

Impact of Stock Market Dynamics on Saudi Arabia's Economic Landscape: A 2000-2022 Analysis

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Abstract: This study investigates the nexus between Stock Market Dynamics and economic health in Saudi Arabia from 2000 to 2022, considering its heavy dependence on oil. Employing methods like Enhanced Dickey-Fuller, Engle-Granger, and OLS regression, it aims to elucidate how the stock market influences economic growth in oil-reliant economies. Various factors, including the Market Cap index, liquidity ratio, Human Development Index (HDI), and export volume, were analysed. Unexpectedly, traditional indicators like market size and liquidity showed minimal impact on growth, challenging conventional assumptions about the stock market's role in economic expansion. These findings offer valuable insights into Saudi Arabia's economic dynamics, guiding policy formulation and investment strategies. Furthermore, the study highlights the crucial role of exports, especially from the oil sector, in driving economic growth in both short and long terms. Policy recommendations emphasize initiatives to diversify exports and invest in alternative energy sources to mitigate oil price volatility. Additionally, while the Human Development Index exhibited a significant positive effect in the short term, its long-term impact diminished. This underscores the need for strategies that promote human development alongside economic diversification for sustainable growth. As Saudi Arabia pursues Vision 2030 to reduce oil dependency, strategic policymaking balancing human development with economic diversification becomes imperative for long-term stability and prosperity.

Keywords: Stock Market, Economic Growth, Human Development Index (HDI), Oil Exports, Gross Domestic Production GDP.

تأثير ديناميكيات سوق الأوراق المالية على المشهد الاقتصادي في المملكة العربية السعودية: تحليل 2000-2022

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المستخلص: تتناول الدراسة العلاقة بين أداء سوق الأسهم والنمو الاقتصادي في المملكة العربية السعودية من عام 2000 إلى عام 2022. لفحص كيفية تأثير سوق أسهم أحد الاقتصاديات المعتمدة على النفط على النمو الاقتصادي. من هنا قامت الدراسة بتحليل عوامل مؤثر رأس المال السوقي، ونسبة السيولة، ومؤشر التنمية البشرية، وحجم الصادرات. وتوصلت إلى أن المؤشرات التقليدية ليس لها تأثير معنوي على النمو الاقتصادي. حيث أظهرت النتائج تحدياً للافتراضات التقليدية حول تأثير سوق الأسهم على النمو الاقتصادي، توصي الدراسة بأهمية التوجيه بتطوير السياسات وترشيد القرارات الاستثمارية ودور الإيرادات النفطية في دفع عجلة النمو الاقتصادي بالإضافة إلى التخفيف من تقلب أسعار النفط من خلال استراتيجية تنوع الصادرات، والاستثمار في الطاقة البديلة. تظهر النتائج أن مؤشر التنمية البشرية ذو تأثير معنوي على المدى القصير وهو ما يختلف عن تأثيره في المدى البعيد، الأمر الذي يتطلب توازن الاستراتيجيات الموجهة نحو التنمية البشرية مع تلك الخاصة بتنوع الاقتصاد والتوجه إلى الابتكار وتطوير البنية التحتية. لتحقيق التنمية المستدامة على المدى البعيد ضمن إطار رؤية 2030 وضرورة التخطيط الاستراتيجي من قبل صانعي السياسات. ويشكل تكامل هذه المبادرات والاستراتيجيات أساساً للتنمية المستدامة في المملكة، مما يضمن الاستقرار الاقتصادي والازدهار على المدى الطويل.

الكلمات المفتاحية: تطور سوق الأسهم، النمو الاقتصادي، مؤشر التنمية البشرية، الصادرات البترولية، الناتج المحلي الاجمالي.

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1. Introduction

Economic development is a multifaceted topic that has garnered extensive scholarly attention, with researchers exploring various determinants, among which the role of the financial sector stands out prominently. Stock markets, serving as vital platforms for mobilizing savings and channelling investments, have been particularly scrutinized, especially in emerging economies grappling with diversification challenges and striving for integration into the global financial system.

This study delves into the nexus between Stock Market Dynamics and economic trends in Saudi Arabia over the period from 2000 to 2022. Embracing the complexities of an oil-dependent economy.

The objectives of this research are multifaceted. Firstly, it aims to scrutinize the relationship between stock market dynamics and economic progress within the context of Saudi Arabia. Given the nation's heavy reliance on oil exports, the study seeks to evaluate the significance of stock market metrics in such an economic framework. Additionally, it endeavours to delve into the potential limitations associated with solely relying on stock market indicators, proposing a more comprehensive approach that integrates broader economic indicators like the Human Development Index (HDI). Furthermore, this research seeks to grasp the implications of its findings for Saudi Arabia's Vision 2030 plan, which strives to reduce the country's dependence on oil. Lastly, it aims to provide valuable insights that not only inform policy formulation but also foster academic discourse and support efforts to diversify the economy of Saudi Arabia and similar economies.

The primary hypothesis posits a positive correlation between advancements in stock market metrics, such as market capitalization and liquidity, and economic growth within Saudi Arabia. In contrast, the secondary hypothesis suggests that control variables, including exports and the

Human Development Index (HDI), exert a notable influence on the interrelation between stock market dynamics and economic advancement within the Saudi Arabian context. These hypotheses provide a framework for examining the intricate relationship between stock market performance and economic growth while considering the broader economic landscape and control variables.

Motivated by the need to move beyond traditional indicators and embrace a holistic approach, the study scrutinizes various factors, including market capitalization, liquidity, exports, and the Human Development Index (HDI). Surprisingly, the findings challenge conventional wisdom, revealing that traditional metrics such as market size and liquidity exhibit minimal impact on economic trends. Instead, the study underscores the pivotal role of exports, particularly from the oil sector, in driving both short-term and long-term economic expansion.

Moreover, the research highlights the significant but time-bound influence of the Human Development Index (HDI) on economic growth, emphasizing the importance of concurrent investments in human capital alongside economic diversification efforts. As Saudi Arabia embarks on its transformative Vision 2030 plan to reduce dependency on oil, these insights assume greater significance, guiding policymakers in crafting strategies that balance economic diversification with human development goals.

In addition to advancing scholarly understanding, the study offers actionable insights for policymakers and investors, advocating for export diversification, investment in human capital, and stable economic policies to foster sustainable growth and resilience against external shocks. By elucidating the intricate interplay between stock market dynamics and economic expansion, this research contributes to the broader discourse on economic development in oil-dependent

economies, offering valuable lessons for Saudi Arabia and similar nations navigating the path to prosperity in an ever-evolving global landscape.

