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Is Financial Development Having an Impact on Economic Complexity? Empirical study of Iraq

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Abstract: In recent years, the significance of economic complexity in raising a country's development level has been widely acknowledged. It is imperative for economies to enhance their level of product sophistication. The prevailing consensus posits that the pursuit of increased economic complexity is a fundamental strategy for achieving economic advancement. The imperative for all nations at present is to augment the degree of economic complexity. Several previous studies have conducted empirical analyses to estimate the factors that positively influence economic complexity. However, there is a lack of research studies that specifically examine the impact of financial development on economic complexity. Hence, the primary objective of this study is to empirically assess the relationship between financial development and economic complexity in Iraq during the period from 2000 to 2022. This study utilized Dynamic OLS (DOLS), Fully Modified OLS (FMOLS), and Canonical Cointegration Regression (CCR) methodologies to examine the empirical implications of financial development and several control variables, such as income, foreign direct investment, urbanization, and natural resources, on economic complexity. The study's findings suggest that the development of the financial sector plays a positive role in enhancing the economic complexity of Iraq. Likewise, economic growth, foreign direct investment, and urbanisation make positive contributions to the enhancement of economic complexity. However, the impact of natural resources on economic complexity is predominantly negative. Hence, it is imperative for the Iraqi government to undertake policy measures aimed at the development and enhancement of its financial system, with the goal of bolstering its industrial structure and augmenting product sophistication.

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1. Introduction

The concept of economic complexity (EC) refers to the knowledge that is embodied within a nation's production system (Hausmann et al., 2014; Hidalgo & Hausmann, 2009). The phenomenon of EC demonstrates the widespread presence and variety of exported goods (Nguyen & Su, 2021). The idea of economic complexity (EC) serves as a manifestation of the intellectual capital and inventive capacity that has been amassed within an economy. The category of economic complexity encompasses various elements of the manufacturing process, including competence, advanced knowledge, and capacities. In alternative terms, the concept of EC is characterized by the utilization of a manufacturing framework that emphasizes the acquisition of skills and knowledge, resulting in an optimal level of output (Balsalobre-Lorente, Nur, Topaloglu, & Evcimen, 2023). EC is considered a more suitable indicator for assessing economic sophistication in comparison to export diversification (Nguyen & Su, 2021). The transition of the economy towards the production of novel and intricate goods located at the core of the product space is intricately linked to the advancement of a more intricate economic system (Dung & Thanh, 2021). Electronic commerce (EC) serves as a means of linking the production of goods and services with industrial transformation, while also providing a metric for assessing the comparative variations in industry structure. The presence of a diverse range of manufactured goods and the extent of product diversity are indicative of a more intricate economy, as they reflect the utilisation of a wide array of skills and knowledge (Bashir et al., 2022).

The work accomplished by Hidalgo and Hausmann in 2009 is highly regarded in the field, as it establishes a foundation for understanding the significant role of economic complexity (EC) in driving the process of economic development. The scholarly literature widely acknowledges that Economic Complexity (EC) is a suitable methodology for assessing the developmental stage of an economy, as it provides insights into the production of more advanced exports (Nguyen & Su, 2021). Earlier researchers have acknowledged the significant contribution of EC to economic development. This includes increasing productivity or productive capacity (Sweet & Eterovic, 2019), reducing income inequality (Bandeira Morais, Swart, & Jordaan, 2021), addressing energy demand (Fang et al., 2021), promoting health benefits (Vu, 2020), improving environmental quality (Boleti, Garas, Kyriakou, & Lapatinas, 2021), and most importantly, fostering economic growth (Njangang, Asongu, Tadadjeu, & Nounamo, 2021).

The current collection of literature has documented numerous economic and socio-economic factors that have an impact on the level of electronic commerce (EC) within an economy. These factors include income level, internet penetration, economic uncertainty, urbanization, foreign direct investment, human development, and population density etc (Antonietti & Franco, 2021; Di Clemente, Strano, & Batty, 2021; Hoang, Chu, & To, 2023; Nguyen, Schinckus, & Su, 2020). However, there has been limited scholarly focus on the interrelationship between financial development (FD) and economic growth (EC). Financial development (FD) can be defined as a process that leads to enhancements in the efficiency, quality, and quantity of financial intermediation. Financial development (FD) can be conceptualized as the capacity of a nation's financial system to provide services that facilitate and enhance financial transactions among individuals and economic entities. This aspect is considered vital for a country's economic prosperity (Abdullah & Abbas, 2022). In his seminal work published in 1912, Schumpeter emphasized the crucial role of the financial market in driving economic progress. Consequently, financial development has become an integral component of the prevailing economic paradigm. The banking sector plays a crucial role in fostering economic growth by facilitating the equitable distribution of funds across key economic activity. The prevailing theory concerning the relationship between financial development (FD) and economic growth posits that a well-organized and clearly defined financial system plays a vital role in facilitating transactions, monitoring activities, reducing information costs, and efficiently allocating resources. These factors contribute to the enhancement of both human and physical capital, ultimately leading to an increase in the level of economic growth (Creane, Mobarak, Goyal, & Sab, 2004).

