

The Relationship between Oil Prices and Stock Market: Evidence from Jordan

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Abstract

Objectives: This study aims to investigate the dynamic short- and long-run relationship between oil returns and stock market returns.

Methods: Daily data from the Amman Stock Exchange (ASE) spanning the period from 2013 to 2022 is analyzed using the vector autoregression (VAR) model. The VAR model is employed to assess the short-run dynamic impact of oil returns on stock market returns. Granger causality tests are conducted to examine the causal relationship between oil returns and stock market returns. Additionally, the Johansen-Juselius integration test is utilized to investigate long-run cointegration between the two variables.

Results: The results from the vector autoregression model (VAR) reveal a statistically significant positive effect of oil returns on the returns of the general index, industry index, and financial index of the ASE. The analysis does not conclusively establish causality between oil prices and stock market returns. However, it identifies highly significant long-run cointegration between oil returns and the returns of all stock market indexes in the ASE. The robustness of these findings is confirmed across different data frequencies and macroeconomic conditions.

Conclusions: The study finds that oil prices exert a positive influence on market returns in the Amman Stock Exchange both in the short and long run. These findings hold important implications for academics and investors in Jordan, suggesting potential avenues for further research and informing investment strategies in relation to oil price fluctuations.

Keywords: Oil Prices, General Index, Financial, Industry, Service, Amman Stock Exchange, Jordan.

JEL Classification: E44, G1, Q43.

العلاقة بين أسعار النفط وسوق الأوراق المالية: دليل من الأردن

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ملخص

الأهداف: تبحث هذه الدراسة في العلاقة الديناميكية القصيرة والطويلة الأجل بين عوائد النفط وعوائد سوق الأوراق المالية. **المنهجية:** باستخدام البيانات اليومية لبورصة عمان خلال الفترة (2013-2022)، تم استخدام نموذج الانحدار الذاتي المتجه (VAR) لاختبار الأثر الديناميكي قصير الأجل لعائد النفط على عائد سوق الأوراق المالية. تم استخدام سببية جرانجر لاختبار العلاقة السببية بين المتغيرين، كما تم استخدام اختبار تكامل جوهانسن-جوسيلويس لاختبار التكامل المشترك على المدى الطويل. **النتائج:** أظهرت نتائج نموذج الانحدار الذاتي المتجه (VAR) وجود أثر إيجابي ذي دلالة إحصائية لعوائد النفط على عوائد المؤشر العام ومؤشر الصناعة والمؤشر المالي لبورصة عمان. لا يوجد علاقة سببية بين أسعار النفط وعائدات سوق الأوراق المالية. ومع ذلك، فقد توصلت الدراسة إلى وجود تكامل مشترك دال إحصائياً على المدى الطويل بين عوائد النفط وعوائد جميع مؤشرات سوق الأسهم في بورصة عمان. وكانت النتائج متماثلة عند استخدام بيانات ربعية وبعد أخذ تأثير عوامل الاقتصاد الكلي بعين الاعتبار. **خلاصة الدراسة:** وجدت الدراسة أن أسعار النفط تؤثر بشكل إيجابي على عوائد بورصة عمان للأوراق المالية على المدى القصير والطويل. تعتبر هذه النتائج ذات دلالات هامة لكل من الأكاديميين والمستثمرين في الأردن. **الكلمات الدالة:** أسعار النفط، المؤشر العام، المالي، الصناعي، الخدمي، بورصة عمان للأوراق المالية، الأردن.



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1. INTRODUCTION

Due to its significant dependence on oil products, oil is a key source of energy for the economy and is considered a gauge of economic stability. Various studies have established that fluctuations in oil prices are a major cause of economic turbulence both theoretically and empirically, often serving as a global shock that can impact multiple economies simultaneously (Blanchard and Gali, 2008; Amin, 2015). The relationship between oil prices and economic activity can be explained through traditional supply-side effects, wherein rising oil prices increase production costs and reduce the availability of key productive inputs, thereby slowing down economic growth and productivity. On the demand side, oil prices can potentially affect the economy by reducing household purchasing power and dampening consumption levels.

The relationship between stock market prices and oil prices has been extensively researched over the years. The risks and uncertainties associated with the volatility of oil prices also affect investor portfolios, particularly as portfolio managers strive to construct optimal investment portfolios. According to Salisu and Oloko (2015), the theoretical foundation of the link between oil prices and stock returns suggests that oil prices can directly impact the stock market by influencing future cash flows, or indirectly by affecting the interest rates used to discount those cash flows.

