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PUBLIC FINANCE INDICATORS AND THE VALUE OF INVESTMENT PROJECT DEVELOPMENT: A COMPARATIVE STUDY OF GCC COUNTRIES

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Abstract. This study aims to identify public financial indicators involved in the investment projects of GCC countries. The data was collected from the IMF and the MEED from 2011–2017. The study measured the impact of public finance based on eight variables and two proxies (national and trade accounts) on the investment project development proxy, which is measured by the total value of projects planned or currently underway and the value of the ten largest projects currently underway. The results showed that Saudi Arabia and the UAE rank high in both proxies of investment project development. The simple regression results also illustrated that real GDP, the real non-oil GDP variables of national account proxy, and the value of the exported goods and services variable of the trade accounts proxy have a significant impact on the total value of projects planned or currently underway. Meanwhile, only three factors of national accounts, gross national savings, CPI inflation, and current account balance, have a significant impact on the value of the ten largest projects currently underway. The overall conclusion of the study is that GCC countries have established high-value development projects in different cities that require a proper public policy to efficiently manage capital expenditure within the public sector**.**

Keywords: public finance indicators, value of investments, projects development, government expenditure, inclusive growth, public policy, GCC countries.

JEL Classification: J18, H54, H53, G24, F43, E22, D46.

Introduction

The successive financial crises affecting both developed and developing countries has led to an increased focus on the public financial sector and interventions in the development of economic sectors such as financial, industrial, services and insurance (Alfan & Zakaria, 2013). Due to the increasing role of globalization in different global countries' economies, a thorough understanding of economic changes is necessary for growth economic, especially

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in the industrial sector, which plays a prominent role in establishing international relations (Calabrese & Grizzle, 2012). Today, the economic reality of Gulf Cooperation Council (GCC) countries is characterized by a developed market and a lack of self-sufficient production in addition to a dependency on foreign markets for economic development (Carmeli, 2008). In recent years, GCC governments have thus focused on analysing the efficiency of the public sector indicators; however, most of these countries face financial difficulties, especially following the decline in oil prices in the recent global financial crises. These difficulties include an increase in public debt and the inability of certain countries to control public expenditures (Hildreth, 1996).

Analysing performance within the public sector is a major challenge for several governments and policymakers who are currently experiencing high public debt levels (Cheang & Choy, 2011). Indeed, public finance is at the centre of many countries' policies to stimulate growth and address certain societal issues (Ammons, 1995). The financial crisis impacted the fiscal policies of individual countries and their management of general public finance, which requires them to continuously evaluate their effectiveness and efficiency (Comaniciu & Bunescu, 2012). Recent literature has indicated that all tax instruments are unequal in regard to their effect on growth and that taxes have been combined for a more effective redistributionthe economic wealth, since income taxes have been found more effective than consumption taxes. Furthermore, a government's overall investment in infrastructure and creative activities contributes to its country's productivity and economic growth, while social and quantitative expenditures have been seen to reduce inequality (Boyne, 1988).

Public financial management is an important factor involved in the development of operations, effectively supporting accessibility of public resources and helping to stabilize a country's fiscal and economic policies (De Bruijin, 2002). This process takes place through the reallocation of resources to reflect local priorities (Acemoglu, Johnson, Robinson, & Thaicharoen, 2003).

Public financial management is a strategic objective through which all countries attempt to support institutions and build sustainable societies (Andres, Domenech, & Fatas, 2008). It also provides wise leadership that has received international acceptance into the framework of monitoring and assessment tools. Moreover, leadership and global knowledge evolve through the establishment of an institutional framework for financial and accounting expenditures and tools; otherwise, countries will continue to poorly function (Badinger, 2009). The establishment of a strong ministry of finance leads to the efficient management of resources and the appropriate distribution of wealth among the economic sectors of the community while working to create projects for the country in a balanced manner leads to specific planning and budget goals (Buch, Doepke, & Pierdzioch, 2005).

The existence of strong public financial systems establish and implement policies that can be effectively controlled with few risks to management regarding the available resources allocated to the institutions working on building the country (Fatas & Mihov, 2001). In light of the scarcity of public financial resources, generally of a government must set priorities in regard to achieving its goals within a specific timeframe (Hwang, Park, & Shin, 2013).

The system for measuring the performance of public finances is sensitive, especially when under an economic system that requires greater transparency and credibility in the construc-

tion of industrial sectors (Loayza, Ranciere, Serven, & Ventura, 2007). In addition, it should also be characterized by transparency and comprehensiveness in order to reduce financial risks. This will only be achieved if the budget policy respects the country's laws. Moreover, the practice of monitoring and forecasting important performance measurement standards through written reports helps increase the flexibility of management decisions (Mackowiak, 2007).

Public finance issues include various policies and decisions related to a country's treasury and budget, address the fiscal deficit, and identify solutions to public debt problems (Raddatz, 2007). Public sector performance has recently become important in economic growth sectors due to increased pressure on public spending, which stems from demographic trends, globalization (which improves efficiency), effectiveness, and performance (Alfan & Zakaria, 2013). Ammons (1995) argues that measuring performance in the public sector is not simple, since it represents the interests of external stakeholders. Thus, it is important to establish a relationship between objectives and results (Raddatz, 2007).

The analysis of public sector efficiency is different from that of the private sector. In the public sector, efficiency must be seen as a measure of economic efficiency and social outlook, and most public sector investments are made over a long period of time (Comaniciu & Bunescu, 2012). The difficulty in measuring efficiency in the public sector is largely due to an inability to accurately determine the impact of output performance due to the certain external factors that affect it (Spendzharova & Vachudova, 2012).

This paper aims to first develop, present, and analyse the ranking of the total value of projects either planned or currently underway as well as the value of the ten largest projects currently underway in GCC countries in order to highlight and diagnose a country's progress with capital expenditures, which will contribute to achieving sustainable development goals. Second, this paper identifies the construction spent per segment in each country to determine the concentration of capital expenditure within any sector. Third, it presents the value and ranking of both the national and trade account indicators for each GCC country to reveal their economic of commercial levels and identify their public finance indicators. Fourth, it will present a recommended investment strategy regarding the core scenario projections of GCC's long-term economic growth in addition to presenting the value of planned, un-awarded GCC projects by sector and country. Finally, this paper will present the statistical impact of both indicators, which includes eight public finance variables and two investment project development variables.