A well-developed financial system has the potential to reduce transaction costs and facilitate the specialisation of economic agents, due to the increasing complexity and diversity of products, as well as the necessity for advanced technical knowledge and new innovations in production. The intricacy of an economy necessitates the presence of knowledge-intensive and high-tech industries, which in turn demand substantial investments to foster innovation. There is a theoretical foundation supporting the notion that a robust and advanced financial market facilitates the execution of novel and innovative initiatives by mitigating costs, allocating limited resources, and effectively managing innovative projects (Njangang, Asongu, Tadadjeu, & Nounamo, 2021). This, in turn, contributes favorably to the diversification and complexity of the economy. According to empirical research conducted by Aghion, Howitt, and Mayer-Foulkes (2005), Levine (2005), and Hall and Lerner (2010), it has been determined that the growth of the financial system has played a role in promoting the diversification of enterprises' production structures through the provision of funding for their creative projects.

Therefore, in accordance with the preceding discourse, it is anticipated that there exists a positive correlation between EC and FD, as the presence of technical advancements and knowledge inside an economy's productive framework is linked to EC. Hence, it is imperative to comprehend the fiscal deficit (FD) and the level of economic expertise inside a nation (Kamguia, Tadadjeu, Miamo, & Njangang, 2022). With that viewpoint in mind, the current study seeks to examine the impact of foreign direct investment (FDI) on economic growth in Iraq, a developing country, from the years 2000 to 2022. A thorough comprehension of the function of foreign direct investment (FDI) in economic development is of particular significance for Iraq, given the multitude of obstacles it must confront to align its speed of reforms with the global economy. The country's primary structural issues often cited include subpar and volatile growth rates, insufficient productivity, and significant levels of unemployment (Davoodi & Abed, 2003). Therefore, a more effective policy approach in this context would involve enhancing the existing EC framework to address the challenges. However, Iraq is exhibiting a relative deficiency in terms of economic competitiveness when compared to numerous growing nations. Upon examining the economic complexity index (ECI), it becomes evident that Iraq occupies a significantly low position on the ECI scale. In fact, it even falls within the negative quadrant, as depicted in Figure 1. This

observation highlights the fact that Iraq's economic complexity is comparatively lower than that of both advanced and developing nations. Consequently, it can be inferred that Iraq's export production lacks the necessary sophistication and diversification. The vulnerability of a nation to external shocks and the inefficiencies in the allocation of resources is further aggravated by a poor degree of economic competitiveness. Moreover, Iraq, being a nation that exports oil and lacks the motivation to pursue diversification due to its heavy reliance on natural resources, faces even larger challenges. The government and policymakers in Iraq are cognizant of the apprehension around the potential challenges associated with sustaining employment levels and ensuring stability in growth rates in the event of a fall in oil reserves. The attainment of these objectives necessitates a fundamental transition towards the production of more sophisticated goods that offer enhanced diversity and value, rather than a mere emphasis on increasing the amount of the existing product (Yildirim, 2014). It is imperative to thoroughly deliberate the augmentation of electoral capacity by Iraq. Since 2003, Iraq has implemented many procedures and reforms aimed at attaining the development of its financial system under the supervision of the Central Bank. The enhancement of Iraq's economic conditions can be facilitated through the growth of its financial system, which involves improving financial access, financial depth, and financial efficiency of its institutions (Abdullah & Abbas, 2022).