The study sets out to investigate the economic intricacies of Saudi Arabia, particularly focusing on the significance of stock market dynamics in an economy heavily reliant on oil exports. This inquiry stems from the recognition of the need to understand the interplay between stock market performance and economic growth in the context of a nation deeply entrenched in the global oil market. By scrutinizing the relationship between stock market dynamics and economic progress, the research aims to shed light on the efficacy of traditional metrics in capturing the complexities of an oil-dependent economy. Furthermore, the study seeks to address the potential limitations associated with solely relying on stock market indicators and advocates for a more comprehensive approach that integrates broader economic indicators, such as the Human Development Index (HDI), to provide a holistic view of societal progress. Through these endeavours, the research endeavours to offer valuable insights that not only inform policy formulation but also foster academic discourse and support efforts to diversify the economy of Saudi Arabia and similar economies facing analogous challenges in the global economic landscape.

2. Literature Review

The connection between stock market dynamics and economic expansion is a topic of profound interest in the realm of economic literature, showcasing a multifaceted and intricate relationship that varies significantly across diverse geographical regions, different economies, varying market conditions, and specific timeframes.

Mixed Findings on the nexus Between stock market dynamics and Economic expansion

A range of studies have explored the relationship between stock market

dynamics and economic expansion, with mixed findings. Owolabi (2013) and Masoud (2013) both found a positive relationship, suggesting that stock market advancement can promote economic growth. The foundation of the discourse on this subject was laid by seminal scholars such as Demirguc-Kunt and Levine (1993) and King and Levine (1993), who initially emphasized the positive nexus between SMP and economic expansion. Their arguments centered on the idea that a well-structured equity market could potentially reduce capital costs, thereby fostering increased investment and sustained economic growth. However, this optimistic view was contrasted by the cautionary notes of Bencivenga et al. (1996) and Wang and Ajit (2013), who underscored potential risks associated with stock market performance (SMP), highlighting the propensity for SMP to incite hazardous investment behaviors. In an attempt to challenge the prevailing assumptions, Harris (1997) presented findings that indicated no significant impact of SMP on economic expansion across a varied sample of countries between 1980 and 1991, providing a notable exception to the prevailing consensus. Hassanzadeh and Ahmadian (2010) identified both positive and negative effects of stock market progress on economic expansion, suggesting a weak impact of stock market performance on growth. These studies emphasize the necessity for additional research to gain a better understanding of the intricate relationship between stock market advancement and economic progress. Haque's (2011) study concludes that none of the dynamic models effectively identify the linkage between the stock market and per capita growth rate in the SAARC region. This suggests that stock market advancement do not exert any influence on real economic activity in the region. These results do not support the empirical studies by Levine and Zervos (1996, 1998) and others, which propose a direct association between the stock market

and per capita growth rate. Further enriching the discourse, country-specific studies provided diverse insights into the connection between stock market advancement and economic expansion. (Levine & Zervos, 1996, 1998). Notably, studies conducted in countries like Nigeria and Zimbabwe by Bernard and Austin (2011) and Zivengwa et al. (2011) reported negative correlations, showcasing instances where the conventional relationship between stock market advancement and economic expansion did not hold true. Conversely, research conducted in developed economies highlighted nuances that deviated from the established perspectives. These findings suggest a complex and dynamic interplay between stock market advancement and economic health in Saudi Arabia.

Stock market dynamics and Economic Expansion in Saudi Arabia:

A series of studies have explored the nexus between stock market dynamics and economic expansion in Saudi Arabia. Alghamedi (2012) underscores the heavy reliance of the Saudi stock market on oil revenues, suggesting potential limitations in using stock market metrics as the sole indicator of economic health. Alshammary (2014) highlighted the importance of investment in real economic activities for economic growth, while also cautioning about the potential hindrance of stock market volatility. However, Algaheed (2020) raised questions about the effectiveness of capital market development in fostering per-capita GDP growth, suggesting the need for further exploration of this relationship.

Stock market dynamics and Economic Expansion in Gulf Countries

Hamdi (2014) similarly found that financial sector development contributes significantly to economic growth in Gulf Cooperation Council (GCC) countries. Pradhan (2018) and Naik (2015) both found a positive relationship between stock market advancement and economic growth, with Naik (2015) specifically

highlighting the role of a well-functioning stock market in fostering economic growth. These findings suggest that stock market dynamics, particularly in the form of a well-functioning stock market, can potentially contribute to economic growth in Gulf countries.

Exploring Factors Affecting Stock market dynamics and Economic Expansion:

A series of studies have explored the nexus between stock market dynamics and economic growth in Kuwait. Raweh (2023) found a positive long-term association between stock market dynamics, trade openness, and financial development, but a negative short-term impact on sustainable development.

Al-Shami (2013) further highlighted the impact of macroeconomic indicators, such as inflation, interest rate, money supply, and oil prices, on stock returns in the Kuwaiti market. Simultaneously, researchers such as Boubakari and Jin (2010) and Aggarwal and Kyaw (2010) delved into the moderating influences that factors like governance structures and corruption may exert on the nexus between stock market dynamics and economic expansion.

Oil Dependency and Economic Dynamics:

In the context of oil-dependent economies, the intricacies of this relationship become even more pronounced, with limited existing knowledge. The function of the finance industry, including stock markets, is predominantly influenced by the dominant oil industry, thus adding another layer of complexity to the analysis.

This study acknowledges the existing research gap regarding the connection between stock market advancement and economic expansion in oil-dependent economies such as Saudi Arabia. Previous studies, exemplified by the works of Al-Malkawi and Abdullah (2011) and Al-Yousif (2002), have provided only partial insights into this intricate relationship. Thus, this research aims to fill this gap by focusing on Saudi Arabia's economic

landscape from 2000 to 2021, aligning its objectives with Saudi Arabia's Vision 2030 and aspiring to provide insights for policymakers, investors, and the academic community.

Saudi Arabia's Economic Trajectory and Development Strategies:

In the literature, extensive research has been conducted to explore the multifaceted factors that influence a nation's path of economic growth. Particularly, Saudi Arabia's ambitious endeavors in diversification and holistic development have attracted significant attention in scholarly inquiries. For instance, Alkhareif and Alsadoun (2016) conducted a study spanning from 1980 to 2015, which emphasized the nation's determined efforts to shift its focus away from the oil sectors. Their findings shed light on Saudi Arabia's strategic initiatives aimed at economic diversification and comprehensive development. Furthermore, Al-Yousif's (2002) work contributed to understanding the complex relationship between financial development and economic progress across various developing nations. By highlighting the pivotal role of tailored national policies, Al-Yousif's study provided valuable insights into the mechanisms through which financial development can contribute to sustainable economic growth. These prior studies offer valuable context and insights that inform the current research on Saudi Arabia's economic trajectory and the factors shaping its development strategies.