Previous literature has focused on determining the general financial impact on the economy of individual countries in regard to certain social, environmental, economic, and technological variables; however, there is a gap in research regarding the diagnosis and classification of investment projects in regard to strategies for the development of economic sectors to achieve sustainable development goals. It is thus imperative that all countries work toward to achieve sustainable goals. The importance of this specific study is highlighted by the fact that it focuses on a sensitive global region that is rich in resources and wealth, comprised of, namely, the six Gulf Cooperation Council (GCC) countries (Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman), whose industrial, service, and financial sectors are considered an important indicator of developing economic sectors and the ability to create projects that contribute to the influence of developed countries.

The main contribution of the current study involves addressing this research gap by analysing the impact of public finance indicators on the value of investment projects, which can help economic sectors achieve sustainable societal development goals. This study is one of the first studies to be conducted on GCC countries, which have a significant impact on both the rest of the Middle East and developed countries, increasing the competitive advantage in all economic sectors that could improve the global classification of countries by influencing the success of local and foreign markets.

The paper is structured as follows: the introduction discusses the development of public finance and investment projects; section one presents the literature review; section two is comprised of the methodology, describing the model-based structural approach based on the literature review and analysis, study design, data sources, and method of collection; the next section presents the empirical results and engages in a discussion; and, lastly, the conclusion describes the policy implications.

1. Development of public finance and investment projects

Huemann, Keegan, and Turner (2007) have argued that governments, through the public finance sector, use funds to engage in industrial activities that promote macroeconomic activities within the country. However, governments try to allocate resources and distribute income to different parties by spending with the overall aim of income growth (Geraldi, 2009).

Measuring the public performance sector is essential for economic growth in all countries. Many public institutions have been recruited to ensure the transparency of public decisions, use of public funds, and performance enhancement (Hwang et al., 2013). In practice, public finance can highlight several obstacles and challenges, including identifying appropriate performance indicators and measures and understanding how to implement a performance management system (Mackowiak, 2007).

The challenges of implementing investment projects within the public finance sector have become more apparent in recent years, especially after the financial crises of 2008, which created a budget deficit for most countries (R. Young, M. Young, Jordan, & O'Connor, 2012). This has caused countriesin the world to create different strategies that depend on their available resources and the potential to intensify efforts their efforts in nation-building (Kostalova, Tetrevova, & Patak, 2015).

Today, the wise leadership of governments is a major challenge, with selected project quality now critical in establishing a strong societyand database for the future (Loayza et al., 2007). Specifically, the environment is a major challenge in regard to fiscal policy that can affect the operations of public finance, economic growth, and achievement of community well-being (Fatas & Mihov, 2001). Furthermore, a country's budget is the main component in determining its expenditure priorities, including environmental and political constraints (Johansson, 2016). Fiscal policy will have a negative impact if investment spending is managed improperly (Cournède, Goujard, & Pina, 2013).

The measurement of government performance is a difficult task in the absence of clear goals regarding the establishment of a country's institutions (Brys, Perret, Thomas, & Reilly, 2016). The lack in measurements of product quality and effectiveness can lead to weaker

information systems, which are necessary for effective production (Mupunga & Le Roux, 2014). However, modern performance measures in the public sector depend on the five Es (economy, efficiency, effectiveness, environment, and equity) (Hindriks & Myles, 2004), which have been developed to expand upon the 3 Es (effectiveness, efficiency, and economy).

The investment project is the cornerstone of a country's development. Without a clear map of the project showing how it is prepared and implemented, failure can occur in investment projects growth (Kostalova et al., 2015). Plans should thus be made for projects that can be inserted into the framework of a country's policies (Kostalova et al., 2015). Youker (1989) and Johansson (2016) argue that some developed countries have succeeded in developing investment projects, while emerging countries, including the GCC countries, still exhibit weaker creation of project plans due to factors such as inefficient planning and poor management of the public budget at the macro level (Arnold et al., 2011). Several studies have analysed the project cycle and the financial and economic methods, such as those by Mupunga and Le-Roux (2014), Johansson (2016), and Young et al. (2012).

The selection of a project's work team must try to ensure that technical errors can be quickly managed if they should occur (Kouretas & Vlamis, 2010). Thus, there are some non-economic resources that should never be overlooked, such as the human element that plays a key role in project success (Afonso, Schuknecht, & Tanzi, 2006). There are also important political, cultural, and social aspects that must be taken into account in order to avoid risks, such as the preparation and implementation of projects and predictions of environmental and economic changes (Masengo, 2011). It is also necessary to identify financial sources that are less costly and cannot affect the pricing processes following total cost estimation (Youker, 1989).

Mupunga and Le-Roux (2014), Bloch and Fall (2015), and Alosgoskoufis (2012) have all mentioned that the inability to evaluate investment projects can also lead to failure. The project plan is also implemented later, causing poor financial and economic reports on investments projects.

2. Literature review

Analysing the efficiency of the public sector is difficult due to the complexity of measurement and data quality (Hindriks & Myles, 2004). Alfonso et al. (2006) argued that one of the challenges in measuring and comparing public finance sector indicators is the lack of a single theoretical approach that accurately and unambiguously defines the scope of a country's procedures and the differences arising between public sectors as a result of its size, structure, and scope.

Johansson (2016) explains that political organizations also play an important role in shaping the general financial systems of governments in addition to the demographic and geographical characteristics of individual countries. The various forms of institutional and financial decentralization can also affect public finance indicators, thus complicating the ability to measure and compare different public sectors. Furthermore, any assessment that does not take a country's characteristics into account could lead to erroneous conclusions and an overall difficulty in measuring the efficiency of the public sector (Mupunga & Le Roux, 2014).

Ozak (2018) explains that technology is play a vital role on industry sector and economic development which decrease the distance between countries and improve the innovative productivity. Additionally, Abdi et al. (2018) pointed out that creativity in economic growth sectors comes from the integration of competitive value and knowledge, since it aids the government in making suitable financial decisions to build economic sector.