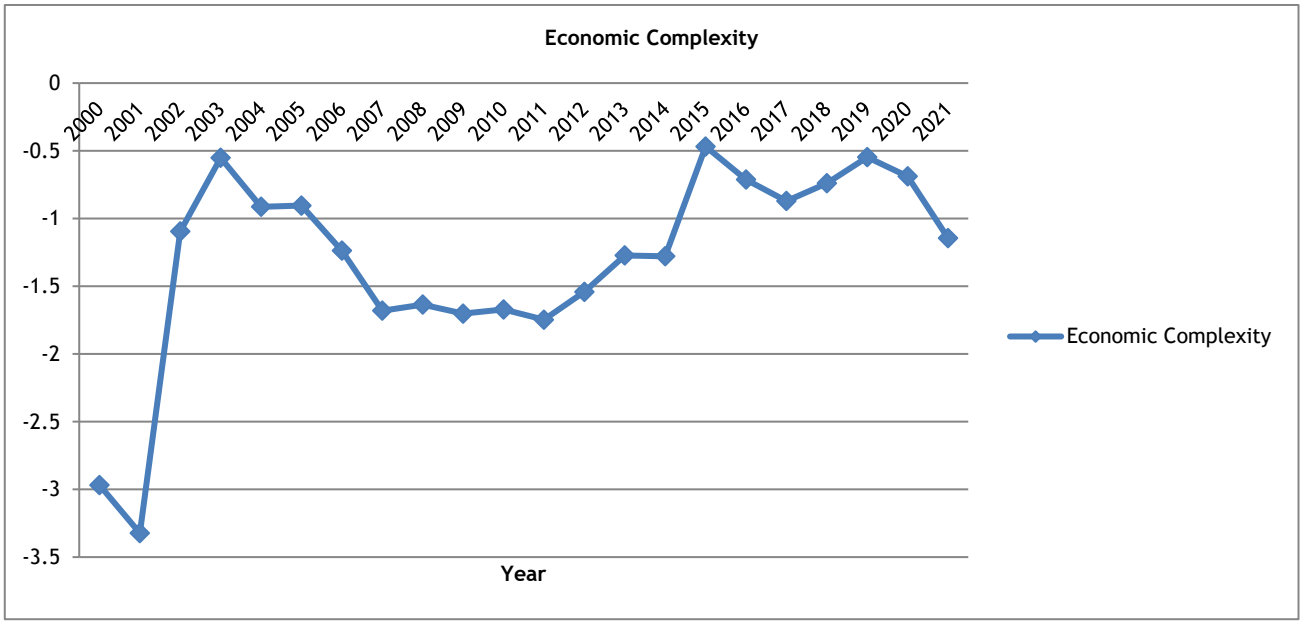

Figure 1: Economic Complexity in Iraq over the period 2000-2021.

In light of the abovementioned rationale, it is imperative to comprehend the correlation between foreign direct investment (FD) and economic competitiveness (EC) in Iraq. This understanding is crucial for formulating effective policy interventions aimed at fostering a more advanced and diverse economy that facilitates sustained growth (Yalta & Yalta, 2021). Through a rigorous empirical investigation of the interrelationship in Iraq, this study makes two significant contributions to the existing body of scholarship. First, the earlier studies have exhaustively examined several factors influencing economic complexity. However, the relationship between foreign direct investment (FD) and economic complexity (EC) has received limited attention in prior studies. Therefore, the current study contributes to the limited body of research that has examined the impact of FD on EC. Secondly, the current research focuses on assessing the relationship between economic complexity and various indicators in Iraq. It is worth noting that Iraq has been consistently ranked low in terms of economic complexity on a global scale, and has not received significant attention from scholars in this regard until now. Considering the importance of electronic commerce (EC) in fostering economic development within a nation, the outcomes of the present investigation would prove beneficial for Iraq in comprehending the intricacies of EC and foreign direct investment (FDI). This comprehension would subsequently contribute to the advancement of EC within the country.
Following a concise introductory part, the subsequent analysis is structured into four distinct sections: a literature review (section 2), an examination of data and methods (section 3), an exploration of results and discussions (section 4), and a conclusion accompanied by policy recommendations (section 5).

2. Literature Review

The research community offers much empirical information regarding the factors that drive economic growth and economic development. As previously mentioned, the idea of "Economic Complexity" has lately arisen as a suitable measure for assessing the level of economic development in an economy, taking into account its technological breakthroughs and export diversification (Hidalgo & Hausmann, 2009). Following the establishment of this concept, researchers have shifted their focus towards examining this metric and conducting empirical assessments of its determinants. Nguyen, Schinckus, and Su (2022) conducted a comprehensive analysis of a panel of 89 economies to examine the influence of Internet development, economic integration, and institutional quality on economic competitiveness during the period spanning from 2002 to 2016. The application of Feasible Generalised Least Squares (FGLS) in conjunction with Panel Corrected Standard Errors revealed that all of the factors examined had a significant influence on the determination of EC within both global and disaggregated panels. Yalta and Yalta (2021) conducted a comprehensive

analysis of data from the MENA area spanning the years 1970 to 2015, with the aim of identifying significant factors influencing economic conditions (EC). The study employed the GMM estimate approach to examine the relationship between human capital and natural resource rents on economic conditions in countries. The findings revealed that human capital had a positive effect, while natural resource rents had a negative impact on economic conditions. Rivera, Leon, Cornejo, and Florez (2023) conducted an estimation of the impact of globalisation, human capital, and institutions on economic competitiveness (EC) in Latin American countries. Their findings indicate that all of these factors play significant roles as determinants of EC in the countries under study. In their study, Njangang and Nvuh-Njoya (2023) examined the impact of democracy on the growth of the Economic Community (EC) by analysing data from 116 nations. The research employed the Fixed Effects Model to examine the relationship between democracy and EC. The results of the study indicated that democracy had a positive impact on EC. In their study, Oumbé, Djeunankan, and Ndzana (2023) conducted research on a panel consisting of 112 nations throughout the period from 1986 to 2017. The objective of their study was to evaluate the relationship between information and communication technology (ICT), government spending, gross domestic product (GDP), and economic competitiveness (EC). The study employed FMOLS, Granger Causality analysis, and DOLS estimations to examine the relationship between ICT, GDP, government spending, and economic competitiveness (EC). The findings indicated that all three factors - ICT, GDP, and government spending - had a positive impact on EC.