It has been widely debated in the literature that higher oil prices tend to depress stock market indices, potentially lowering the expected growth rate of economic activity, increasing production input costs, reducing trade volumes, and raising overall price levels. Moreover, the uncertainty and risk premium associated with high oil prices can drive down stock prices. Thus, according to the traditional view, higher oil prices compel various economic stakeholders to allocate more resources to energy consumption, which in turn can reduce profit margins and negatively impact the stock market (Alamgir and Bin Amin, 2021).

Kilian (2009) distinguishes among three types of structural oil shocks. Oil supply shocks reflect unexpected changes in petroleum production. Aggregate demand shocks reflect shifts in global oil demand associated with the global business cycle. Oil-specific demand shocks arise from increased precautionary demand due to concerns about future oil shortages. Jordan, as an oil-importing country heavily dependent on oil to meet all its energy needs across various economic activities, is vulnerable to all these shocks. Evidence from Jordan regarding the relationship between oil prices and stock returns is mixed (Al-Muhtaseb and Al-Assaf, 2017; Al-Ajlouni, 2019; Alsmadi, 2021). Theoretical perspectives suggest this relationship could be positive or negative. Smyth and Narayan (2018) reviewed the literature and concluded that according to the cash flow theory, correlations between stock returns and oil prices could be positive or negative.

Two channels suggest a negative relationship. First, as many businesses heavily rely on oil as a primary input, rising oil prices increase production costs, reducing future cash flows, profits, dividends, and stock returns. Second, higher nominal interest rates and expected inflation due to rising oil prices can decrease earnings, dividends, and stock returns, as they discount anticipated future cash flows. A third channel suggests a positive or negative correlation through demand-side effects. Oil price volatility can influence the sensitivity of changes in oil prices to the risk premium component of the discount rate and to cash flows. Sensitivity to oil prices can positively or negatively impact oil prices, depending on the sign of the risk premium, which varies significantly between firms and over time.

Given the vital role of oil as a primary energy source for the Jordanian economy and the uncertain direction of the documented relationship between oil prices and the stock market, both theoretically and empirically, these factors have motivated our investigation to provide recent evidence on this issue. Specifically, this study examines the short- and long-run dynamic relationship between oil returns and the returns of general and sectoral indexes in the Amman Stock Exchange (ASE). Section 2 reviews previous studies, Section 3 presents data and methodology, Section 4 reports analysis results,

Section 5 critiques these results, Section 6 provides robustness checks, and Section 7 concludes the study.

2. LITERATURE REVIEW

Numerous researchers worldwide have examined the relationship between oil prices and stock markets. Sadorsky (1999) used vector autoregression to demonstrate that both oil prices and oil price volatility significantly affect real stock returns in the US. Kang et al. (2015) found that positive shocks to aggregate demand and demand specific to the oil market negatively impact return volatility covariance in the United States. On the other hand, disruptions in oil supply have a positive relationship with return volatility covariance. Huang et al. (2017) argue that there is no persistent asymmetric effect of oil prices on the stock market across different time periods; instead, the direction and magnitude of impact vary over time.

Many other early studies have been conducted in various countries. Zhang and Chen (2011) found that China's stock returns are associated primarily with expected volatilities in global oil prices, with a slight positive effect observed. Broadstock and Filis (2014) discovered that China appears more resilient to oil price shocks compared to the US. Xu (2015) provided evidence that changes in oil prices strongly predict UK industry portfolio returns, although the effect varies across different sectors. Bagirov and Mateus (2019) confirmed a relationship between oil and European stock markets, with reactions to oil price fluctuations differing across sectors. Am and Shanmugasundaram (2017) analyzed monthly data from nine major oil importing and exporting nations from 2004 to 2015, finding long-term cointegration between stock prices and oil prices in both panels of studied nations.

Given their status as major global oil producers and suppliers with economies heavily dependent on oil for growth, many studies have focused on Gulf countries. Khamis et al. (2018) investigated how changes in oil prices affected the Saudi Arabian stock market at the sectoral level from 2012 to 2015. Their findings supported earlier research indicating an asymmetric response of stock markets to oil price changes. The Saudi Arabian stock market showed resilience to recent declines in oil prices, although certain sectors may need to reduce their dependence on the oil market to mitigate negative impacts.

Alqattan and Alhayky (2016) estimated the effect of oil price changes on stock market prices in GCC countries in both the short and long term. Their study concluded that, except for Oman, where cointegration between oil prices and stock markets was evident, no such relationship existed in other GCC nations. However, short-term correlations between oil prices and stock market values were observed across the GCC. Ben Cheikh (2020) demonstrated that GCC stock markets do not exhibit uniform sensitivities to changes in oil prices. Additionally, using weekly data from 1992 to 2016, Fasanya et al. (2021) found that most GCC stock markets respond asymmetrically to oil price changes. Recently, Hussain and Rehman (2023) discovered volatility connectedness between GCC stock markets and the S&P Global Oil Index returns' volatility.