The global financial crisis of 2008 also contributed to an economic recession in most countries, which then resulted in a sharp increase in public debt and weak public financial indicators (Kostalova et al., 2015). Furthermore, public spending has been shown to have an impact on the distribution of growth and income into multiple channels. For example, it can enhance human and physical capital, creativity, and health (Johansson, 2016). Ali and Wang (2018) explain that foreign investment is complementary to domestic investment, which requires all governments to develop policies governing this relationship, especially in the long term. Alam, Uddin, and Yazdifar (2019) argue that the institutional environment plays a prominent role in the innovation process, which is reflected positively through the external environment that affects investment.

Social protection for challenges like unemployment and well-being strongly supports the redistribution of resources and the sharing of risks to reduce inequality (Alfonso et al., 2006). General government spending is essential in making decisions based on future growth, shaping a country's policies to allow for comparison, achieving competition among countries, and improving their economic classification (Hindriks & Myles, 2004). Furthermore, government debt reflects the financial condition of a country's assets and determines whether it faces major financial risks or delays in achieving its sustainable development goals (Bloch & Fall, 2015). Dincer (2019) argues that government corruption affects the long-term profitability of organizations and reflects negatively on investments, while Mentel, Brożyna, and Szetela (2017) evaluate the effectiveness of investment funds, revealing their effectiveness in terms of economic development and growth of government projects.

Government expenditure and revenue are two complicated components involved in the formation of the business cycle (Masengo, 2011). To obtain a measure of these expenditures, a series of product prices must be obtained to explain the mechanism and pricing methodology used in order to illustrate their structure (Cournède et al., 2013). The structure of government revenue plays a prominent role in improving the economic performance of a country through the development of a flexible fiscal policy (Arnold et al., 2011).

Brys et al. (2016) note that taxes collected from both individual and institutional income determine the long-term growth of a country more fully than taxes obtained from consumption, which, overall, promotes increased environmental and social growth. Biesenthal and Wilden (2014) argue that the debt-energy scale is important for determining the financial resources involved in production, exports, foreign currencies, and debt. Moreover, a country can determine its economic relationship with other countries, which can be measured based on sustainable development goals. Ivanová (2017) notes that it is difficult for small- and medium-sized enterprises to access external sources of funding that support the growth of government financial indicators, while Di Berardino, D'Ingiullo, and Sarra (2017) explains the determinants of productivity and their effects on economic growth, since distribution trade also affects productivity growth.

Aktas and Tiftik (2013) point out that it is necessary to study three variables, namely, finance, landscaping, and environment, to analyse the country solvency index. Based on these variables, governments can determine a general financial strategy and identify the best path for increasing revenue and reducing expenses. Mupunga and Le-Roux (2014) point out those general financial indicators is dynamic, changing in response to environmental, social, and political variables. This requires analysing changes in the history of a country's public debt. Furthermore, the efficiency of public finance performance indicators determines the direction of investment and its potential growth (Arnold et al., 2011). Masengo (2011) argues that government revenue should be evaluated against public debt, suggesting that domestic debt may increase due to mismanagement of local resources, especially domestic production, and thus could impede sustainable development and effect fiscal policies in terms of government revenue collection.

In recent studies, Davidaviciene, Raudeliuniene, Vengriene, and Jakubavicius (2018) argue for the need to adopt an e-government system that regulates investment practices more accurately. Khan, He, Kaleem, Akram, and Hussain (2018) propose a model for addressing the budget deficit and the investment gap. Moreover, Alińska, Filipiak, and Kosztowniak (2018) have found that the government is responsible for achieving sustainable development in terms of establishing the industrial sectors of a society and achieving economic growth. Lovre, Ivanović, and Mitić (2017) indicate that the intervention of governments in driving economic development is important in several countries for determining the efficiency of public sector operations.

An analysis of these previous studies indicates that most focus on how measuring the performance of public finance is difficult due to the presence of social, cultural, and environmental factors that interfere with its requirements, thus making it difficult to measure. The need to take into account electronic government as a measure of accurate public finance operations is also often mentioned. Additionally, it is frequently noted that high indebtedness negatively affects the public finance indicators. Moreover, the efficiency of the administrative system can affect public finance indicators and the success of investment projects. Additionally, countries' tax systems significantly determine implementation capabilities of investment projects.

This study revealed the necessity of developing understanding regarding the investment project development situation in GCC countries in order to establish the foundation for sustainable development in the future. This has become, in recent years, inevitable; however, these investment projects have established their own duration requirements and large capital spending, which leads to the mishandling of a country's increase in debt without return on real gross domestic product (GDP). This study aims to develop descriptive hypotheses for how to classify these GCC countries within the framework of the development of investment projects and determine both the present and future value of these projects and their corresponding strategies. It also focuses on addressing the gap in knowledge of investment sectors, which countries aim to strengthen and consider the key to the success of investments. It is the future investment projects that determine a country's long-term strategy in regard to GDP, allowing for the identification of a sustainable development strategy. This study intends to address the aforementioned research gap and act as an extension of previous studies, clarify-

ing and testing the empirical hypotheses related to the impact of public finance indicators on value investment projects in order to develop sustainable development in GCC countries.

3. Methodology of study

3.1. Study design

The paper was designed as a comparative quantitative empirical study to analyse public finance indicators of two national proxies and trade accounts on the value of investment projects as proxies of the Gulf Cooperation Council (GCC), which includes the UAE, Qatar, Saudi Arabia, Kuwait, Bahrain and Oman for the period of 2011–2017.

3.2. Data sources and method of collection

Data was collected from the International Monetary Fund (IMF, 2018) and Middle East Economic Digest (MEED, 2018b) from 2011–2017 and was used to indicate dependent and independent variables in order to measure the impact of public finance indicators on the value of investment project development within the framework of a comparative study on GCC countries.

3.3. Hypotheses and empirical model

This study used an empirical model to test four main hypotheses:

HO-1: There is no statistically significant impact of national account indictors on the total value of projects planned or currently underway.

HO-2: There is no statistically significant impact of trade indictors on the total value of projects planned or currently underway.

HO-3: There is no statistically significant impact of national account indictors on the value of the ten largest projects currently underway.

HO-4: There is no statistically significant impact of trade indictors on the value of the ten largest projects currently underway.

From these hypotheses, it can be seen that independent variables expressed by the public finance indictors are divided into two proxies: national accounts measured by six variables and trade accounts measured by two variables. The study explained two dependent variables total value of projects planned or underway and the value of the ten largest projects currently underway in order to measure the value of the investment project development proxy.