Extending the discussion, the impact of foreign direct investment on economic competitiveness in the BRICS and MINT nations throughout the period from 1991 to 2020 was examined by Osinubi and Ajide (2022). The application of the Ordinary Least Squares (OLS) estimation method revealed a positive relationship between Foreign Direct Investment (FDI) and Economic Growth (EC) in various countries. In the study conducted by Chu (2023), many factors influencing EC were assessed across the time span of 1995 to 2019. The findings of the study indicated that there was a positive relationship between population density, income, government consumption, and human capital, whereas natural resources exhibited a negative impact on economic competitiveness. In their study, Kamguia, Tadadjeu, Miamo, and Njangang (2022) examined the impact of foreign aid on economic growth in a panel comprising 78 emerging nations over the period from 1990 to 2017. Based on the application of GMM estimation, scholars have deduced that foreign aid has a negative impact on economic growth. In their study, Hoang, Chu, and To (2023) examined the relationship between natural resources, geopolitical threats, and economic policy uncertainty on economic conditions (EC) by collecting data from 19 countries, both developed and developing, over the period of 1997 to 2019. The findings from the panel quantile regression analysis indicate that the presence of natural resources and economic policy uncertainties had a negative impact on economic growth, whereas geopolitical risks had a positive effect on economic growth. In a recent study conducted by Ogbuabor, Emeka, Orji, and Onuigbo (2023), the authors examined the impact of foreign finances on economic conditions (EC) in African countries. The study specifically investigated the moderating effect of institutional quality on this relationship. The findings of the study revealed a positive association between financial inflows and EC in these countries.

However, the relationship between FD and EC nexus remains insufficiently investigated in academic literature. Only a limited number of empirical research have been conducted to quantify this relationship. Nguyen, Schinckus, and Su (2020) conducted a study on the determinants of economic competitiveness (EC) across 52 nations. The researchers employed various econometric techniques, such as Panel Corrected Standard Error, Pooled Ordinary Least Squares (OLS) with and without Fixed Effects, and Feasible Generalised Least Squares (FGLS), to analyze the data. The data suggest that both foreign direct investment (FD) and patents have played a crucial role in driving economic complexity in countries. Nguyen and Su (2021) conducted a study whereby they examined a sample of 86 nations. The researchers calculated the relationship between foreign direct investment (FD) and economic growth (EC) throughout the time frame of 2002 to 2017. The estimate procedure employed in this study involved the use of Panel Corrected Standard Errors and Feasible Generalised Least Squares. The results obtained from this analysis provided evidence supporting the positive influence of Foreign Direct Investment in Economic Growth. The beneficial and significant impact of FD was also detected in disaggregated panels. In their study, Njangang, Asongu, Tadadjeu, and Nounamo (2021) employed panel data including 24 South African countries over the period of 1983 to 2017 in order to investigate the influence of foreign direct investment (FD) on economic growth (EC). The utilisation of GMM estimate and the Driscoll-Kraay Standard Error methodology revealed a significant beneficial impact of Foreign Direct Investment (FD) on Economic Growth (EC). In a recent study conducted by Chu (2020), the author examined the impact of FD on economic conditions in a sample of 94 nations. The study encompassed the time frame spanning from 1968 to 2015. The research employed the System GMM estimation technique, which revealed that financial development (FD) had a positive impact on economic growth (EC) in the individual countries.

2.1 Literature Gaps

While conducting a comprehensive evaluation of existing studies, some gaps have been identified, which our present work aims to address. Based on the analysis of prior research, it is evident that the investigation into the determinants of economic complexity is gaining traction as a novel field of scholarly inquiry and discussion. Academic researchers are currently focusing their attention on the estimation of key parameters that have the potential to dramatically impact EC. However, the researchers of the past primarily directed their attention towards various regions within countries, neglecting the specific examination of individual countries such as Iraq to determine the crucial aspects that contribute to enhancing EC. Secondly, there remains a dearth of research on the relationship between financial development (FD) and economic growth (EC), with only a limited number of studies having examined the impact of FD on EC. Hence, it is imperative to conduct additional research in this region, particularly within the context of Iraq, which exhibits a poor ranking on the ECI index at a global level. The study, with the completion of these gaps, is a unique contribution to the existing body of knowledge. Its findings offer valuable insights for policymakers.