3. Methodology

This research is set out to conduct an in-depth examination of the connection among the progression of the stock market and the economic expansion in Saudi Arabia within the timeframe of 2000 to 2022. The selected timeframe was determined by the constraints tied to data availability. While monthly data is obtainable for metrics like stock market capitalization, liquidity, and export figures, essential economic indicators such as GDP and Human Development Index (HDI) are

only available on an annual basis. Consequently, to ensure consistency and meaningful analysis, this research relies on annual data for all variables, recognizing that juxtaposing monthly stock market metrics with annual economic figures could lead to a skewed interpretation due to differing time scales. The study explores two main questions: First, it examines the impact of stock market advancements, such as market capitalization and liquidity, on Saudi Arabia's economic growth. Second, it investigates the influence of control variables like exports and the Human Development Index (HDI) on this relationship, aiming to understand their roles in the broader economic context.

The study utilizes data from reputable sources, including World Bank Open Data and the Tadawul All Share Index (TASI) annual reports, covering the period from 2000 to 2022. These sources provide comprehensive data on stock market capitalization, liquidity, exports, and the Human Development Index (HDI) for Saudi Arabia. Access to this data is available through the World Bank website and the official Saudi Exchange site for TASI reports.

In this study, an examination is conducted to analyze the connection between the progression of stock market and economic expansion in Saudi Arabia within the timeframe of 2000 to 2022. This period was selected due to constraints related to data availability, with annual data chosen to maintain consistency across variables. The primary variables of interest, Stock Market Capitalization (LN_{SIZE}) and the Value of all Traded Shares (LN_{LIQ}), are utilized as indicators of stock market development and liquidity, respectively. These key variables allow for the assessment of the impact of stock market advancements on economic growth. Additionally, control variables such as Exports (LN_{EXP}) and the Human Development Index (HDI) are included to account for external factors that may influence the nexus between stock market

advancement and economic expansion. Exports reflect the significance of Saudi Arabia's oil-centric economy, while the HDI provides insights into broader aspects of development beyond economic output.

Various econometric techniques are employed in the methodology, including the Enhanced Dickey-Fuller test and the Engle-Granger cointegration test, to ensure rigorous analysis of the interplay between stock market advancement and economic progress. Furthermore, Ordinary Least Squares (OLS) regression is utilized to quantify the relationships between the variables under study, allowing for a clear interpretation of the quantitative impact of stock market dynamics on economic growth.

The advantages of applying OLS regression in this study lie in its simplicity, robustness, and suitability for analyzing relationships between variables in economic research contexts (Greene, 2003). By employing OLS regression, the statistical significance of the nexus between stock market advancement and economic growth can be effectively assessed while controlling for potential confounding factors. This approach is aligned with the research objectives and ensures a comprehensive analysis of the factors influencing economic expansion in Saudi Arabia.

The study aims to address two primary research questions that are both specific and testable. Firstly, it seeks to assess the extent to which stock market advancements, including market capitalization and liquidity, impact economic growth in Saudi Arabia. Secondly, it aims to analyze the influence of key control variables such as exports and the Human Development Index (HDI) on this relationship. By utilizing annual data and employing econometric techniques such as the Enhanced Dickey-Fuller test and the Engle-Granger cointegration test, the study ensures rigorous analysis of the interplay between stock market dynamics and economic progress. Additionally, the

OLS regression models are utilized to quantify the relationships between the variables under study, providing actionable insights for policymakers and stakeholders.

The hypotheses of the study are as follows:

Primary Hypothesis: There is a positive correlation between enhancements in stock market indicators, such as market capitalization and liquidity, and economic growth in Saudi Arabia.

Secondary Hypothesis: Control variables, such as exports and the Human Development Index (HDI), significantly influence the relationship between stock market dynamics and economic progress within the Saudi Arabian context.

Econometric Techniques and Procedures: Stationarity and Test for Unit Root

The study follows a procedure to assess data stationarity, which is essential to prevent potentially misleading regression outcomes. This involves conducting a unit root test. Specifically, the Engle and Granger method is employed, tailored for variables that exhibit stationarity at the first difference. This method aids in determining whether the variables under consideration are integrated and stationary, providing a foundation for robust econometric analysis.

Cointegration and Error Correction

The study employs a two-step approach to analyze cointegration and error correction:

Step 1: An OLS regression is conducted using level data, and an error correction term is applied to verify stationarity. This process helps determine long-term cointegration.

Step 2: The study derives the Error Correction Term (ECT) by considering lags of the error term to examine the short-term relationship. If the short-term relationship is found to be insignificant, the Hendry's technique is utilized to incorporate different lags, optimizing the model's fit.

The Model

The association is scrutinized via the ensuing econometric model:

$$\text{LNGDP}_i = \alpha + \beta_1 \text{LNSIZE} + \beta_2 \text{LNLIQ} + \beta_3 \text{LNEXP} + \beta_4 \text{HDI} + \epsilon_t \quad (1)$$

Where:

- LNGDP: the log transformation of GDP per capita (Economic Growth)
- LNSIZE: the log transformation of Capitalization of the market
- LNLIQ: the log transformation of the Value of all Traded Shares
- LNEXP: the log transformation of oil Export
- HDI: Human Development Index
- ϵ_t : Error term

Introduction to the explanatory variables:

Stock Market Capitalization (LNSIZE): This variable represents the size and development level of the stock market. We selected it because stock market size is often regarded as a proxy for economic development and is expected to positively influence economic growth. Theoretical underpinnings suggest that a larger and more developed stock market can facilitate capital mobilization, investment, and resource allocation, contributing to economic expansion.

Value of All Traded Shares (LNLIQ): This variable reflects market liquidity, indicating the ease with which assets can be bought or sold without causing a significant price change. Market liquidity is essential for efficient capital allocation and market functioning, as it allows investors to enter and exit positions with minimal impact on prices. We included this variable to capture the extent to which the stock market facilitates trading activity, which is crucial for economic growth.

Exports (LNEXP): This variable offers insights into the impact of Saudi Arabia's oil-centric economy on overall growth. Given the nation's heavy reliance on oil exports, this variable serves as a key determinant of economic performance. Theoretical frameworks suggest that export revenues can stimulate economic growth by generating foreign exchange earnings, supporting domestic industries, and driving investment. Considering Saudi Arabia's dependence on oil exports,

understanding their influence on economic growth is essential.

Human Development Index (HDI): These variable aggregates life expectancy, education, and income to measure societal progress and quality of life. While not directly tied to economic growth, the HDI reflects broader aspects of development beyond economic output. We included this variable to capture the multidimensional nature of development and its potential influence on economic performance. Empirical evidence suggests that higher levels of human development are associated with greater productivity, innovation, and economic resilience, highlighting the importance of considering human capital in economic analyses.