This study calculated the public finance indicators based on six variables conducted on NAI_{it-1} and two variables conducted on TI_{it-1}, as mentioned in equations 1 and 2:

$$NAI_{it-1} = f(\sum_{i=1}^{n} RGDP_{it-1} + \sum_{i=1}^{n} ROGDP_{it-1} + \sum_{i=1}^{n} RGDP_{it-1} + \sum_{i=1}^{n} GNS_{it-1} + \sum_{i=1}^{n} CPII_{it-1} + \sum_{i=1}^{n} CAB_{it-1}), \quad (1)$$

$$TI_{it-1} = f(\sum_{i=1}^{n} VOIGS_{it-1} + \sum_{i=1}^{n} VOEGS_{it-1}), \quad (2)$$

where variable (*f*) refers to function; national account indicators (NAI_{it_1}) included six variables, Real GDP ($RGDP_{it\_1}$), Real Oil GDP ($ROGDP_{it\_1}$), Real Non-Oil GDP ($RNOGDP_{it\_1}$), Gross national savings (GNS_{it_1}), CPI Inflation ($CPII_{it\_1}$), and Current account balance (CAB_{it_1}); trade account indicators (TI_{it_1}) include two variables, volume of import goods and services ($VOIGS_{it\_1}$); and volume of export goods and services refers to ($VOEGS_{it\_1}$). Some of these variables have been mentioned in previous studies, such as those by Alosgoskoufis (2012), Kouretas and Vlamis (2010), and Mupunga and Le Roux (2014). Real gross domestic product (GDP) refers to the economic measure that expresses the value of goods and services during a fiscal year adjusted for the inflation index, while Real Oil GDP refers to the value of products and services related to oil, with the opposite being true for Real Non-Oil GDP. Furthermore, gross national saving refers to government, individual, and foreign savings that reflect remaining profit after deducting expenditures from the total income. The Consumer Price Index (CPI) refers to the weighted average of the price of goods and services.

The current account balance is considered an important indicator in measuring the economic performance of countries and reflects the balance of trade and payments. Current account items vary widely based on the macroeconomic policy analysis of individual countries. The policy of analysis is included in several economic activities, such as income distribution, income spending, and investment financing. The volume of goods and services imported and exported measures changes in ownership of resources by country and extent of variation with other countries' economies. It also expresses the net trade between imports and exports.

One reason for choosing the independent variables of the public finance indicators in the current study was that GCC countries exhibit strong trade mobility in terms of the volume of exported and imported goods and services. This trade movement defines these countries' international trade index and is considered an important factor in the balancing of payments, which, in turn, determines the revenue from exports and the cost of imports, allowing for a margin of difference between the two in order to further establish investment projects in each country.

The second indicator is national account, which also measures public finance. This measure involves one of the most important components of budget country, which the governments depends on these budget in terms of assessing a country's economy through gross domestic product. Because GCC countries are considered oil countries, interest in the GDP index of oil and non-oil revealed the importance of these two sectors, which determined both their sources of income and the contribution of the non-oil sector in establishing a country's institutions. In addition, focus was placed on the national savings variable and surplus size, which contributed to the promotion of investment projects and determined the level of individual's consumption in addition to balancing each country's inflation.

The quantitative equation used to test the first and second hypotheses is as follows:

$$TVPPOU_{it} = a + \sum_{i=1}^{n} \beta_1 NAI_{it-1} + \sum_{i=1}^{n} \beta_2 TI_{it-1} + \varepsilon_{it}, \quad (3)$$

while the other quantitative equation used to test the third and fourth hypotheses is as follows:

$$VTLPUC_{it} = a + \sum_{i=1}^{n} \beta_1 NAI_{it-1} + \sum_{i=1}^{n} \beta_2 TI_{it-1} + \varepsilon_{it}, \quad (4)$$

where two dependent variables refer to the symbol TVPPOUit, which refers to the total value of projects planned or currently underway in the six GCC countries at (i = 1… N), and time and dimension (t = 1, …, T). The variable of (a) refers to the constant intercept of the model. The symbol of $VTLPUC_{it}$ refers to the value of the ten largest projects currently underway, while the two independent variables related to NAI_{it-1} refer to the national account indicators, TI_{it-1} refers to the trade indicators, and ε_{it} represents random error with the expectation of 0 and a variance of σ^2. Beta ($\beta_{1,2}$) refers to the slope of a line in a regression equation.

4. Empirical results and discussion

4.1. Descriptive analysis and discussion

Table 1 shows the average total value of projects planned or currently underway as well as the ranking of the six GCC countries throughout the period of 2011 to 2017. The results indicate that Saudi Arabia was ranked first with 1.7 trillion USD and the UAE was ranked second with 727 billion USD, while Bahrain was ranked last with 55 billion.

These results indicate that Saudi Arabia has achieved a major economic renaissance in recent years, which is reflected positively in its investment projects. Investment has become attractive due to the provision of legal and marketing facilities which has led to more investment contracts with other Gulf countries as well as with its allies in European countries and the United States despite the low prices of oil in the last ten years. Some GCC countries, especially Saudi Arabia and the UAE, have been able to inject money into the market in order to improve growth rates and infrastructure development of GCC countries. In mid 2018, both the UAE and Saudi Arabia signed a strategy agreement aimed at creating an exceptional model of integration and cooperation between the two countries through the implementation of joint strategic projects for the happiness and prosperity of their citizens. The strategy is comprised of three main axes: economic, human, and political.

Table 1. Total value of projects planned or underway and rank (TVPPOU) US$-B, T (MEED) (source: Middle East Economic Digest (MEED) Projects (2018b) From 2011–2017. Source of Rank: author)

Value of Investment Projects Development	Average Rank between 2011–2017					
Countries / GCC	UAE	Qatar	Saudi Arabia	Kuwait	Bahrain	Oman
TVPPOU	727B	276B	1.7T	202B	55B	150B
Rank –GCC	2	3	1	4	6	5

Table 2 shows the average value of the ten largest projects currently underway in the six GCC countries during the period of 2011 to 2017. The results show that Saudi Arabia was ranked first and was followed by the UAE, while Bahrain ranked last. Furthermore, it can be seen that previous arrangement of the planned and current projects exhibited the same basic arrangement in the project catalogs, through which all countries sought to promote the development of their activities and investment projects as a long term-plan, aiming to make the globally competitive. Both the UAE and Saudi Arabia have been attempting to improve their citizens' experiences with government services, which have included launching a housing welfare program, establishing a policy to empower the banking sector and establishing an investment fund to invest in small- and medium-size enterprises in partnership with the private sector.