3. Variables, Data and Applied Methodology

In accordance with prior scholarly research, it has become imperative to assess the relationship between financial

development (FD) and economic growth (EC). Hence, the primary aim of the present study is to examine the influence of foreign direct investment (FDI) on economic growth in Iraq from 2000 to 2022. The Economic Complexity Index (ECI) is utilised as a metric to assess the level of economic complexity, serving as the dependent variable in our research. Hidalgo and Hausmann (2009) developed an Economic Complexity Index (ECI) to assess the technological intensity of an economy's export structure. The three databases upon which it is founded are the Standard International Trade Classification, the North American Industry Classification System, and the COMTRADE System of the United Nations. The Economic Complexity Index (ECI) serves as an indicator of a nation's economic progress in relation to its export activities, as it exclusively encompasses data pertaining to exported goods. The idea of economic complexity is expounded upon in the global trade literature, whereby it is defined as the degree of knowledge and technological advancement associated with production processes (Doğan, Saboori, & Can, 2019). A country's economic output necessitates a significant level of comprehensive expertise and competencies (Hausmann et al., 2014). The Economic Complexity Index (ECI) serves as a measure of the diversity and complexity of a country's export portfolio. (Swart & Brinkmann, 2020). As a country undergoes economic development, there is a corresponding increase in product diversity and production, which in turn adds to further economic complexity and development. The concept of economic competitiveness (EC) encompasses not only research and development (R&D) endeavours but also the capacity to facilitate a wide range of products and environmentally friendly technology. Consequently, EC has the ability to significantly contribute to the advancement of societal progress (Neagu, 2019). According to Hidalgo and Hausmann (2009), this serves as the fundamental basis for elucidating the disparity in per capita income among nations. Therefore, the Economic Complexity Index (ECI) exhibits a clear correlation with a nation's overall welfare and income levels (Neagu & Teodoru, 2019).

The primary independent variable under investigation in this study is FD. In accordance with the studies conducted by Di Clemente, Strano, and Batty (2021), Aslam, Ghouse, and Khan (2022), and Yalta and Yalta (2021), we enhance our regression model by including significant variables such as income, urbanization, foreign direct investment, and natural resources as control variables.

$$EC_t = \alpha_0 + \beta_1 FD_{it} + \beta_2 NR_{it} + \beta_3 URB_{it} + \beta_4 GDP_{it} + \beta_3 FDI_{it} + \varepsilon_{it} \quad (1)$$

In this context, EC denotes economic complexity, NR refers to natural resources, FD represents financial development, GDP signifies economic growth, FDI and URB stand for foreign direct investment and urbanisation respectively, and ε_it denotes the random error term. The secondary data for all variables is sourced from secondary references. Table 1 provides a comprehensive depiction of the variables and the respective sources from which their data is derived.

Table 1: Variable Description

Variable of the Study	Variable Measurement	Source
Economic Complexity	Economic Complexity Index	OEC
Natural Resources	Total natural resource rents (% of GDP)	WDI
Financial Development	Domestic credit to the private sector (% of GDP)	WDI
Foreign Direct Investment	Foreign Direct Investment net inflows (% of GDP)	WDI
Economic Growth	GDP per capita (Constant $ 2015)	WDI
Urbanization	Urban Population Growth (annual percent)	WDI

WDI= World Development Indicators, OEC= Observatory of Economic Complexity

3.1 Econometric Approach

3.2 Unit Root Tests

The suitability of estimation results and the choice of regression methodology mostly rely on the outcomes of unit root and cointegration tests. The unit root test is utilised to verify the presence of a unit root or ascertain the stationarity of the data. Based on unit root tests, data can exhibit either level stationarity or first-difference stationarity. To enhance the accuracy and satisfaction of our results, we employ two stationarity tests, recognising the inherent imperfections present in every test. The Augmented Dickey-Fuller and Phillips-Perron tests are utilised to determine the presence of a unit root or the order of stationarity for the variables under investigation. The ADF test was proposed by Dickey and Fuller (1979). The null hypothesis of the test posits the presence of a unit root in the data series, indicating that it is non-stationary. The PP test was introduced by Phillips and Perron (1988). The null hypothesis of the Phillips-Perron (PP) test is analogous to the null hypothesis of the Augmented Dickey-Fuller (ADF) test, which states that the time series under consideration possesses a unit root at the level. To ascertain the stationarity of the data, it is necessary to reject the null hypothesis based on the findings of the unit root test.

