Exploring the Dynamic Linkages between Macroeconomic Indicators and Stock Market Performance in Jordan

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ABSTRACT

Purpose: This study aims to explore the causal relationship between gross domestic product, inflation rate, and Stock Prices in Jordan over both short- and long-term from 2008 to 2023.

Design/Methodology/Approach: The study applies a Vector Error Correction Model (VECM) to analyze monthly data spanning from 2008 to 2023.

Findings: The findings reveal evidence of bidirectional long-run causality between gross domestic product and stock prices, and a unidirectional long-run causality from inflation to stock prices in Jordan. It confirms the stock market's dual role as both a reflection of and a contributor to macroeconomic performance. In the short-run, the results show limited causality from gross domestic product, but more significant short-run effects of inflation on both gross domestic product and stock prices, and from stock prices to inflation.

Recommendation: The recommendation highlights the importance of improved coordination among monetary, fiscal, and financial regulatory authorities to achieve two key objectives: macroeconomic stability and the growth of capital markets

Index terms: Gross Domestic Product, Inflation Rate, Stock Prices, Vector Error Correction Model.

1-Introduction:

Understanding the factors that influence stock market behavior has been a longstanding topic of debate for among economists, policymakers, and financial analysis. The stock market plays a vital role in economic development of countries, acting as barometer of economy. Consequently, identifying the key macroeconomic variables that affect stock prices is essential for investors and regulators.

The relationship between macroeconomic variables and the stock market is complex and multifaceted. According to semi-strong form of the efficient market hypothesis (EMH), stock price reflects all available information, including macroeconomic fundamentals like gross domestic product (GDP) and inflation (INF). Therefore, any new macroeconomic information is quickly reflected in stock prices, implying that macroeconomic variables may lead to the stock price movements.

Several economic theories support the idea that macroeconomic fundamentals influence stock market behavior. The Fisher effect suggests that nominal interest rates, and by extension, stock returns, should rise in response to expected inflation to maintain real returns. Meanwhile, the quantity theory of money and models of the inflation dynamics argue inflation is mainly a monetary phenomenon that may not be directly influenced by real activity or asset prices.

Discounted cash flow models further support the link between macroeconomic conditions and stock prices by positing that stock prices reflect the present value of expected future cash flows. These cash flows are effected by economic variables such as GDP and INF, which influence both earnings expectations and discount rates, and, as a result, stock prices.

Additionally, Monetarist perspectives emphasize the role of the money supply in affecting INF and interest rates, which in turn affect stock prices. Business life cycle theories also suggest that the expansion or contraction of economic activity affects corporate profits and investor expectations, and consequently, stock price trends.

However, Rational expectations theory argues that Stock prices aggregate investor's expectations about the future, potentially making them useful predictors of real economic activity.

Moreover, wealth effect and Tobin's Q theory indicates that increases in stock price can stimulate consumer spending and business investment, which in turn influences macroeconomic variables like GDP and employment.

While many studies have explored the impact of macroeconomic variables on the stock market in developed economies, there is relatively limited empirical research in emerging markets such as Jordan. In particular, the bidirectional and dynamic nature of the relationship between macroeconomic indicators and stock prices in such context remains underexplored. This study aims to address this gap by examining the causal relationship between GDP, INF, and stock prices in Jordan.

2-Literature Review: Theory and Hypotheses Development

The relationship between (GDP), (INF) and stock prices (INDEX), has been widely studied, yet a consensus on the directionally and strength of these relationship remain elusive. Evidence from previous studies indicates that these relationships can be bidirectional and context-dependent.

GDP growth is typically associated with a robust economic environment, which leads to higher corporate earnings and, consequently rising stock prices. (Chen et al, 1986) incorporated GDP in their multifactor model, highlighting its importance in predicting stock returns. Similarly, (Fama 1990) reported a positive correlation between stock returns and future economic activity, including GDP growth.

However, rising stock prices can enhance household wealth, stimulating consumption contributing to GDP growth. Moreover, higher stock valuation can reduce the cost of equity capital, thereby encouraging capital investment. (Morck et al, 1990) found that stock market trends influence corporate investment decisions, while (Rousseau et al, 2000) emphasized the role of financial markets in stimulating economic growth via better capital allocation. (Aresitis et al, 2001) further confirmed that stock market development has a long-run positive effect on GDP across both developed and developing countries.