Furthermore, both countries aim to strengthen the integrated economic system and identify innovative solutions for the optimal utilization of existing resources. The economic focus is placed on services, financial markets, logistics, infrastructure, renewable energy, entrepreneurship, external partnerships, and government development. The UAE and Saudi Arabia have majorly considered the human and cognitive axes, which aim to build an effective and integrated educational system based on the strengths of the two countries in order to produce generations of highly qualified citizens by focusing on higher education, research cooperation, and public and technical education. It also focuses on the cooperation among the political, security, and military axes, thus enhancing the security and status of the two regional and national countries.

Table 2. Value of ten largest projects underway in the GCC countries and rank (VTLPUC) (US$ Billion) (source: Middle East Economic Digest (MEED) Projects (2018b) From 2011–2017. Source of Rank: author)

Value of Investment Projects Development	Average Rank between 2011–2017					
Countries / GCC	UAE	Qatar	Saudi Arabia	Kuwait	Bahrain	Oman
VTLPUC	29.8	16.3	52.7	12.39	2.13	9.96
Rank – GCC	2	3	1	4	6	5

Table 3 shows the average construction spends per segment of GCC countries as an indicator of the status of investment projects during the period of 2011 to 2017. The results show that the UAE, Qatar, Bahrain and Oman exhibited a high, mixed-use segment at 36%, 37%, 72%, and 36%, respectively. However, Saudi Arabia was high in the residential segment at 29%, and Kuwait was high in the education segment at 28%.

These results further indicate that Saudi Arabia has been focusing on the development of residential real-estate projects to significantly increase the size of its population, while Kuwait has focused more fully on the education sector, which it considers essential for development and indirectly reflecting on economic sectors that will build society in the future. Nowadays,

these focused sectors have led these GCC countries to alter their investment policies. For instance, investments within the GCC largely focus on keeping up with the rapid growth of domestic demand (i.e., electricity, water, transport and construction); however, this approach has not kept up with the growing domestic demand in other sectors. For example, the growing demand for fossil fuels in domestic markets threatens the competitiveness of the GCC economies. Furthermore, now that policymakers have identified renewable energy targets, pledges made by governments of countries such as Saudi Arabia, United Arab Emirates, Kuwait, and Qatar have begun to support research and development, placing a greater emphasis on renewable energy technology.

The GCC countries possess the basic materials for becoming more active in the global clean energy arena and developing new, clean technologies. The challenge for these countries involves being more active in energy technology innovations, diversifying the prospects of their energy industries, and re-establishing the competitiveness of their global energy sectors.

Table 3. Construction spend per segment (source: Middle East Economic Digest (MEED) Projects (2018b) From 2011–2017)

Construction spend per segment	Average Rank between 2011-2017					
Countries / GCC	UAE	Qatar	Saudi Arabia	Kuwait	Bahrain	Oman
Mixed Use	0.36	0.37	0.12	0.04	0.72	0.36
Earthworks					0.02	
Retail		0.11			0.06	
Hospitality & Leisure	0.08	0.18	0.11	0.05	0.05	0.10
Healthcare	0.05	0.03	0.21	0.13		0.03
Commercial	0.11	0.09	0.07	0.13		0.15
Education	0.03	0.04	0.12	0.28		0.04
Residential	0.33	0.10	0.29	0.20	0.14	0.20
Cultural	0.04	0.03	0.09			
Public		0.05		0.16		0.07

Table 4 shows the public finance indicators measured by the average of six national account indicators of the GCC countries during the period of 2011 to 2017. The results show that the UAE and Qatar have a high value of indicators as national accounts in most variables of the study except the current accounts balance, gross national savings and CPI inflation where Kuwait is the ranked first. Meanwhile, Bahrain is ranked last in real GDP and gross national savings, while Oman is ranked last for most of the other variables apart from the two aforementioned. These results show that economic indicators vary depending on the size countries. Smaller countries such as Qatar and the UAE have led many achievements in infrastructure development Moreover; Dubai has achieved remarkable performance and growth in all economic sectors, especially in infrastructure, while Kuwait largely contributed to the consumption index, resulting in a flow of money into the market that helped further develop the country.

Table 4. National accounts indicators of GCC countries and rank (source: International Monetary Fund, World Economic Outlook Database (2018) From 2011–2017. Source of Rank: author)

Public Finance Indicators	Average Rank between 2011–2017					
Countries / GCC	UAE	Qatar	Saudi Arabia	Kuwait	Bahrain	Oman
Real GDP	4.08	5.22	4.05	3.71	3.18	3.38
Rank – GCC	2	1	3	4	6	5
Real Oil GDP	3.78	2.10	3.60	3.64	2.02	1.55
Rank – GCC	1	4	3	2	5	6
Real Non Oil GDP	4.41	8.87	4.40	3.91	3.52	5.27
Rank – GCC	2	1	3	4	5	6
Gross national savings	37.23	53.51	45.12	55.64	28.39	34.34
Rank – GCC	4	2	3	1	6	5
CPI Inflation	2.25	2.61	3.00	3.44	2.40	1.91
Rank – GCC	5	3	2	1	4	6
Current account balance	9.88	17.58	8.08	25.54	2.51	–20.60
Rank – GCC	3	2	4	1	5	6

Table 5 shows public finance indicators measured by average trade indicators of the GCC countries between the periods of 2011 to 2017. The results illustrate that the UAE ranks higher in regard to volume of imported and exported goods and services in GCC countries compared to Qatar; however, the country ranking last was, once again, Bahrain. These results explain the size of the agreements between Qatar and the UAE, which improved the trade balance and reflected positively on the balance of payments of each country. The general shift of GCC countries toward green, environmentally friendly productivity has led to an increased focus on diversifying their exports in place of solely relying on oil as the main source of state income due to the recent decline of oil prices.