3.3 Cointegration Test

Following the unit root test, the subsequent crucial step entails the assessment of the long-term relationship between the variables under consideration through the application of a cointegration test. The study proposed by Johansen and Juselius (1990) and Johansen (1995) use the Johansen cointegration test. The cointegration test proposed by Johansen is widely regarded as the most robust and dependable test, producing consistent outcomes. The test determines the long-term cointegration among variables. The Johansen test is better suited for smaller datasets. Therefore, it is more pragmatic to do this inquiry. The Johansen cointegration test yields two statistical measures: eigenvalues and trace statistics. The null hypothesis posits that there is no cointegration between the variables, while the alternative hypothesis asserts the existence of cointegration between the variables.

3.4 Fmols, Dols and Ccr

When dealing with a model series that exhibits an order of

integration of I(1), it is important to note that the use of traditional ordinary least squares (OLS) estimation can lead to inaccurate or misleading outcomes. Therefore, in this study, the FMOLS and DOLS estimation approaches are employed for the aim of empirical estimate. FMOLS and DOLS represent nonparametric and parametric estimating techniques, respectively. The previously mentioned estimations are frequently employed in practical applications within the existing body of research to conduct empirical estimation when dealing with time series data. FMOLS provides several significant benefits, including reliable and efficient estimating techniques, as well as effective strategies for addressing the issue of cross-sectional dependence. The use of Difference of Lagged and Lead Series (DOLS) that incorporates various lagged and lead differences of a series with the same order of integration demonstrates its capacity to address concerns related to serial correlation and endogeneity. When confronted with small sample size, the Difference in Ordinary Least Squares (DOLS) method can produce consistent and unbiased results, effectively mitigating the potential bias inherent in small samples. To ensure the validity of the FMOLS and DOLS outcomes, we additionally employed CCR estimation as a dependable estimation technique.

4. Results and Interpretation

First, the research study presents the summary of statistical findings in Table 2. The statistical analysis includes fundamental data features such as the mean or average value, standard deviation, data range, and a test for normality. The findings indicate that the variable GDP exhibits the greatest average and standard error values, while the variable EC demonstrates the lowest average and standard error values among all the variables. The data range of GDP is observed to be the highest, whereas FDI exhibits the lowest data range among all the statistics. Furthermore, the Jarque-Bera test assessing the normality of the data reveals that certain series exhibit a normal distribution, while others do not conform to a normal distribution.

Table 2: Summary Statistics

Series	Mean/Average value	Stand.deviation	Min value	Max value	JB stat
EC	-1.304	0.727	-3.323	-0.468	9.396***
FD	5.414	4.039	-0.201	13.314	1.520
NR	47.52	9.669	27.417	65.318	0.095
FDI	-0.370	2.215	-4.541	4.561	0.178
URB	2.897	1.155	-0.771	4.899	15.95***
GDP	4017.2	615.06	222.71	4903.9	4.722***

Following that, a correlation matrix is constructed to assess the correlation between the variables under investigation. The correlation matrix is presented in Table 3. The results of the study indicate that there is a positive link between economic competitiveness (EC) and foreign direct investment (FDI) as well as financial development (FD). Conversely, there is a negative correlation observed between EC and urbanization (URB), gross domestic product (GDP), and natural resources (NR). Furthermore, it is noteworthy that all coefficients possess values below 0.8, thereby indicating the absence of multicollinearity issues within the model.

Table 3: Correlation Matrix

Variables	SD	GF	GI	FT	CO2	LEXP	GOV
EC	1.00						
FD	0.537	1.00					
URB	-0.088	0.069	1.00				
GDP	-0.1722	-0.104	-0.015	1.00			
FDI	0.158	-0.209	-0.115	-0.0322	1.00		
NR	-0.260	-0.785	-0.200	0.193	0.420	1.00	

Once the basic data properties have been examined, the subsequent stage involves determining the integration sequence to appropriately select an approach for conducting empirical research. The two most widely relied upon and effective unit root tests for the purpose of time series analysis are the Philips-Perron (PP) test and the Augmented Dickey Fuller (ADF) test. Therefore, the present study also employs these assays. The findings of both examinations are depicted in Table 3. It is readily apparent that all of the series exhibit non-stationarity at the level, but attain stationarity after undergoing the process of first differencing.