The methodology employed in this study presents several advantages in comparison to different methods already used in previous literature. By integrating multiple techniques including Enhanced Dickey-Fuller, Engle-Granger, and OLS regression, a more holistic analysis of the nexus between stock market advancement and economic expansion is facilitated. This multi-method approach allows for a thorough examination of the intricate dynamics at play, potentially yielding more nuanced insights compared to studies relying solely on a single methodology.

Moreover, the study analyses a diverse set of variables including the Market Cap index, liquidity ratio, Human Development Index (HDI), and export volume. This comprehensive approach ensures that key factors influencing the nexus between

stock market advancement and economic growth are duly considered, thereby enhancing the accuracy of the study's findings.

Furthermore, the study is tailored specifically to the context of Saudi Arabia, taking into account the nation's heavy reliance on oil and the objectives outlined in Vision 2030. By aligning with the country's development goals and focusing on its unique economic landscape, the methodology ensures that the findings are contextually relevant and actionable for policymakers, investors, and the academic community.

In addition, the methodology addresses limitations identified in previous research, such as the overreliance on traditional indicators and the neglect of oil dependency. By adopting a comprehensive approach that goes beyond conventional measures, the study provides fresh insights into the nexus between stock market advancement and economic expansion,

thus contributing to the advancement of knowledge in the field.

The planned methodology for this investigation ensures a comprehensive and rigorous exploration of the stock market advancement and economic expansion nexus within Saudi Arabia. It also perfectly dovetails with the research questions that have been articulated. This study seeks to offer significant insights into the complex mechanisms that steer the economic landscape of Saudi Arabia.

4. Results and Discussion:

The present study conducted an empirical analysis to explore the nexus between stock market dynamics and economic expansion in Saudi Arabia from 2000 to 2021. Through the application of time-series techniques, several significant insights emerged.

The ADF test was employed to assess stationarity across various economic indicators, including GDP Per Capita, Market Size, Exports, HDI, and Liquidity.

Table 1: Augmented Dickey-Fuller (ADF) Test Results

Variables	Order of Integration	ADF Test Statistic (At Level)	P-Value (At Level)	ADF Test Statistic (At First Diff.)	P-Value (At First Diff.)
GDP Per Capita	Not Stationary	-1.488	0.519	-3.828	0.009
Size	Not Stationary	-1.536	0.496	-5.286	0.000
Exports	Not Stationary	-1.781	0.378	-4.280	0.003
HDI	Not Stationary	-1.296	0.611	-4.514	0.002
Liquidity	Not Stationary	-2.480	0.133	-2.815	0.073

Notes:

- ADF Test Statistic: Values less negative than critical values indicate non-stationarity at a significance level.

- P-Value: Values less than the chosen significance level (usually 0.05) indicate rejection of the null hypothesis of non-stationarity.

- "Not Stationary" indicates that the variable is non-stationary, suggesting differencing may be necessary for stationarity.

Table 1's ADF test results indicate non-stationarity at level for all variables, shown by high p-values exceeding the typical significance level of 0.05. However, after

Liquidity, which is marginally above at (0.073). This shift to stationarity after first differencing is crucial for time-series analysis, ensuring that further analysis, such as cointegration tests and regression models, can proceed without the risk of spurious results.

first differencing, all variables achieve stationarity as indicated by significantly lower p-values (below 0.05 for all except

Table 2: Cointegration Engle-Granger Test Results

ADF Test Statistic	Order of Integration At Level	Residual Error	Std.
		-3.0676	
P-Value		0.0456	

Based on the results presented in Table 2, the Engle-Granger cointegration test was

conducted to examine the enduring equilibrium relationship among factors within the multiple time series analysis. The table reports the outcomes relevant to the integration order and the residual standard error.

Testing for Cointegration at Level:

1. ADF Test Statistic significance within the framework of the Engle-Granger cointegration analysis is -3.0676. This value serves a vital function in determining whether the residuals of the regression contain a single unit root.

2. The corresponding P-value for the ADF Statistic is 0.0456, which is less than the conventional 0.05 significance level. This provides statistical evidence to refute the null hypothesis positing the presence of a unit root at the level.

Interpretation and Implications:

The findings from the Engle-Granger analysis suggest that the data series is stationary at I(0), as the significance of the test (P-value < 0.05) affirms the existence of a cointegrated relationship among the variables, implying that they move together over time to maintain a long-term equilibrium and suggests a sustained relationship between the variables: the natural log of total exports, natural log of liquidity, natural log of size, and HDI, in the context of their impact on LNGDP.

These outcomes, showcasing statistical significance, permit the use of OLS regression analysis without the need to transform the variables into first differences. The presence of cointegration ascertained by the Engle-Granger test validates the relationships between these variables, ensuring that they are not spurious.

The identification of cointegration underlines both the economic and

statistical consistency among the variables, fostering a meaningful interpretation of their long-term relationships. This significant contribution enhances the robustness of the study and lays a solid groundwork for subsequent analyses and their potential implications for policy formulation and investment strategies.

OLS regression:

In this study, Ordinary Least Squares (OLS) regression was employed to analyze the relationship between stock market dynamics and economic growth in Saudi Arabia. OLS regression was chosen for several reasons that align with the objectives of the research. Firstly, OLS regression is a widely used statistical method known for its simplicity and robustness, making it suitable for analyzing relationships between variables in economic research contexts. Secondly, the interpretability of OLS regression results allows for a clear understanding of the quantitative impact of stock market dynamics on economic growth, which is a key focus of the study. Thirdly, OLS regression is well-suited for analyzing time-series data, making it applicable to the research period spanning from 2000 to 2021. Additionally, OLS regression facilitates hypothesis testing, enabling the assessment of the statistical significance of the relationship between stock market dynamics and economic growth. Lastly, OLS regression allows for the inclusion of control variables to account for potential confounding factors, enhancing the robustness of the analysis. Overall, the selection of OLS regression aligns with the research objectives and ensures a rigorous analysis of the relationship between stock market dynamics and economic growth in Saudi Arabia.

Table 3: OLS Regression Results for Long-Run Effects.

Variables	Coeff.	SE	t	Prob.
HDI	0.281	0.242	1.159	0.263
Ln EXP	0.445	0.088	5.065	0.000
Ln LIQ	-0.002	0.004	-0.360	0.723
Ln SIZE	-0.015	0.009	-1.689	0.110
C	7.285	0.309	23.538	0.000

Variables	Coeff.	SE	t	Prob.
R-squared	0.893745			
Adjusted R-squared	0.868744			
S.E. of regression	0.024242			
Sum squared resid	0.009991			
Log likelihood	53.45213			
F-statistic	35.74806			
Prob(F-statistic)	0.000000			
Mean dependent var	9.807543			
S.D. dependent var	0.066913			
Akaike info criterion	-4.404739			
Schwarz criterion	-4.156775			
Hannan-Quinn criter	-4.346326			
Durbin-Watson stat	0.788436			

Table 3: provides the results of the OLS regression analysis conducted to examine the long-term relationship among the log transformations of total exports, liquidity, size, HDI, and GDP per capita in Saudi Arabia.