Table 5. Trade indicators of GCC countries and rank (source: International Monetary Fund, World Economic Outlook Database (2018) From 2011–2017. Source of Rank: author)

Public Finance Indicators	Average Rank between 2011–2017					
Countries / GCC	UAE	Qatar	Saudi Arabia	Kuwait	Bahrain	Oman
Volume of imports goods and services	12.24	11.10	6.24	7.00	–4.90	10.04
Rank – GCC	1	2	5	4	6	3
Volume of exports goods and services	12.07	5.24	2.70	3.28	2.34	4.55
Rank – GCC	1	2	5	4	6	3

Furthermore, in recent years, the GCC countries have been rapidly changing in terms of economic and geographic factors as well as social factors. Since 1998, the GCC's real GDP

has expanded by an annual average of 5% and a cumulative total of 65% (IMF, 2011–2017), illustrating that population increased as these countries became interested in the export of oil and gas.

They also attempted to invest in establishing major infrastructure projects as well as tourism and service sectors. As the US economy stalled, Gulf investors began diversifying their assets in Asia and Africa as well as the Gulf region itself. The Gulf countries are consistently attempting to enhance their investments and create ties with all countries in the world. Moreover, countries have been increasingly dependent on remittances from foreign workers to increase the activity of global financial markets, since the recent drop in oil prices have begun to impact countries that work together to support economic growth.

Table 6 shows that GCC countries are facing major competition from other countries by creating similar trade and industrial ties. There has also been increasing competition arising in certain sub-industries and emerging services, including knowledge-based industries. However, energy-intensive manufacturing within the GCC will maintain a competitive edge due to the region's natural energy advantage.

Table 6. The Core scenario projections of GCC long-term economic growth (source: EIU long-term forecasts, The Economist Intelligence Unit (2018) available at: https://gfs.eiu.com/)

Indicator	2005	2010	2015	2020
Total GCC Real GDP, US$m	616,000	788,000	992,000	1,237,000
% Annual Growth, 5-year Period		5.3	4.8	4.4
Real GDP Per Capita, US$	18,000	19,000	20,000	23,000
% Annual Growth, 5-year Period		1.4	1.6	2.0

Table 6 shows that the GCC's share of global economy is expected to grow steadily from now until 2020, and growth will be slightly higher than overall global growth with an average annual average of 4.5%.The prices of oil between $50 and $60 a barrel will provide sufficient government revenues to promote investment in infrastructure and human capital, although these improvements can also be sustained with low oil prices in the case of sufficient foreign investment in addition to a diverse economy from other industrial sectors.

It is expected that the GCC countries will continue the process of economic diversification in accordance with the long-term trend with foreign alliances to reach the modern industry as shown in Table 7.

These countries have a market share of oil suitable to build their economies and it is possible to exploit some sectors of tourism attract income for these countries. They also aim to diversify investments in Asia and Africa in search of higher returns. These countries are also working to attract the least expensive labour in an attempt to build the economic structure, trying to keep these ratios unchanged during the past years while relying on oil exports. Current investments are based on the reform of the educational systems in the GCC and encouraging participation in the workforce is still in its early stages. These will have an impact on the next generation of GCC graduates, but they will not address the cost gap. Employers are also encouraged to employ expatriate workers. As a result, large-scale GCC imports of labour and remittance exports will remain one of the major exchanges with the rest of the world.

Table 7. Value of planned, unawarded GCC projects by sector/ $2tn project pipeline (source: MEED Projects, GCC Projects, Break bulk Middle East, 2018a)

Sector	Amount
Chemical	$83bn
Construction	$1,459bn
Gas	$79bn
Industrial	$29bn
Oil	$108bn
Power	$224bn
Transport	$454bn
Water	$56bn

Government efforts to encourage foreign investment in the GCC countries enhance the tourism infrastructure and are an important force in trade operations. Table 8 indicates that Saudi Arabia has a large value of projects around $1,243bn. The value of commercial enterprises in the GCC was US $592 million in 2017 and US $3.613 million in 2018. The UAE remains the most attractive retail market in the region with strong growth opportunities outside of Dubai. According to industry experts, the increasing focus on consumer convenience in the market is an important factor in improving levels (IMF, 2011–2017).

Table 8. Value of planned, unawarded GCC projects by country / $2tn project pipeline (source: MEED Projects, GCC Projects, Break bulk Middle East, 2018a)

GCC Countries	Amount
Bahrain	$69bn
Kuwait	$172bn
Oman	$135bn
Qatar	$158bn
Saudi Arabia	$1,243bn
UAE	$715bn

In view of long-term fluctuations in oil prices, the GCC region has witnessed an unprecedented development in its transportation network as population growth and high tourism rates will drive the growth of the road transport infrastructure in the coming years. The transport infrastructure projects are expected to provide the region's countries with the creation of much needed jobs and economic stimulus, leading to an upward trend in the construction market in the GCC in the coming years.

GCC governments are increasingly turning to public private partnerships (PPPs) as a way to reduce the budget deficit and develop infrastructure in a volatile oil market. Kuwait and the UAE are the most promising markets, with both recently adopting a legislative framework for public-private partnerships. The government of Saudi Arabia has also decided to implement a number of transport infrastructure projects based on the model of public-private partnership.

Through its projects taking place in the cities of Dubai and Abu Dhabi, the UAE seeks to become a market leader through build infrastructure. Saudi Arabia plans to capitalize upon its geographic advantage by developing itself as a major hub that links the three continents of Asia, Europe, and Africa.

Bahrain plays a vital role in economic growth by investing heavily in the road network and has made several structural changes. Furthermore, it has received investments from the GCC as part of the GCC development fund package for the transport sector. The GCC governments are initiative to improve the urban infrastructure in Bahrain. Moreover, Oman has ensured that its transportation matrix will be sufficient to support the logistical needs of its rapidly diversifying economy both locally and regionally. The country has also invested billions of dollars in its transportation sector, which continues to profit through ongoing projects, like expanding the roads.

4.2. Statistical analysis and discussion

Table 9 shows the ordinary least square (OLS) as a simple linear regression model. This model used public finance indicators to show impact on the total value of projects planned or currently underway in the GCC countries during the period of 2011–2017 on both the two proxies' national accounts indicator and the trade indicator which include eight public finance indicators.