Table 3: Unit Root Results

Series	ADF Test		PP- Test		
	Level	1st Difference	Level	1st Difference	Decision
EC	-2.686	-4.494***	-2.625	-4.494***	I(1)
GDP	1.728	-5.042***	1.728	-5.524***	I(1)
FDI	-2.856	-4.793***	-2.443	-4.793***	I(1)
FD	-2.379	-6.133***	-0.242	-4.230***	I(1)
NR	-1.929	-4.449***	-1.960	-4.629***	I(1)
URB	-2.819	-4.598***	-2.209	-4.365***	I(1)

Given that all of the series have been determined to be integrated of order 1 or I(1) by the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, it is plausible that a long-term cointegrating relationship may exist among the variables. Hence, it is imperative to employ a cointegration test to ascertain the presence or lack of cointegration prior to conducting long-term empirical study. In this study, the Johansen Juselius cointegration

test was utilised to analyse the data. The results of this test are presented in Table 4. Based on the results obtained from both the trace and maximal eigen statistics, it is evident that the null hypothesis of no cointegration is decisively rejected. The model exhibits the presence of three cointegrating equations, as evidenced by the maximum eigenvalue and trace statistics.

Table 4: Johansen Juselius Cointegration Test

	Trace	Max Eigen values
None	242.84*** (0.000)	0.9981*** (0.000)
At most 1	117.10*** (0.000)	0.9145*** (0.0004)
At most 2	67.907*** (0.002)	0.8210*** (0.0057)
At most 3	33.495*** (0.0179)	0.7582*** (0.0040)
At most 4	5.0979 (0.7437)	0.2208 (0.7430)
At most 5	0.1069 (0.743)	0.0055 (0.7437)

Following the verification of the cointegration connection between the variables, our focus now shifts towards determining the coefficients in the long run. To achieve this objective, we employ the FMOLS, CCR, and DOLS methodologies and present the findings of all three models in Table 5.

Table 5: Long Run Coefficient Estimation

Series FM-OLS D-OLS CCR						
	Beta	Prob-value	Beta	Prob-value	Beta	Prob-value
FD	0.1766***	0.0038	0.1922***	0.0237	0.0178***	0.0037
NR	0.023***	0.0199	0.0394***	0.0241	0.028***	0.0221
GDP	0.0092	0.0092	0.0010**	0.0792	0.0009	0.0304
URB	0.039***	0.0853	0.158***	0.0315	0.041***	0.0692
FDI	0.1560**	0.0782	-0.212***	0.0130	-0.170**	0.0836
C	0.1539	0.9255	0.2801	0.9278	-0.0870	0.9674
R^2 value 0.934 0.986 0.923 Adjusted R^2 value 0.845 0.813 0.834						

First, as anticipated, the analysis demonstrates that FD exerts a favorable influence on EC across all three models. The statistical analysis reveals that the coefficient of FD has a positive and significant relationship in all models, indicating that FD has a beneficial impact on EC in Iraq. Our findings provide robust support for the notion that convenient finance access plays a pivotal role in facilitating enterprises' ability to generate a greater number of innovative items. Hence, it is unequivocally proven that a country exhibiting a higher level of financial development will provide increased monetary resources to industrial enterprises at more affordable interest rates. The provision of more financial resources facilitates the industrial sector in augmenting their expenditure on research and development endeavors, hence enhancing the variety and complexity of their product offerings. The current research significantly supports the assertions made by Chu (2020), Njangang, Asongu, Tadadjeu, and Nounamo (2021), Nguyen and Su (2021), and Nguyen, Schinckus, and Su (2020), as indicated by the findings.

Secondly, in all three models, the coefficient of GDP exhibits statistical significance and a positive relationship. Our findings suggest that economic growth plays a significant role in increasing the degree of economic competitiveness in Iraq. The result mentioned above can be substantiated by the fact that economic expansion provides the government with the necessary financial resources to sustain public services such as educational institutions, while also affording individuals the financial capability to finance their own educational pursuits. The supply of education facilities has a crucial role in the buildup of human capital, which is a significant factor influencing economic growth. In addition, it is commonly acknowledged among experts that economic expansion plays a crucial role in providing the necessary cash for technical improvement, advancements, and their subsequent application. The findings of Oumbé, Djeunankan, and Ndzana (2023), Chu (2020), and Nguyen, Schinckus, and Su (2020) provide substantial support for our results, indicating a positive relationship between economic growth and EC. However, the study conducted by Osinubi and Ajide (2022) presents a contrasting perspective, as they discovered a negative link between economic growth and EC.

Thirdly, it has been noted that an augmentation in natural resources leads to a decrease in environmental degradation. The coefficient associated with natural resources is consistently negative across all three models, indicating a definite negative impact of natural resources on economic conditions. To clarify, the depletion of natural resources leads to a decrease in the level of environmental conservation. The results of our study provide robust evidence in favor of the "Dutch Disease Hypothesis." The Dutch disease hypothesis states that an overabundance of resources has a detrimental impact on economic progress. The very existence of a negative coefficient provides evidence that the necessity for increased diversification is reduced in situations where reliance on natural resources is prevalent. According to the findings of Oumbé, Djeunankan, and Ndzana (2023), the act of exporting natural resources has the potential to lead to a rise in the value of the domestic currency, so reducing the competitiveness of alternative economic sectors and diminishing the overall complexity of the economy. Previous research conducted by Oumbé, Djeunankan, and Ndzana (2023), Yalta and Yalta (2021), and Hoang, Chu, and To (2023) align with the findings of our study.