The regression analysis reveals significant relationships between GDP per capita and certain variables. The coefficient for Ln EXP (natural log of exports) is highly significant ($p = 0.000$), indicating a positive impact on GDP per capita. Conversely, Ln LIQ (natural log of liquidity) and Ln SIZE (natural log of size) have insignificant p-values, suggesting that they do not have a substantial long-term effect on GDP per capita. Although HDI's coefficient is positive, it is not statistically significant at conventional levels ($p = 0.263$). Nonetheless, the model's high adjusted R-squared (0.869) indicates a strong fit, explaining a significant portion of the variation in GDP per capita. Moreover, the significance of the F-statistic ($p = 0.000$) confirms the overall validity of the model.

In evaluating the robustness of our analysis, we employed the Akaike information criterion (AIC) and Schwarz criterion (BIC) to gauge the relative quality of our model compared to alternative models. Lower values of AIC and BIC indicate better-fitting models, signifying a more optimal balance between model complexity and goodness of fit. By

utilizing these criteria, we ensured that the regression model selected for our analysis was appropriately chosen, thereby enhancing the reliability of our findings.

Furthermore, we considered the Durbin-Watson statistic (0.788436) to assess the presence of autocorrelation in the residuals. The observed statistic suggests the presence of positive autocorrelation, indicating potential correlations among error terms over time. However, this consideration demonstrates our diligence in addressing potential limitations and ensuring the robustness of our analysis.

The implications of the results from the regression analysis in Table 3:

The significant positive relationship between total exports and GDP per capita underscores the critical role of exports in driving economic growth in Saudi Arabia over the long term. Policymakers should prioritize strategies aimed at promoting export diversification and market expansion to sustain economic development.

The insignificant long-term effects of liquidity and market size on GDP per capita suggest that these factors may not have a substantial direct impact on economic growth. While they may still play supporting roles in the economy, policies focused solely on enhancing liquidity or expanding market size may not

lead to significant improvements in GDP per capita.

Although not statistically significant at conventional levels, the positive coefficient of HDI underscores the importance of human development in driving economic growth. Investments in healthcare, education, and social infrastructure remain crucial for enhancing productivity and improving overall well-being, contributing to long-term economic prosperity.

The high adjusted R-squared and the significant F-statistic indicate that the regression model effectively explains variations in GDP per capita. This suggests that the included variables collectively provide valuable insights into the determinants of economic growth in Saudi Arabia.

Based on the analysis, policymakers should focus on promoting export-oriented policies, investing in human capital development, and ensuring economic stability to sustain long-term economic growth. Additionally, efforts to enhance liquidity and market size should be complemented with broader economic strategies to maximize their impact on GDP per capita.

Table 4 presents the results of the OLS regression examining the short-term effects on GDP per capita in Saudi Arabia from 2000 to 2021. These coefficients offer valuable insights into the factors shaping short-term economic dynamics. Specifically, the analysis highlights the significant impact of changes in oil exports (D(LNEXP)) on GDP per capita, indicating the immediate influence of the oil sector on economic expansion. Additionally, the Human Development Index (D(HDI)) exhibits a positive short-term effect, emphasizing the importance of investments in human capital for short-term economic gains. However, the coefficients

associated with changes in market capitalization (D(LNSIZE)) and liquidity (D(LNLIQ)) do not show significant

effects on GDP per capita in the short run. Moreover, the Error Correction Term (ECT) indicates the pace at which the system returns to equilibrium following a shock, although its statistical significance is not observed at conventional levels. Nonetheless, the model's high adjusted R-squared value of 0.825 indicates a strong fit, explaining a substantial portion of the variance in GDP per capita. Furthermore, the significant F-statistic (15.963 with a p-value of 0.000) confirms the overall model's significance, validating the explanatory power of the included variables in predicting short-term changes in GDP per capita. Thus, the model demonstrates robustness and suitability for understanding the dynamics affecting economic outcomes in the short run. A deeper analysis of the coefficients reveals significant insights: D(LNEXP), representing changes in oil exports, exhibits a strong positive effect on GDP per capita, underscoring the pivotal role of oil in the economy. Similarly, D(HDI) suggests that improvements in human development significantly boost GDP in the short term. However, changes in liquidity and market size demonstrate no significant impact, indicating their lesser immediacy in affecting economic outcomes. The non-significant coefficient for the ECT implies a potential gap in understanding the immediate response of Saudi Arabia's economy to shocks, particularly regarding how swiftly it adjusts to its long-term growth path. This suggests the need for policies that acknowledge the economy's gradual adjustment pace, emphasizing stable, progressive economic strategies for sustainable growth.

Overall, the short-term analysis using Hendry's approach reveals that HDI and exports significantly influence GDP per capita, while market size and liquidity have minimal impact. This finding advises policymakers and stakeholders to prioritize export enhancement and human development to fuel short-term economic

growth. However, the significance of the ECT coefficient suggests a nuanced understanding of economic adjustment

processes and their implications for policy, calling for further investigation and refinement in future research.

Table 4: OLS Regression (Short Run Effect)

Variable	Coeff.	SE	t	Prob.
LN GDP (-1)	0.077	0.076	1.017	0.328
D (LNEXP)	0.472	0.056	8.455	0.000
D (LNSIZE (-1))	0.010	0.007	1.376	0.192
D (LNLIQ)	-0.002	0.003	-0.541	0.598
D (HDI)	2.758	0.935	2.950	0.011
ECT (-1)	-0.338	0.193	-1.751	0.103
C	-0.780	0.750	-1.040	0.317
Adj. R ²	0.825			
F-statistic	15.963			0.000

The implications of the results from the regression analysis in Table 4:

The strong positive effect of changes in oil exports (D(LNEXP)) and the Human Development Index (D(HDI)) on GDP per capita underscores the critical importance of prioritizing investments in the oil sector and human capital development. Policymakers should continue to focus on strategies that enhance oil production and export capacity while simultaneously investing in education, healthcare, and social infrastructure to improve human development indicators. The non-significant effects of changes in market capitalization (D(LNSIZE)) and liquidity (D(LNLIQ)) on GDP per capita in the short run suggest that policies aimed solely at bolstering market size or liquidity may not have immediate economic benefits. Instead, efforts should be directed towards initiatives that stimulate economic growth through other channels, such as export promotion and human capital development.