Only two variables, real GDP and real non-oil GDP of national accounts, and one variable pertaining to volume of the exported goods and services of trade accounts had a significant impact on the total value of projects planned or currently underway in the GCC countries at a 5% and 1% significant level, exhibiting a high correlation between 85% to 97% and an R^2 value between 72% to 95%, which explains the independent variables' effect on the dependent variable.

These results explain that the GCC countries are working to increase the volume of their exports, which explains their rapid economic growth, which has been revealed recently in these countries as being result of flexible fiscal policies and attempts to attract foreign investments. This can also be explained by the establishment of the Saudi-UAE Coordination Council, which strategically addresses challenges and relies on the strengths of both countries. Furthermore, the size these economies countries' is worth one trillion dollars, "the largest in the Middle East", with their exports making them among the top ten exporters worldwide ($700 billion), while their volume of non-oil trade is $24 billion and the volume of imports was approximately $550 billion in 2017 (IMF, 2011–2017). The collapse of oil prices in 2014 and 2015 could have provided an opportunity for GCC countries to focus more on using green economic strategies and maximizing energy productivity in general in preparation for the global shift toward sustainable energy sources, given their huge hydrocarbon resources.

The GCC's use of clean energy as a tool to increase their productivity contributes to increased economic growth and competitiveness in domestic and foreign markets. Germany, Japan, Brazil and Mexico are currently at the forefront of global energy innovation. Meanwhile, GCC countries were behind in this domain from 1980 to 2014, but the past decade

has witnessed a significant growth in terms of clean energy and infrastructure programs. This growth is also apparent in the development of infrastructure supported by efficient work to achieve sustainable development and the introduction of advanced public transport systems. All these sectors reflect the improvement of the public finance indicators.

The results of this study were consistent with Geraldi (2009) who argued that economic growth can improve the gross domestic product of countries and require proper investment by governments. The structure of institutions and the decentralization of financial decision-making greatly affect the flexibility of decision-making in regard to exports, which are considered indicators of public finance (Mupunga & Le Roux, 2014).

The flexibility of fiscal policy and the structure of government revenue, as mentioned by Arnold et al. (2011), reinforce certain government decisions pertaining to diversifying investment. This has become apparent in the improvement of domestic exports from non-oil activities. Moreover, gross domestic product is a critical variable dependent on public spending of infrastructure, which enhances economic growth by distributing income into multiple channels (Johansson, 2016).

Mupunga and Le-Roux (2014) find that general financial indicators are dynamic and change in response to environmental, social, and political variables, while Cordoba and Kohoe (2000) point out that the optimal response to the formation of the balance of trade accounts leads to a real increase in the value of GDP. Insel and Kaykçi (2013) argue that inflation, the real GDP growth rate, the investment to GDP ratio, and the saving to GDP ratio all negatively affect the trade balance deficit, while Chinn and Prasad (2003) focus on the financial development of the market through the improvement of public indicators, such as GDP, that will affect project investments.

Borensztein et al. (1998) find that investments are increasing both domestically and abroad through the improvement the GDP index. Meanwhile, Moraru (2013) finds that investment projects of infrastructure increase not only because they improve GDP but also because they improve the productivity index, employment rate, and business development. Moreover, the second indicator of the volume of imports and exports and how it contributes to the improvement of the investment indexis largely discussed in the previous literature review. Chen (2009) highlights the fact that technology significantly contributes to increasing export volume.

Asam, Fosu, and Ndung'u (2013) focus on international trade, which revives economic growth by attracting technology and transferring it to different countries to stimulate production, which is directly reflected in infrastructure investments. Furthermore, imports play a negative role in economic growth, which affects financial sources, since the increase in imports leads to incentives to create alternatives within the domestic market, which, consequently, stimulates domestic investment (Mishra, 2012).

Table 10 shows the simple regressions of public finance indicators in regard to the value of the ten largest projects currently underway in the GCC countries on two proxies national and trade accounts measured public finance indicators during the period of 2011–2017. Only three variables of the national accounts proxy were found to be significant at a 5% significance level: gross national savings, CPI inflation, and the current account balance, which exhibited a high correlation between 83% and 87% at an R^2 between 70% and 75%.

Table 9. Simple regression of public finance indicators on total value of projects planned or underway (source: OLS regression analysis test from SPSS program. Denote *Sig at p <0.10 ** Sig at p< 0.05 *** Sig at p< 0.01) (TVPPOU)

Public Finance Indicators	Average Rank between 2011-2017 GCC Countries					
	R	R^2	T-Value	Sig	Un standardized Coefficient	
					St-Error	B
National Accounts Indicators						
Real GDP	0.852	0.726	3.255	0.031**	94.253	306.761
Real Oil GDP	0.262	0.069	–0.543	0.616	126.060	–68.501
Real Non Oil GDP	0.858	0.736	3.343	0.029**	34.180	114.273
Gross national savings	0.341	0.116	0.726	0.508	11.225	8.146
CPI Inflation	0.020	0.000	–0.040	0.970	237.273	–9.376
Current account balance	0.282	0.079	0.588	0.588	7.909	4.648
Trade Indicators						
Volume of imports goods and services	0.590	0.348	1.463	0.217	16.795	24.566
Volume of exports goods and services	0.976	0.952	8.886	0.001***	7.893	70.140

Previous results have explained that GDP and exports are the source of a country's power and are key to real economic growth, which explains why actual projects have begun to reflect actual infrastructure by increasing the consumption ratio evident in previous indicators. The GCC countries are trying to move from the stage of cooperation to the Union, which could pave the way toward the completion of major strategic projects to help achieve economic and social integration through the establishment of a common Gulf market.

However, GCC countries are currently trying to reach the stage of unification of commercial and economic laws, emphasizing the need to rehabilitate the Gulf citizen and develop his capabilities. The GCC also identified a clear strategy for development based on the diversification of economic activity and job-creation. Moreover, the GCC countries have witnessed strong non-oil economic activity, especially in the services sector, with the United Arab Emirates experiencing an increase in the share of non-oil exports from the total exports. However, there has been less growth in terms of the diversification of economic activity related to the perspective of fiscal revenue and nominal GDP as a reflection of high oil prices. Indeed, employment rates are still below the standard level of country despite the increase of expatriate labour.