Several researchers have also examined the relationship between oil prices and stock markets in importing countries. Sahut et al. (2017) analyzed stock market indices in several importing countries including the US, Canada, Finland, France, Germany, Spain, Denmark, and Australia. Their analysis indicated that high oil prices driven by demand shocks tend to correlate positively with stock prices, while supply shocks show higher correlations only within importing countries. Joo and Park (2021) studied stock returns in ten major oil-importing countries including Italy, Japan, Korea, the Netherlands, Spain, China, France, Germany, India, and the US from 2001 to 2019. Their empirical evidence suggested that oil price volatility asymmetrically influences stock returns, with the asymmetry varying based on stock market conditions and oil market dynamics.

Evidence regarding the relationship between oil prices and stock returns in Jordan is mixed. Bouri et al. (2016) examined

the causality between world oil prices and sectoral equity returns in Jordan before and after the Arab Uprisings that began in 2010. They found that the effect varied across equity sectors, with significant impacts observed on the Financials and Services sectors but not on the Industrials sector. They also concluded that oil is not a risk factor for all sectors. Al-Muhtaseb and Al-Assaf (2017) identified an asymmetric response of stock returns to oil price fluctuations using quarterly data from 2000 to 2015. Specifically, increases in oil prices had a greater impact on stock returns, indicating a significant effect of oil price rises on Jordan's stock market performance. Hammami et al. (2019) found a significant negative effect of oil prices on stock prices in Jordan, both in the short and long run. Al-Ajlouni (2019) reported a long-term inverse relationship from oil prices to stock prices in Jordan. However, Alsmadi (2021) found no effect of oil prices on Amman Stock Exchange returns using data from 2015 to 2020.

3. DATA AND METHODOLOGY

The study utilizes daily observations of the free-float index of the Amman Stock Exchange, along with sectoral indexes (Industries, Financials, Services), and Brent oil spot prices (U.S. Dollars per Barrel). Data collection spans from January 2, 2013, to December 29, 2022.

Methodologically, the study employs Vector Autoregressive Regression (VAR) to estimate parameters for short-run dynamic relationships between oil prices and market indexes. Subsequently, the Johansen-Juselius cointegration test is applied to analyze long-run equilibrium between oil and stock prices, while the Granger causality test determines the direction of the relationship. Additionally, the Augmented Dickey-Fuller unit root test is conducted on all time-series to detect nonstationary issues.

The variables of the study are defined as following:

- *Oil Return (OIL)* is measured as follows:

$$OIL_t = \ln\left(\frac{OILP_t}{OILP_{t-1}}\right) \dots\dots\dots(1)$$

Where:

OIL_t : is the oil return on day t

$OILP_t$: is the Brent oil price per barrel on day t

$OILP_{t-1}$: is the Brent oil price per barrel on day t-1

- *General Index Return (GENERAL)* is measured as follows:

$$GENERAL_t = \ln\left(\frac{Index_t}{Index_{t-1}}\right) \dots\dots\dots(2)$$

Where:

$GENERAL_t$: is the return on the free-float general index of ASE on day t.

$Index_t$: is the value of the free-float general index of ASE on day t.

$IIndex_{t-1}$: is the value of the free-float general index of ASE on day t-1.

- *Industrial Index Return (INDUSTRY)* is measured as follows:

$$INDUSTRY_t = Ln\left(\frac{IIndex_t}{IIndex_{t-1}}\right) \dots \dots \dots (3)$$

Where:

$INDUSTRY_t$:is the return on the free-float industrial index of ASE on day t.

$IIndex_t$: is the value of the free-float industrial index of ASE on day t.

$IIndex_{t-1}$: is the value of the free-float industrial index of ASE on day t-1.

- *Service Index Return (SERVICE)* is measured as follows:

$$SERVICE_t = Ln\left(\frac{SIndex_t}{SIndex_{t-1}}\right) \dots \dots \dots (4)$$

Where:

$SERVICE_t$:is the return on the free-float service index of ASE on day t.

$SIndex_t$: is the value of the free-float service index of ASE on day t.

$SIndex_{t-1}$: is the value of the free-float service index of ASE on day t-1.

- *Financial Index Return (FINANCIAL)* is measured as follows:

$$FINANCIAL_t = Ln\left(\frac{FIndex_t}{FIndex_{t-1}}\right) \dots \dots \dots (5)$$

Where:

$FINANCIAL_t$:is the return on the free-float financial index of ASE on day t.

$FIndex_t$: is the value of the free-float financial index of ASE on day t.

$FIndex_{t-1}$: is the value of the free-float financial index of ASE on day t-1.