The effect of INF on Stock prices is more ambiguous. According to (Fisher 1930) stocks should act as a hedge against INF. Moderate inflation coupled with stable unemployment rate can bolster consumer confidence and economic growth, thereby supporting stock market performance. (Alagidede 2009) found a positive relationship between INF and stock returns in Kenya and Nigeria confirming generalized Fisher effect. (Hasan 2008) provided similar evidence from the UK, and (Hamamala et al, 2016) observed consistent results in Sri Lanka.

However, other studies present a contrasting view. (Fama et al, 1977), argued that inflation reduces real returns, while (Geske et al, 1983) noted that monetary policy responses to INF further complicate its effect on stock prices.

However, high inflation often reduces purchasing power and corporate profits, negatively impacting stock prices. (Rapach 2002), indicated that inflation is generally negatively to real stock returns in both developed and developing markets.

In addition, rising stock markets can stimulate consumption and investment, leading to demand-pull inflation. Also, speculative bubbles can lead to overheating in the economy, raising price level. (Rapach 2001) found that US stock returns can forecast inflation, suggesting that stock price movements contain information about future price changes.

In the context of Jordan, several empirical studies have examined the interplay between macroeconomic variables and stock market performance. (Bekhet et al, 2013), applied co-integration and causality tests on data from 1978 to2010, revealing a long-run equilibrium between the stock price index and money supply, industrial production exchange rate, and discount rate. (Alnader et al, 2013), used monthly data from 1990 to 2011, and found that money supply, INF, GDP, credit to the private sector positively influence stock market development in both the long and short-run. (Almajali et al, 2014) using quarterly data from 1992 to 2014, reported a bidirectional long-run causality between the Amman stock exchange index and key macroeconomic variables, including GDP, INF. (Dayyat et al, 2016), confirmed significant Granger causality from INF to the Amman stock exchange index using monthly data from 2002 to 2015. (Ramadan 2016) analyzed annual data from 2000 to 2014 for found that interest rate, INF, significantly impact equity prices. More recently, (Ghazo et al, 2021) employed GARCH models to show that industrial production and portfolio investment positively lead Amman stock exchange price fluctuations, while real interest rate, real foreign exchange rate, and oil price lead in the opposite direction.

Despite this body of research, further analysis is needed to clarify the direction and magnitude of the causal relationships among GDP, INF, and stock prices in the Jordanian context.

3–Research Questions:

This study aims to address the primary question: Is there a causal relationship between GDP, INF, and the stock market index in both the short and long term in Jordan? From this primary question, the following sub-questions emerge:

-Is there a causal relationship between GDP, INF, and the stock market index in the long term in Jordan?
-Is there a causal relationship between GDP, INF, and the stock market index in the short term in Jordan?
-Is the relationship between GDP, INF, and the stock market index unidirectional or bidirectional?
-Which one drives the other: GDF, INF, or the stock market index in Jordan?

4-Research Objectives:

This study aims to determine whether a causal relationship exists between GDP, INF, and the stock market in Jordan, both in the short and long term. This overarching aim gives rise to the following sub-objectives:

- To determine the extent of the causal relationship between GDP, INF and, the stock market index in the long –term in Jordan.
- To assess the extent of the causal relationship between GDP, INF and, the stock market index in the short –term in Jordan.
- To evaluate the strength and direction of the relationship between GDP, INF, and the stock market index.
-To identify the influencing and influenced variables in the relationship between GDP, INF, and the stock market index.

5-Research Significance:

The significance of this study is twofold: theoretical and practical. Theoretically, the study contributes to the literature by exploring both the long-run equilibrium and short-run dynamics among key macro-financial variables in a single framework. In addition, unlike previous studies that often rely on annual or quarterly data, this paper uses monthly observations, offering a more granular and responsive analysis of economic and market relationships. Moreover, the use of a vector error correction model (VECM) is particularly important as it captures both the short-term deviations and long-term adjustments in the relationship among the variables.
Practically, the Jordanian economy has undergone considerable changes in the past decade due to internal reforms and external shocks. In addition, understanding how GDP, INF, and stock prices interact provides valuable insight into economic resilience, investor's behavior, and market predictability in such a volatile context. Moreover, this research can guide Jordanian policymakers, investors, and regulators on how monetary and fiscal policies affect financial markets, and vice versa.