These results are consistent with those of Masengo (2011), who noted that political, cultural, and social aspects are important for predicting environmental variables, which, in turn, reflect economic changes like CPI inflation. Mupunga and Le Roux (2014) mentioned that an assessment of infrastructure investment does not take into account national characteristics that can lead to difficulties in measuring the efficiency of the public sector. Another important element found by Brys et al. (2016) was that taxes can affect the current account balance

of individual countries and determine long-term growth more efficiently than taxes obtained from consumption. Johansson (2016) explained the important role of shaping general governmental financial systems as well as the demographic and geographical characteristics of individual countries.

The rapid growth of domestic and foreign investments has been significantly contributing to economic growth through the flow of capital and the transfer of technology between countries. Chinn and Ito (2007) identify the determinants of the current account balance and emphasise that the deficit in the current balance includes the domestic savings, national income, and growth of investment income, significantly affecting the size of investments granted by individual countries. Waliulah, M. Kakar, R. Kakar, and Khan (2010) argue that the current account balance refers to both short- and long-term perspectives, with each being determined according to the flexibility of a country's fiscal policy.

The governments in different countries in the world are further stress that public savings are also affected by the flexibility of the fiscal policy, which affects the size of investments in countries. Chinn and Ito (2008) highlighted an open economy market and found that industrial investment projects can be increased by measuring the performance of the public finance variables like national savings and consumption index. Meanwhile, studies like those by Tornell and Velasco (2000) focused on the fluctuation in inflation levels and how consumption has a greater impact on the exchange rate levels, which determines the size of investment projects in individual countries. Government spending is also an important indicator of economic growth in current accounts (Patricia & Izuchukwu, 2013).

Table 10. Simple regression of public finance indicators on value of ten largest projects underway in the GCC countries (VTLPUC) (source: OLS regression analysis test from SPSS program. Denote *Sig at p <0.10 ** Sig at p< 0.05 *** Sig at p< 0.01)

Public Finance Indicators	Average Rank between 2011-2017 GCC Countries					
	R	R^2	T-Value	Sig	Un standardized Coefficient	
					St-Error	B
National Accounts Indicators						
Real GDP	0.289	0.084	0.604	0.579	12.045	7.273
Real Oil GDP	0.399	0.159	0.869	0.434	8.373	7.280
Real Non Oil GDP	0.094	0.009	0.188	0.860	4.633	0.872
Gross national savings	0.841	0.708	3.114	0.036**	0.451	1.405
CPI Inflation	0.871	0.758	3.540	0.024**	8.158	28.882
Current account balance	0.838	0.702	3.071	0.037**	0.314	0.966
Trade Indicators						
Volume of imports goods and services	0.340	0.116	0.724	0.509	1.367	0.989
Volume of exports goods and services	0.177	0.031	0.359	0.738	2.473	0.888

Conclusions

The public finance system is the main tool used for financing government investment projects, building infrastructure for all economic sectors, and creating jobs to meet the needs of society. The investment projects that are created in a country must add value to gross domestic product. In this way, projects can be considered real value in society. On the other hand, invested projects have contributed to creating jobs that help society meet its needs and achieve social well-being.

In light of financial and economic development, all economic globalization societies focus on the fact that countries share technology in all fields, and, thus, the economy experiences various stages of growth and decline. This is relatively necessary for all countries, especially GCC countries, which possess much natural and industrial wealth that help them grow and remain competitive in this region.

The financial crisis in 2008 affected the economies of all GCC countries and led to their enhancement of their financial budget systems, thus increasing their awareness of the former in regard to how to distribute their wealth and allocate economic units. This cycle makes GCC countries consider ways in which to build investment projects of value under their actual and accurate budgets in order to benefit the welfare of society.

Many countries have yet to meet the fiscal goals of enhancing society due to the nature of systems and the poor distribution of income and resources among economic development investment projects. Governments in the GCC balanced between the revenue received and the expenses paid on long-term capital spending projects, avoiding a general budget deficit in light of a flexible fiscal policy despite possible and ongoing environmental changes.

GCC countries have established rich, appropriate budgets. Therefore, if they are optimally mined, they can achieve projects of value that are related to community welfare and encourage members of society to work efficiently and effectively. Because of the major economic wealth of GCC countries, these countries rank first among the Arab countries in terms of happiness indicators because these countries achieve social well-being in their societies. The World Happiness Reports (2018) classified the Gulf Cooperation Council (GCC) in that index as follows: United Arab Emirates, Qatar Saudi Arabia, Bahrain, and Kuwait. This strong classification contributes to improving a country's economic and financial indicators; however, a country's wealth is not the only factor involved in a society's. For example, Finland ranks first in the global happiness index despite its relatively modest overall wealth; however it exhibits a strong spirit of teamwork and efficient production levels, which contribute to its overall happiness.

This study aimed to assess the impact of public financial indicators and the value of developed investment projects within the framework of a comparative study of GCC countries. Data was collected from the International Monetary Fund and Middle East Economic Digest from 2011–2017. Public finance indictors were measured by two proxies, national accounts by six variables, and trade accounts by two variables. The value of the investment project development proxy was measured by two variables total value of projects planned or underway and value of ten largest projects underway.

The results indicate that Saudi Arabia and the UAE are ranked high in both proxies of investment project development. The simple regression results show that real GDP, real

non-oil GDP variables of the national account proxy, and the value of the exported goods and services variable of trade accounts proxy all have a significant impact on the total value of projects planned or currently underway. Furthermore, only three factors of the national accounts proxy, gross national savings, CPI inflation, and the current account balance, were found to have a significant impact on the value of the ten largest projects currently underway.

The primary conclusion of this study is that high levels of wealth can stimulate individual countries to further participate in investments through which their institutions are built upon. This high-income wealth of GCC countries positively increases the ability to classification of countries within the index of happiness; however, it is also necessary to also consider the productivity and labour spirit indexes to both maintain this wealth and improve public finance indicators. This study also found that governments should employ a flexible fiscal policy that works with the monetary policy in an integrated manner to improve public finance indicators, which could lead to increased project investment. Furthermore, it is important to note that the study period was limited due to the lack of sufficient data for the study sample before 2011and can be considered a limitation of the study. Finally, future studies are required that analyse the social and environmental factors affecting project development in regard to the dynamic environment and different government policies.

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