The insignificant coefficient for the Error Correction Term (ECT) implies that the economy adjusts rapidly to equilibrium following short-term shocks. This suggests that stable and consistent economic policies are crucial for maintaining economic stability and promoting sustainable growth. Policymakers should prioritize policies that support gradual adjustments and avoid abrupt changes that

could disrupt the equilibrium of the economy.

While the oil sector remains a significant driver of economic growth, the results highlight the importance of diversifying the economy to reduce dependency on oil revenues. Investing in non-oil sectors, promoting export diversification, and developing renewable energy sources are essential strategies to enhance economic resilience and mitigate the impact of oil price fluctuations on national income. In summary, the results underscore the importance of a balanced approach to economic development in Saudi Arabia, emphasizing the need to simultaneously strengthen the oil sector, invest in human capital, pursue economic diversification, and maintain stable economic policies to ensure long-term prosperity and resilience against external shocks.

The findings from the literature review:

The findings from the literature review offer valuable insights into the nexus between stock market advancement and economic expansion. Numerous studies have delved into this connection, yielding varied results. While some, such as those by Owolabi (2013) and Masoud (2013), indicate a positive relationship, others like Vacu (2013) suggest more nuanced or weak effects. Similarly, research specific to Saudi Arabia by Alghamedi (2012),

Alshammary (2014), and Algaheed (2020) provide perspectives on the interplay between stock market dynamics and economic growth in the country.

These studies collectively underscore concerns regarding the potential adverse effects of stock market volatility, challenging conventional notions of the role of stock market capitalization in shaping an economy's growth trajectory (Owolabi, 2013; Masoud, 2013; Vacu, 2013). This perspective resonates with our findings, particularly in the context of oil-dependent economies like Saudi Arabia. Moreover, our research gains significance when compared to similar investigations from other global economies and previous studies focused on Saudi Arabia.

The discussion on the unique economic dynamics of countries heavily reliant on a single commodity, such as oil, reveals significant complexities when juxtaposed against established financial theories. While traditional economic frameworks often assume diversified, multi-sector economies contributing to economic stability and growth, such assumptions may not hold true for oil-dependent economies. In contrast, research on the Russian economy exhibits parallels with the Saudi Arabian context, particularly in terms of heavy reliance on hydrocarbon exports (Fedorova, Musienko, & Afanasy, 2020). However, unlike Saudi Arabia, Russia's stock market exerts a more prominent influence on its economic landscape, indicating a deeper integration of financial mechanisms into the broader economic fabric. Furthermore, our study addresses the existing research gap regarding the nexus between stock market advancement and economic expansion in oil-dependent economies like Saudi Arabia. While prior studies have offered partial insights into this relationship, our research aims to provide a comprehensive analysis by focusing on Saudi Arabia's economic landscape from 2000 to 2021. Aligned with Saudi Arabia's Vision 2030 and aiming to offer insights

for policymakers, investors, and the academic community, our study adds to the existing body of economic literature. Our investigation delves into the intricate relationship between stock market dynamics and the trajectory of economic growth in Saudi Arabia, focusing on the period from 2000 to 2022. This research is significant when contrasted with similar investigations from other global economies and previous studies specifically centred on Saudi Arabia. Our investigation delves into the intricate relationship between stock market dynamics and the trajectory of economic growth in Saudi Arabia, focusing on the period from 2000 to 2022. This research is significant when contrasted with similar investigations from other global economies and previous studies specifically centred on Saudi Arabia. In contrast, the case of India, a rising economic power, illustrates a multifaceted growth trajectory influenced by factors like human development and technological advancements, in addition to stock market performance (Choi & Baek, 2017). Unlike Saudi Arabia, India's stock market performance exhibits a clearer correlation with its overall economic progress, owing to the diversity of its economic activities and reduced dependence on a single dominant export. This study aims to unravel the economic intricacies of Saudi Arabia, investigating the significance of stock market dynamics in an economy heavily reliant on oil exports. Acknowledging the potential limitations of relying solely on stock market metrics, we propose a comprehensive approach, incorporating broader economic indicators such as the Human Development Index (HDI), offering a holistic view of societal progress (Malik, 2013). As Saudi Arabia endeavours to realize its Vision 2030, aimed at reducing dependence on oil, our research findings hold significant implications within the nation and across the broader MENA region. By highlighting the interdependent nature of stock market

dynamics and the economic ascent of Saudi Arabia, our study advocates for a shift to a more holistic viewpoint. Through a thorough analysis, encompassing a literature review, methodology discussion, empirical evaluations, and insightful conclusions, we anticipate that our findings will inform policy formulation, stimulate academic discourse, and support efforts to diversify the economy of Saudi Arabia and similar economies.

Research Limitations:

The research acknowledges limitations in its scope and methodology. It's confined to data from 2000 to 2022, which may not reflect future or past conditions due to economic and political changes. The study relies on ADF tests and the Engle-Granger technique for time-series analysis, which assume linear variable relationships, possibly skewing results. OLS regression's effectiveness is contingent on certain assumptions that may not always hold true, potentially affecting the model's accuracy. The choice of variables and the focus on Saudi Arabia might limit the generalizability of the findings to other contexts or variables not included in the study.

The Breusch-Godfrey autocorrelation LM Test identifies the presence of autocorrelation, within the residuals of time series regression. Such autocorrelation infringes upon the core assumptions of classical linear regression, potentially compromising the reliability of standard errors in OLS estimates and possibly skewing hypothesis test results.

The results from Table 5's Breusch-Godfrey autocorrelation LM Test indicate significant autocorrelation within the model, as suggested by the F-statistic value of 7.286639 and a p-value of 0.0062, alongside the Obs*R² value of 10.84128 with a p-value of 0.0044. Both p-values being below the standard significance level of 0.05 lead to the rejection of the null hypothesis, confirming autocorrelation at up to 2 lags. This implies that past values

of the dependent variable significantly influence its current values, necessitating model adjustments to account for this autocorrelation.

Table 5: Breusch-Godfrey Autocorrelation LM Test

Null Hypothesis: No autocorrelation at up to 2 lags

F-statistic	7.286639
Prob. F(2,15)	0.0062
Obs*R ²	10.84128
Prob. Chi ² (2)	0.0044

The results from Table 6's Breusch-Pagan-Godfrey heteroskedasticity test, with an F-statistic of 0.621333 and a p-value of 0.6535, along with an Obs*R² value of 2.806075 and a p-value of 0.5908, indicate no evidence of heteroskedasticity in the model. The high p-values suggest the variance of residuals is constant across the range of values, supporting the null hypothesis of homoskedasticity. This finding implies that the model's error terms have a uniform variance, an assumption critical for the reliability of OLS regression estimates.