6-Research Philosophy and Approach and Data:

The study adopts a positivist research philosophy, emphasizing objectivity and the use of empirical data. It follows a deductive approach based on established theories and prior empirical findings. The research design is explanatory, utilizing monthly data analysis.
The key variables selected for analysis are Gross Domestic Product (GDP), Inflation rate (INF), and Stock market index.
The GDP was selected because it is one of the most comprehensive indicators of economic variables, while INF was selected because it influences both monetary policy and investment behavior.
The study follows a structured econometric approach based on time-series analysis, aimed at detecting both causality and co-integration among the variables. The first step is to calculate descriptive analysis, then Phillips-Perron unit root test was applied to determine stationary, after that lag selection was selected using standard information criteria (LR, FPE, AIC, SC, HQ), and Johanson co-integration test was used to assess the existence of long-term relationships among the variables, finally vector error correction model was employed to distinguish between short-run fluctuations and long-run causal relationships.

7. Research Hypotheses:

H1: There is a significant long-run causal relationship between GDP and stock prices in Jordan.
H2: There is a significant long-run causal relationship between INF and stock prices in Jordan.
H3: There is a significant short-run causal relationship between GDP and stock prices in Jordan.
H4: There is a significant short-run causal relationship between INF and stock prices in Jordan.

8- Descriptive Statistics:

The analysis revealed that the mean of the Jordanian stock market index was 2245.453, while the mean of GDP and INF was 6707.195, 93.27239, respectively, during the period from 2008 to 2023.
Furthermore, the Jarque-Bera test indicated a significance level of less than 0.05, which suggests that the data did not conform to a normal distribution.

Table (1): Descriptive statistics of return on assets and current ratio during the study period

	INDX	GDP	INF
Mean	2245.453	6707.195	93.27239
Jarque-Bera	951.3392	6.930351	9.025300
Probability	0.000000	0.031268	0.010969
Number of observations	192	192	192

9- Test of Stationarity:

To assess the stationarity of the variables, the Phillips-Perron unit root test was utilized on the time series data at both the level and first difference. This test is advantageous as it accommodates heterogeneous autoregressive parameters across cross-sections and demonstrates greater robustness against serial correlation compared to traditional Augmented Dickey-Fuller (ADF) tests (Mandala et al,1999). The null hypothesis for this test posited that the time series contains a unit root, indicating non-stationarity, while the alternative hypothesis asserted that the time series is stationary. The test was conducted with individual intercepts and trends for INDEX and INF, while (GDP) was applied with only a constant. The findings revealed that all variables were non-stationary at the level ($P > 0.05$) and became stationary at the first difference ($P < 0.05$). This result underscores the importance of differencing the data to achieve stationarity, which is a prerequisite for further analysis in the study, which will be a VECM model.

Table (2): Unit Root Test result

Level			
variables	T statistic	prob	result
GDP	-1.587641	0.4869	Non Stationary
INF	-2.575638	0.2920	Non Stationary
INDEX	-2.759904	0.2142	Non Stationary
First Difference			
GDP	-13.83561	0.0000	stationary
INF	-14.98342	0.0000	stationary
INDEX	-13.94970	0.0000	stationary

3- Selection of optimal lag order:

After testing stationarity and confirming the order of integration, it is very important in the context of co-integration analysis to select optimal lag length that is also significant to develop the vector error correction model (VECM). For the general VAR model, the (LR, FPE, AIC, SC, HQ) information criteria were used to determine the selection of the model with a 2-Lag selection. Table 3 presents the outcome of the optimum lag length order based on three criteria. It is found that the optimum lag length order based on the entire criterion is (4).

Table (3): Selection of optimal lag order result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3511.476	NA	3.47e+12	37.38804	37.43968	37.40896
1	-2660.219	1666.290	4.45e+08	28.42786	28.63444	28.51156
2	-2655.308	9.455400	4.65e+08	28.47137	28.83288	28.61784
3	-2648.470	12.94889	4.76e+08	28.49436	29.01082	28.70361
4	-2580.657	126.2487*	2.55e+08*	27.86869*	28.54008*	28.14071*

4- **Test of co-integration:**

Co-integration refers to a situation in which two or more non-stationary variables share a stable, long-term relationship, despite individual short-term fluctuations or trends. This implies that even if the variables may exhibit volatility in the short-run, their shared trajectory remains consistent over a longer period.

