Trying to digitalize the government services to reduce the cost of corruption and to increase the efficiency of the government institutions.

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