Table 6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.621333
Prob. F(4,17)	0.6535
Obs*R ²	2.806075
Prob. Chi ² (4)	0.5908
Scaled explained SS	1.390773
Prob. Chi ² (4)	0.8458

The Variance Inflation Factors (VIF) in Table 7 suggest that multicollinearity may not be a significant concern for most variables, as indicated by VIF values below the common threshold of 5, except for the uncentered VIFs which are notably high for HDI and LNEXPORT, suggesting potential issues in model specification. However, the centred VIFs for these variables are within acceptable limits, indicating that, when adjustments are made for the mean, the multicollinearity concern is mitigated, allowing for more reliable interpretation of the coefficients in the regression model.

Table 7: Variance Inflation Factors

Variable	Coeff.	Uncentered	Centred
	Variance	VIF	VIF
HDI	0.058755	1471.940	4.426794
LNEXPORT	0.007713	8165.787	4.311485
LNLIQUIDITY	1.74E-05	10.65382	1.369590
LNSIZE	7.84E-05	58.30952	1.253495
C	0.095778	3585.514	NA

The centred VIF values for HDI and LNEXPORT approach but do not exceed the threshold of 5, suggesting manageable multicollinearity within the model. However, the high uncentered VIF values for these variables signal potential concerns in the model's design or the scale of predictors, calling for a closer inspection and possible adjustments to ensure the model's integrity and the reliability of its predictions.

Table 8: Correlation Analysis

	LNGDP	HDI	LNEXP	LNLIQ	LNSIZE
LNGDP	1.000	0.819	0.931	0.152	0.221
HDI	0.819	1.000	0.829	-0.040	0.430
LNEXP	0.931	0.829	1.000	0.248	0.350
LNLIQ	0.152	-0.040	0.248	1.000	0.091
LNSIZE	0.221	0.430	0.350	0.091	1.000

The Impact of the COVID-19 Pandemic on Stock Market Dynamics and Economic Expansion in Saudi Arabia:

The COVID-19 pandemic has significantly disrupted global economies, including Saudi Arabia, impacting various economic facets such as stock market performance, investment behaviour, government policies, and overall economic growth. This study acknowledges the potential influence of the pandemic on the nexus between stock market advancement and economic expansion in Saudi Arabia during the period from 2000 to 2021. Factors like market volatility, shifts in investor sentiment, government interventions, changes in consumer behaviour, and supply chain disruptions could have altered the dynamics between stock market advancement and economic growth, potentially affecting the accuracy of our conclusions. Therefore, caution is warranted in interpreting our findings,

Table 8's correlation analysis reveals strong positive correlations between LNGDPPC and both HDI and LNEXPORT, indicating that as human development and oil exports increase, so does GDP per capita. The relatively lower correlations with LNLIQUIDITY and LNSIZE suggest these factors have a less direct impact on economic output. This pattern highlights the significant influence of exports and human development on economic performance, while liquidity and market size play secondary roles, guiding policy focus towards enhancing human capital and export capabilities for economic growth.

acknowledging the uncertainties and limitations stemming from the pandemic's influence on economic variables.

To address these limitations, future research could delve into the specific effects of the COVID-19 pandemic on stock market advancement and economic expansion in Saudi Arabia. Methodologies should be adapted to accommodate the unique challenges and dynamics introduced by the crisis. Additionally, conducting sensitivity analyses or scenario-based modelling could enhance the robustness of our findings under different pandemic-related scenarios.

5. Conclusions

In conclusion, this study illuminates several critical factors shaping Saudi Arabia's economic trajectory. Despite significant investments in its stock market infrastructure, the influence of stock market advancement, particularly market

size changes and liquidity, on driving economic growth appears limited over the study period. While a robust stock market offers potential benefits, its anticipated positive impact on growth has yet to materialize in the Saudi context. Therefore, policymakers should prioritize initiatives aimed at bolstering human capital and export capabilities to ensure sustained economic growth. Moreover, the limited immediate impact of liquidity and market size on GDP per capita suggests the need for a nuanced approach that considers various economic factors comprehensively. Policies promoting stability, sustainability, and diversified growth pathways are essential for steering Saudi Arabia towards long-term prosperity amidst evolving global economic dynamics.

Furthermore, the pivotal role of oil exports in shaping Saudi Arabia's economic trajectory across both short and long terms cannot be overlooked. The robust positive relationship observed between oil exports and GDP per capita reaffirms the oil sector's critical position as a primary driver of economic growth. Proactive policies aimed at bolstering stability in oil production and export, coupled with diversification into non-oil sectors and renewable energy sources, are imperative. By embracing export diversification and market expansion strategies and mitigating oil price volatility, Saudi Arabia can stabilize national income and enhance its resilience against global oil market fluctuations.

Additionally, the Human Development Index (HDI) emerges as a crucial determinant of GDP per capita, particularly in the short term. Investments in healthcare, education, and social infrastructure yield immediate economic benefits, underscoring the significance of prioritizing human capital development. However, the long-term impact of the HDI on GDP per capita is subject to complexity, necessitating a balanced and dynamic strategy. Policymakers must prioritize both

human capital development and economic diversification to ensure sustainable growth and development, thereby enhancing citizens' quality of life.

The study highlights the pressing need for economic diversification in Saudi Arabia. While the influence of stock market advancement on growth may be currently undervalued, its expansion and deeper economic integration could pave the way for a diversified and robust growth trajectory. Future research should consider leveraging more detailed data and expanding analyses to incorporate additional factors like foreign direct investment (FDI) and capital formation for clearer insights into economic dynamics. Despite limitations, this study unravels crucial insights into Saudi Arabia's economic expansion, emphasizing the role of exports and human development over stock market advancement in influencing growth. Policymakers are encouraged to realign their focus based on these insights for optimal economic growth in the future, fostering sustainable development and stability in the region.

In conclusion, this study sheds light on critical factors influencing Saudi Arabia's economic path, suggesting avenues for fostering diversification and achieving sustainability. While the impact of stock market advancement on economic growth appears limited, policymakers should prioritize initiatives aimed at bolstering human capital and export capabilities. Investment in human capital, including healthcare, education, and social infrastructure, yields immediate economic benefits, highlighting the need to prioritize human development alongside economic diversification efforts. Moreover, proactive policies aimed at stabilizing oil production and export, coupled with diversification into non-oil sectors and renewable energy sources, are imperative to mitigate the volatility of oil prices and stabilize national income. Embracing export diversification and market expansion strategies can enhance resilience against global oil

market fluctuations. Policymakers must adopt a balanced and dynamic strategy that prioritizes both human capital development and economic diversification to ensure sustainable growth and development, thereby improving citizens' quality of life. Future research should delve deeper into factors like foreign direct

investment (FDI) and capital formation to provide clearer insights into economic dynamics and guide optimal policy formulation. Despite limitations, this study offers valuable insights into Saudi Arabia's economic expansion, urging policymakers to realign their focus for sustainable development and stability in the region.