In the context of economic analysis, co-integration suggests that such variables move together along a long-run equilibrium path, making it essential for accurate modeling and forecasting. Understanding co-integration allows analysts to capture the enduring nature of relationships between variables while accounting for their long-term characteristics.

We will examine the co-integration using Johansen co-integration test.

The null hypothesis: There is no co-integrating equation.

The alternative hypothesis: There is a co-integration equation.

The result of the Trace test with lag (1) indicates at least 2 co-integrating equation (s) at the (0,05) level. In addition, the result of the maximum eigenvalue indicates at least 1 co-integration equation (s) at the (0,05) level.

5- The Panel Vector Error Correction Model:

The existence of co-integration between INDEX, GDP, and INF indicates a long-term stable relationship between them and the feasibility of using the vector error correction model. VECM models help model short-run deviations from long-run equilibrium relationships between series. The main idea of VECM is to model the short-term dynamics of time series, taking into consideration the long-term equilibrium between them.

Our analysis has three models, based on the dependent variable corresponding to the other variable. In the first model, the index is considered the dependent variable, while GDP, INF are considered the dependent variables in the second and third models, respectively. The number of lags is 4, and the number of co-integrating variables is 1.

Table (4): Co-integration test result

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.285944	108.8914	29.79707	0.0000
At most 1 *	0.202705	45.91081	15.49471	0.0000
At most 2	0.018803	3.549551	3.841466	0.0596

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.285944	62.98055	21.13162	0.0000
At most 1 *	0.202705	42.36126	14.26460	0.0000
At most 2	0.018803	3.549551	3.841466	0.0596

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the first model in Table (5) indicate that the coefficient of GDP (-1) is -5.248712, and it is statistically significant as the value of (t) is more than 1.96. We can conclude that there is a positive and significant long-run causality relationship from GDP to INDEX. This indicates that higher GDP leads to a higher stock price index. This leads to the acceptance of the first hypothesis.
Additionally, Table (5) indicates that the coefficient of INF (-1) is 792.4343 and it is statistically significant as the value of (t) is more than 1.96. We can conclude that there is a significant negative long-run causality relationship from INF to INDEX. This indicates that higher INF leads to a lower stock price index. This leads to the acceptance of the second hypothesis.

Table (5): Results of the long-term causality between INDEX and GDP, INF.

The independent variable	Coefficient	Standard Error	t-statistic	significant
GDP	-5.248712	(0.65937)	[-7.96021]	significant
INF	792.4343	(102.197)	[7.75399]	Significant

The results of the second and third models in Table (6) indicate that the coefficient of INDEX to GDP (-1) is -0.190523, and it is statistically significant at 10% as the value of (t) is more than 1.65. We can conclude that there is a positive and significant long-run causality relationship from INDEX to GDP. This indicates that a higher stock price index leads to a higher GDP.
Additionally, Table (6) indicates that the coefficient of INDEX (-1) to INF is 0.001262 and it is statistically significant at10% as the value of (t) is more than 1.65. We can conclude that there is a significant negative long-run causality relationship from INDEX to INF. This indicates that a higher stock price index leads to a lower inflation rate.

Table (6): Results of the long-term causality between GDP, INF, and INDEX

	Coefficient	Standard Error	t-statistic	significant
INDEX to GDP	-0.190523	(0.10221)	[-1.86408]	significant
INDEX to INF	0.001262	(0.00068)	[1.86107]	Significant

In addition, Table (7) shows that the stock price index adjusts slowly to deviations from the long-run equilibrium. the Amman stock market converges towards its long-run equilibrium state at a speed of 1.2876 percent in a year after any shock or innovation. This implies

a very slow correction of deviations from equilibrium, which could indicate instability. Additionally, this suggests that the Amman stock price index is endogenous and GDP and INF are weakly exogenous.
Table (7) also reveals that GDP adjusts slowly to INDEX and INF. The speed of adjustment is very slow and equals 8.4935 percent per year after any shock or innovation. Conversely, Table (7) reveals that INF does not adjust significantly to restore equilibrium.