Fourthly, it is observed that there exists a positive correlation between foreign direct investment (FDI) and economic growth (EC) across all models. The existing literature suggests a positive correlation between foreign direct investment (FDI) and the economic complexity index (ECI), indicating that FDI has the potential to enhance the host country's product quality through the transfer of skills, information, and technical advancements. The evidence that foreign direct investment (FDI) acts as a conduit for

the transfer of technology, knowledge, and managerial capabilities, which in turn significantly contributes to the promotion of the production of advanced and sophisticated goods, supports this assertion. In alternative terms, foreign direct investment (FDI) is widely regarded as a primary catalyst for enhancing economic conditions (EC). According to current literature, it is argued that foreign direct investment (FDI) inflows have the potential to generate technology and skill spillovers to the domestic sector, hence potentially contributing to an increase in economic competitiveness (EC). Foreign direct investment (FDI) possesses the capacity to substantially enhance economic growth by introducing innovative products or services that were previously unavailable, while also augmenting the production of existing items. The study provides empirical evidence that aligns with the assertions put forth by Osinubi and Ajide (2022), Antonietti and Franco (2021), and Saadi (2020).

Lastly, the analysis indicates that urbanisation is a robust predictor of EC, as evidenced by the significant and positive coefficient seen in all models. The present discovery is consistent with the assertions made by Di Clemente, Strano, and Batty (2021), which posit that urbanisation fosters the concentration of enterprises into compact clusters. This phenomenon facilitates the exchange of knowledge across diverse firms, enables economies of scale in production, and promotes labour market pooling and matching. Various variables contribute to the evolution of technology and the implementation of research and development operations, hence enhancing the sophistication of products manufactured by enterprises (O'sullivan, 1996).

5. Conclusion and Policy Recommendations

The significance of economic complexity, which refers to the maintenance of a productive base consisting of intricate, distinctive, and high-value products, has grown considerably in the context of sustainable growth and long-term economic prosperity within the rapidly evolving global market. The limited amount of empirical investigation about the correlation between FD (financial development) and EC (economic growth) has served as a driving force for the researchers to conduct an empirical analysis on the impact of FD on EC in Iraq from the years 2000 to 2022. Furthermore, in order to address the issue of omitted variable bias, several significant control variables such as economic development, foreign direct investment (FDI), natural resources, and urbanisation have been incorporated into the model. The study employs empirical estimations, such as the CCR, DOLS, and FMOLS techniques, due to the non-stationarity of the studied variables at the level. The subsequent results have been acquired: Financial development (FD) has a crucial and beneficial role in the enhancement of economic conditions (EC). Economic growth, the availability of natural resources, and foreign direct investment (FDI) have been identified as factors that have a positive impact on economic competitiveness. Nevertheless, the influence of natural resources is consistently detrimental across all models. Therefore, the study finds that foreign direct investment (FD) has a significant role in enhancing the sophistication and diversity of export products, thereby increasing the economic competitiveness (EC) of a country. Based on the results mentioned above, the study suggests that it is advisable for the government to prioritize the efficient development of the financial sector in order to allocate greater funding to industrial sectors involved in the manufacture of export goods. Furthermore, it is imperative for the government to prioritize the mitigation of information asymmetry among enterprises. This measure is crucial as it effectively diminishes capital and transaction costs, enhances resource allocation, and eventually facilitates greater access to capital and finance. Consequently, this will accelerate the rate of product diversity and sophistication. Furthermore, the elimination of regulatory constraints and the resolution of tax disparities would serve as catalysts for increased corporate investments and the acquisition of state-of-the-art technologies, so fostering economic growth. To mitigate information asymmetry and facilitate the optimal allocation of resources towards profitable endeavours, it is imperative for the government to closely monitor the situation of financial development.

The current investigation is not devoid of its constraints. The present study examines the influence of financial distress (FD) on economic conditions (EC) through the utilisation of a singular metric for measuring FD. Future research might investigate the interconnection between financial development (FD) and economic growth (EC) by the use of different indicators such as liquid liabilities, financial inclusion, financial depth, and wide money measures. Additionally, the study incorporates certain variables as control variables while neglecting significant variables such as population density, human capital, internet penetration, economic policies, and energy usage. Subsequent research endeavours may undertake an examination of these aforementioned aspects. Furthermore, it is recommended that future research endeavours encompass additional developing countries within the Gulf region in order to expand the breadth of the study. In future research, scholars may employ non-linear and asymmetric empirical estimating methodologies to enhance their comprehension of the nexus.

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