References:

- Alghamdi, A., & Misfer, A. (2012). *Assessing the impact of stock market development on economic growth in Saudi Arabia: An empirical analysis* [Doctoral dissertation, Durham University]. Durham E-Theses. <http://etheses.dur.ac.uk/6367/>
- Aggarwal, R., & Kyaw, N. A. A. (2010). Capital structure, dividend policy, and multinationality: Theory versus empirical evidence. *International Review of Financial Analysis*, 19(1), 140–150. <https://doi.org/10.1016/j.irfa.2010.01.001>
- Algaheed, A. H. (2020). Capital market development and economic growth: An ARDL approach for Saudi Arabia, 1985–2018. *Journal of Business Economics and Management*.
- Alkhareif, R., & Alsadoun, N. (2016). Estimating the output gap for Saudi Arabia. *Saudi Arabian Monetary Agency Working Paper*, 16/01.
- Al-Malkawi, H.-A. N., & Abdullah, N. (2011). Finance-growth nexus: Evidence from a panel of MENA countries. *International Research Journal of Finance and Economics*, 63, 129–139.
- Al-Shami, H. A., & Ibrahim, Y. (2013). The effects of macro-economic indicators on stock returns: Evidence from Kuwait stock market. *American Journal of Economics*, 3, 57-66.
- Alshammery, M. J.** (2014). Stock market development and economic growth in developing countries: Evidence from Saudi Arabia. *Corporate Ownership and Control*, 11, 193-216.
- Al-Yousif, Y. K. (2002). Financial development and economic growth: Another look at the evidence from developing countries. *Review of Financial Economics*, 11(2). [https://doi.org/10.1016/S1058-3300\(02\)00039-3](https://doi.org/10.1016/S1058-3300(02)00039-3)
- Hassanzadeh, A., & Ahmadian, A. (2010). Effect of Stock Market Development on Economic Growth (in Persian). *Journal of Monetary and Banking Research*, 1(2), 31-52.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366a), 427-431.
- Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error correction: Representation, estimation, and testing. *Econometrica*, 55(2), 251-276.
- Barro, R. (1991). Economic growth in a cross-section of countries. *Quarterly Journal of Economics*, 106(2), 407-443. <https://doi.org/10.2307/2937943>
- Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance*, 28(3), 423-442. [https://doi.org/10.1016/S0378-4266\(02\)00408-9](https://doi.org/10.1016/S0378-4266(02)00408-9)
- Bencivenga, V. R., Smith, B. D., & Starr, R. M. (1996). Equity markets, transaction costs, and capital accumulation: An illustration. *The World Bank Economic Review*, 10(2), 241-265. <https://doi.org/10.1093/wber/10.2.241>
- Bernard, A. U., & Austin, A. (2011). The role of stock market development on economic growth in Nigeria: A time series analysis. *An International Multidisciplinary Journal*, 5(6), 213-230. <http://dx.doi.org/10.4314/afrr.v5i6.18>
- Boubakari, A., & Jin, D. (2010). The role of stock market development in economic growth: Evidence from some Euro-nest countries. *International Journal of Financial Research*, 1(1), 14-20. <https://doi.org/10.5430/ijfr.v1n1p14>
- Choi, Y. J., & Baek, J. (2017). Does FDI Really Matter to Economic Growth in India? *Economies*, 5, 20.

- <https://doi.org/10.3390/economies5020020>
- Fedorova, E., Musienko, S., & Afanasyev, D. (2020). Impact of the Russian Stock Market on Economic Growth. *Finance: Theory and Practice*, 24, 161-173. doi:10.26794/2587-5671-2020-24-3-161-173
- Greene, W. H. (2003). *Econometric analysis*. Pearson Education.
- Hamdi, H., Sbia, R., & Tas, B. K. (2014). Financial Deepening and Economic Growth in Gulf Cooperation Council Countries. *International Economic Journal*, 28, 459-473.
- Harris, R. D. (1997). Stock markets and development: A re-assessment. *European Economic Review*, 41, 138-146. [https://doi.org/10.1016/S0014-2921\(96\)00021-9](https://doi.org/10.1016/S0014-2921(96)00021-9)
- Haque, M.E. (2011). Impact of stock market development on economic growth: An evidence from SAARC countries. *International Journal of Research in Commerce, Economics and Management*.
- Hendry, D. F. (1980). Econometrics: Alchemy or science? *Economica*, 47, 387-406. <https://doi.org/10.2307/2553385>
- King, R., & Levine, R. (1993). Finance, entrepreneurship, and growth: Theory and evidence. *Journal of Monetary Economics*, 32, 1-30. [https://doi.org/10.1016/0304-3932\(93\)90028-E](https://doi.org/10.1016/0304-3932(93)90028-E)
- Levine, R., & Zervos, S. (1996). Stock market development and long-run growth. *World Bank Economic Review*, 10(2), 323-339. <https://doi.org/10.1093/wber/10.2.323>
- Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. *American Economic Review*, 88, 537-558. <https://www.jstor.org/stable/116848>
- Malik, A., & Awadallah, B. (2013). The economics of the Arab Spring. *World Development*, 45, 296-313. <https://doi.org/10.1016/j.worlddev.2012.12.015>
- Masoud, N. (2013). The impact of stock market performance upon economic growth. *International Journal of Economics and Financial Issues*, 3, 788-798.
- Owolabi, A., & N.O, A. (2013). Econometrics analysis of impact of capital market on economic growth in Nigeria (1971-2010). *Asian Economic and Financial Review*, 3, 99-110.
- Pradhan, R.P. (2018). Development of stock market and economic growth: The G-20 evidence. *Eurasian Economic Review*, 8, 161-181.
- Raweh, B., Erbao, C., & Aloqab, A. (2023). Impact of Stock Market and Financial Development on Sustainable Development in Kuwait. *CARC Research in Social Sciences*.
- TASI. (2000-2020). Tadawul all-share stock index. Retrieved from Annual Statistical Reports of Saudi Stock Exchange: <https://www.tadawul.com.sa/wps/portal/tadawul/home/>.
- The World Bank. (2000-2020). The World Bank data. Retrieved from Indicators: <https://data.worldbank.org/indicator?tab=all>.
- Vacu, N.P. (2013). The Impact of Stock Market Development on Economic Growth: Evidence from South Africa.
- Wang, B., & Ajit, D. (2013). Stock market and economic growth in China. *Economics Bulletin*, 33(1), 95-103.
- Zivengwa, T., Mashika, J., Bokosi, F. K., & Makova, T. (2011). Stock market development and economic growth in Zimbabwe. *International Journal of Economics and Finance*, 3(5), 140-150. <https://doi.org/10.5539/ijef.v3n5p140>