Table (7): Error correction estimates

	Coefficient	Standard Error	t-statistic	prob	Dependent variable
Error correction 1	-0.012876	0.004539	-2.836764	0.0047	Index
Error correction 2	0.084935	0.013283	6.394079	0.0000	GDP
Error correction 3	-2.74E-06	2.08E-05	-0.131494	0.8954	INF

The next procedure is to test for a short-run causality using the Wald test as outlined in Table (8) below. The results of the tests for the three models show that there is a short-run cause running from INF to INDEX, GDP, and from INDEX to INF. The significance is less than 0,05. This indicates the acceptance of the fourth hypothesis.
The results of the tests indicate that there is no short-run cause running from GDP to INDEX. The significance is more than 0,05. This indicates the rejection of the third hypothesis.

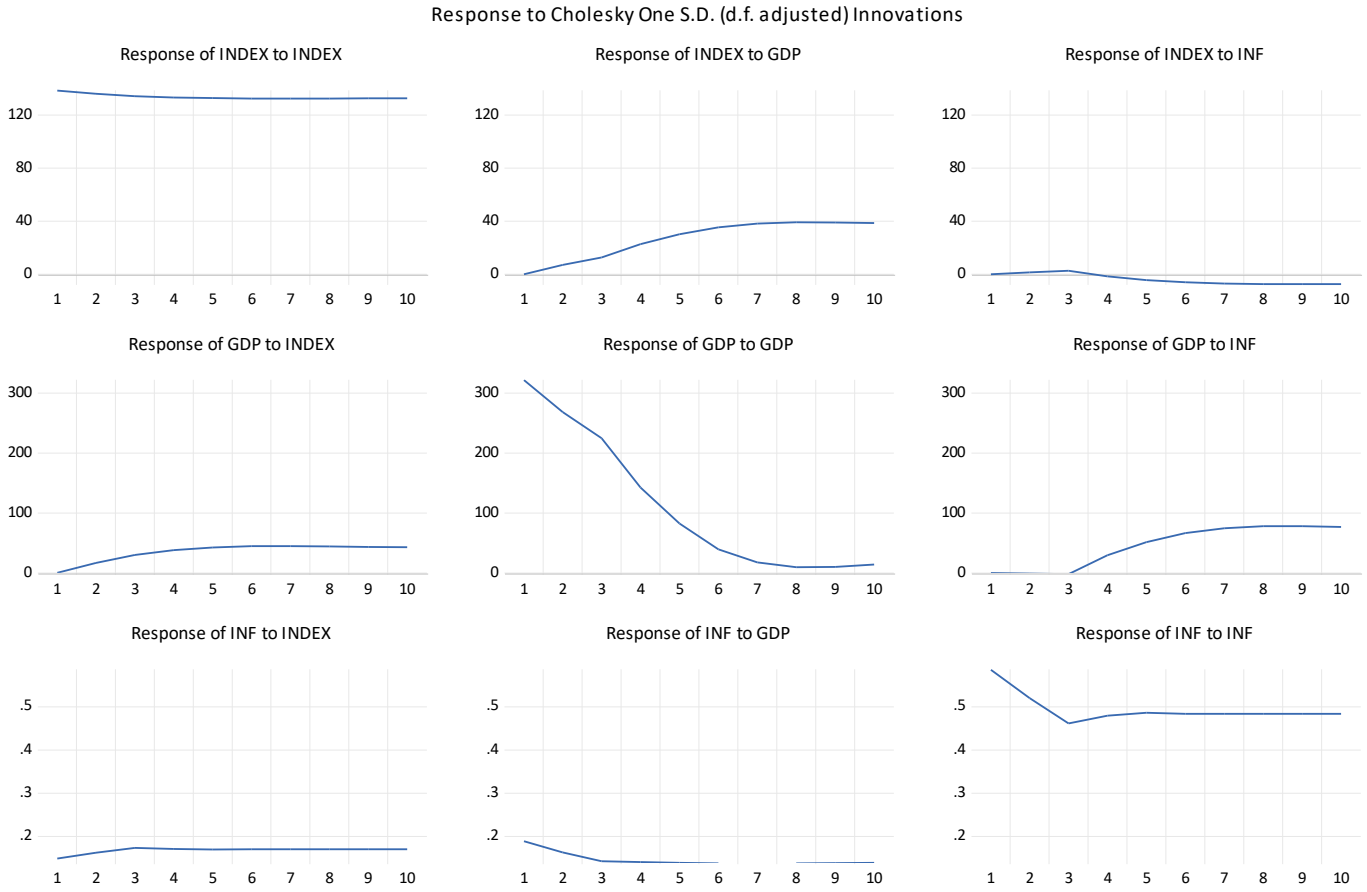
Table (8): The result of the Wald Test

Dependent Variable : D(INDEX)			
Excluded	**Chi-SQ**	**DF**	**PROB**
D(GDP)	2.462118	3	0.4822
D(INF)	40.26891	3	0.0000
Dependent Variable : D(GDP)			
Excluded	**Chi-SQ**	**DF**	**PROB**
D(INDEX)	3.701859	3	0.2955
D(INF)	5.055546	3	0.0000
Dependent Variable : D(INF)			
Excluded	**Chi-SQ**	**DF**	**PROB**
D(INDEX)	34.72618	3	0.0000
D(GDP)	0.094775	3	0.9925

After examining the long- and short-run causality between GDP, IFL, and INDEX. The impulse response analysis is employed to assess how all variables in a system react to a disturbance (Shock) of one standard deviation at any given time. Impulse response analysis is a critical tool in the VECM model. It traces the dynamic impact of a one–time shock to one variable on another over ten periods, holding the other factor constant.
Figure (1) illustrates that the response of INDEX to GDP is positive and increasing up to period five, then flattens. This means that a shock to GDP raises the stock market index in the short to medium term, indicating positive causality from GDP to stock prices. Conversely, the response to INF is negative and steeply declining (from 0 to below -40). That indicates a shock to INF reduces the INDEX Suggesting strong negative impact of INF on stock prices, which is consistent with economic theory.
In addition, Figure (1) shows that the response of GDP to INDEX is a positive and persistent effect, peaking early and then stabilizing. This means that a shock to the market boosts GDP, suggesting that financial market performance may stimulate economic activity. Conversely, the response of INF to GDP is flat to slightly increasing in later periods. INF shocks have weak and delayed effects on GDP which can be attributed to price stickiness or monetary policy absorption.
Also, the response of INF to INDEX is fluctuating, weak positive responses. Stock price shocks slightly affect INF, possibly through expectation or demand channels, but the impact is limited.
However, the response of INF to GDP is mostly flat, with minor responses. GDP shocks have negligible influences on INF in this model.
In the same context, the variance decomposition test was applied. This test reveals how much of the forecast error variance in each variable is explained by shocks to the other variables over time.
The results shown in Figure (2) indicate that mostly of the INDEX variance is explained by its own shocks (90-95%). The stock market is largely self-driven but still affected modestly by GDP (supports long-run causality from GDP to INDEX), while INF plays a smaller role.
In addition, GDP variances are mainly autoregressive, but stock market performance gradually influences it (5-10%), confirming causality from INDEX to GDP, while INF has a smaller but growing effect over time.

Also, INF variances are primarily explained by its own shocks (90%), INDEX contributes slightly (5%), while the GDP effect is minimal. This means that INF is mostly exogenous, not significantly influenced by INDEX or GDP. This aligns with the VECM finding that INF does not adjust to restore equilibrium.

Figure (1): Response to Cholesky one s. d (d.f. adjusted) innovations



9-Discussion:

This study explored the dynamic and causal relationship between GDP, INF, and stock prices (INDEX) in Jordan over 2008-2023, using monthly data and applying a VECM approach. The key findings suggest a long-run bidirectional relationship between GDP and stock prices, a negative long-run effect of INF on stock prices, and a limited short-run causal effect, especially from GDP.

These results are generally consistent with existing economic theory and many empirical studies, but also diverge in some context-specific ways.

The empirical findings revealed a significant long-run causality from GDP to the stock index, indicating that higher economic growth stimulates stock market performance. Additionally, the reverse causality from stock prices to GDP in the long-run suggests that stock market development contributes to economic activity. These results align with (Fama 1981) and (Levine et al, 1998), who documented that stock markets reflect real economic conditions and that well-functioning equity markets support economic growth through efficient capital allocation. The feedback relationship found in this study mirrors the findings of (Caporal et al, 2003) and (Rashed 2008), who identified bidirectional causality between GDP stock indices in emerging markets.

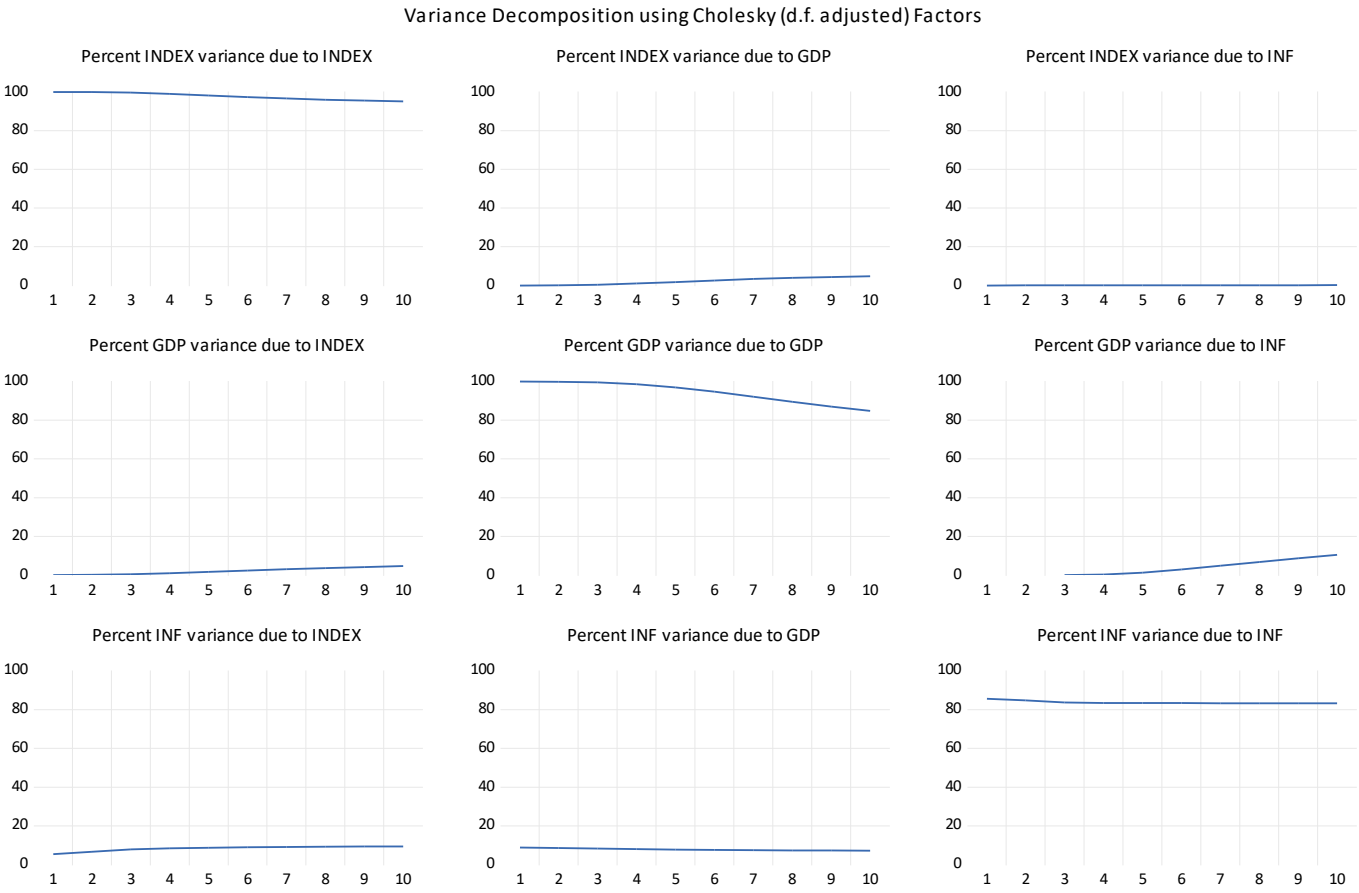
However, the lack of significant short-run relationship causality from GDP to stock prices contrasts with studies such as (Chen et al, 1986), which found strong short-term effects in developed markets like the US. This could reflect the delayed transmission mechanisms in Jordan's economy, possibly due to slower investor response, limited market depth, or time lags in macroeconomic data release and its integration into pricing decisions.

In addition, the study found a strong negative long-run relationship between INF and stock prices, where INF shocks reduce market performance. This supports the Fisher effect hypothesis in reverse and agrees with findings by (Modigliani et al, 1979) and (Gesk et al, 1983), who argued that INF reduces real returns and raises uncertainty, leading to a decrease in asset prices.

Similar outcomes were reported in regional studies, such as (Omran et al, 2001), who found that INF negatively affected the stock market in Egypt and Jordan. The impulse response analysis in this study also confirms a persistent negative impact of INF shocks on stock index values.

Interestingly, the weak response of INF to GDP and stock prices, and its exogeneity in the VECM results, diverge from findings in more developed markets. For example, (Rapach 2002) found that stock returns could predict INF in some industrial economies.

Figure (2): Variance Decomposition Cholesky one s. d (d.f. adjusted) innovations



This divergence suggests that in Jordan, INF dynamics may be driven more by external factors (oil prices, exchange rates, import inflation) or policy inertia, rather than internal economic performance or capital markets.

The bidirectional causality and feedback between GDP and stock market index support the stock market as both a predictor and driver of economic activity, consistent with the endogenous growth theory framework as presented by (Levine 1998).

However, the weak short-run feedback effect in Jordan contrasts with results from markets with more developed financial markets, where equity prices often act as leading indicators of economic cycles (King et al, 1993). This may be due to a lower level of financial intermediation, limited market liquidity, or institutional inefficiencies in the Jordanian stock exchange.

Table (9) illustrates the relationship between the results and related theories.

Table (9): The relationship between the results and related theories.

Empirical Result	Supporting Theory	Interpretation
GDP ⟶Stock prices (positive)	Efficient market hypothesis, growth theory.	Economic growth drives market confidence and valuations
INF ⟶Stock prices (negative)	Fisher effect, Keynesian view	INF reduces real returns, increases uncertainty.
Stock prices ⟶GDP (positive)	Endogenous growth theory, wealth effect.	Financial markets stimulate capital formation and spending.
INF is exogenous	Monetarist Theory.	INF driven by money supply or external prices, not internal macro-variables.

10-Limitations and Future Research:

This study has several limitations, the model includes GDP, INF, and stock market index. Other factors such as interest rates and exchange rates, are not considered but may significantly influence these relationships. Moreover, the period from 2008 to 2023 includes critical events like the global financial crisis, the Arab Spring, the COVID-19 pandemic, and regional conflicts. These may have caused structural breaks not explicitly modeled. Furthermore, while VECM accounts for some endogeneity, there may still be omitted variable bias or reverse causality that affect the robustness of causality interpretations. In addition, findings are specific to Jordan's economic and financial structure and may not be directly generalizable to other emerging markets with different institutional frameworks.
Despite its limitations, this study lays a solid foundation for understanding the macro-financial nexus in Jordan and highlights the importance of coordinated economic and monetary policies for sustainable development.
To build upon this study, future research may consider the following directions: incorporating additional variables, such as interest rates, money supply, comparative studies across countries, and forecasting studies using the established long-run relationships to assess predictive power for policy regimes.

11-Conclusion:

This research provides compelling evidence of bidirectional long-run causality between GDP and stock prices, and a unidirectional long-run causality from INF to stock prices in Jordan. It confirms the stock market's dual role as both a reflection of and a contributor to macroeconomic performance. In contrast, INF appears to operate largely independently, exerting negative pressure on stock market performance but not significantly adjusting to macro or financial shocks.
In the short-run, the results show limited causality from GDP, but more significant short-run effects of INF on both GDP and stock prices, and from stock prices to INF. These findings hold important implications for policymakers, investors, and analysts in Jordan: fostering economic growth and controlling INF not only stabilizes the macro economy but also strengthens financial markets.
Based on the study's findings, it is recommended that policymakers in Jordan prioritize economic growth through supportive fiscal and monetary policies, as GDP positively influences stock market performance. Simultaneously, maintaining INF stability is crucial, given its adverse effect on stock prices. Enhancing the depth, transparency, and efficiency of the Amman stock exchange will reinforce its role in promoting economic development. Additionally, timely responses to INF shocks and better macroeconomic data dissemination are essential to reduce uncertainty and improve market reactions. Lastly, stronger coordination between monetary, fiscal, and financial regulatory authorities is advised to align macroeconomic stability with capital market development goals.

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