The VAR model is estimated four times, each time employing a different return proxy, to examine the short-term dynamic impact of oil returns on stock market returns:

$$Return_t = \alpha + \phi_1 Return_{t-1} + \dots + \phi_p Return_{t-p} + \beta_1 OIL_{t-1} + \dots + \beta_p OIL_{t-p} + \delta_1 STDEV_{t-1} + \dots + \delta_p STDEV_{t-p} + e_t \quad (6)$$

Where *Return* denotes return and *OIL* denotes oil return. σ_{oil} denotes the standard deviation of oil prices as a proxy for oil price volatility. Four VARs are estimated: the first using the return on the general stock market index

(GENERAL), the second using the industrial index return (INDUSTRY), the third using the service index return (SERVICE), and the fourth using the financial index return (FINANCIAL). The Akaike Information Criteria are used to determine the number of lags in the VAR.

Afterwards, “Granger causality tests” are executed as following:

$$Return_t = \alpha_1 + \sum_{i=1}^n B_i OIL_{t-i} + \sum_{j=1}^m \lambda_j Return_{t-j} + e_{1t} \dots \dots \dots (7)$$

$$OIL_t = \alpha_2 + \sum_{i=1}^n \theta_i Return_{t-i} + \sum_{j=1}^n \phi_j OIL_{t-j} + e_{2t} \dots \dots \dots (8)$$

By employing the Johansen-Juselius cointegration test, the long-term equilibrium relationship between oil returns and stock returns is examined. Johansen (1988) and Johansen and Juselius (1990) introduced two likelihood ratio tests to determine the number of cointegration vectors. The maximum and trace eigenvalues for these tests are computed as follows:

$$\lambda_{Trace}(r) = -T \sum_{i=r+1}^p \ln(1 - \lambda_i) \dots \dots \dots (9)$$

Trace Test=

$$\lambda_{Max}(r, r+1) = -T \ln(1 - \lambda_{r+1}) \dots \dots \dots (10)$$

Maximum Eigen Value Test =

Where r is the number of cointegrations, $-T$ is the number of observations and λ_i is the i^{th} largest eigen value.

4. RESULTS OF ANALYSIS

Table 1 presents the descriptive statistics of the study variables. The statistics indicate that the daily mean oil price is \$64.5 per barrel, with a daily oil return of -0.02%. The maximum oil price observed during the study period is \$133.2 per barrel, while the minimum is \$9.1 per barrel, demonstrating significant daily price variability. Daily oil returns range from a maximum of 41% to a minimum of -64%. The general market index of ASE shows a daily return of 0.01% over the study period, with a maximum value of 2.7% and a minimum of -8%. Among the ASE sectors, the industrial sector exhibits the highest returns over the study period, whereas the service sector shows the lowest values.

Table 1: Descriptive Statistics of the study variables.

	OILP	OIL	GENERAL	FINANCIAL	INDUSTRY	SERVICE
Mean	64.5004	-0.0002	0.0001	0.0001	0.0004	0.0000
Median	62.0000	0.0004	0.0000	-0.0001	0.0000	-0.0003
Maximum	133.1800	0.4120	0.0271	0.0302	0.0670	0.0383
Minimum	9.1200	-0.6437	-0.0799	-0.0655	-0.0555	-0.1221
Std. Dev.	21.1835	0.0326	0.0053	0.0051	0.0102	0.0070

Table 2 shows the results of the “Augmented Dickey-Fuller test” of the study variables. Results show that all return series are stationary at their levels.

Table 2: The Stationarity test of the study variables.

Augmented Dickey-Fuller test	t Statistic	Prob.*
OIL	-10.1980	0.0000
GENERAL	-40.0586	0.0000
FINANCIAL	-37.8988	0.0000
INDUSTRY	-29.4032	0.0000
SERVICE	-44.6189	0.0001

Table 3 presents the Vector Autoregression (VAR) estimates of the dynamic effect of oil returns on the returns of the general, financial, industrial, and service indexes. Based on Akaike’s Information Criterion (AIC), two lags were included in the model.

Panel A shows a statistically significant positive effect of oil returns on the general index returns in ASE, with a coefficient of 0.0408. Panel B indicates a statistically significant positive effect of oil returns on the financial sector returns at the 10% significance level, with a coefficient of 0.0262. Panel C reveals a statistically significant positive effect of oil returns on the industrial index returns in ASE, with a coefficient of 0.1031. However, Panel D shows no statistically significant effect of oil returns on the returns of the service sector in ASE.

Additionally, the results indicate that oil price volatility (STDEV) has a statistically significant positive effect on the returns of the industrial sector only; this effect is not statistically significant in the other sectors. In summary, these findings suggest that an increase in oil prices could potentially stimulate the stock market.

Table 3: The Vector Autoregression Estimates (VAR).

Panel A		Panel B	
GENERAL(-1)	0.1250	FINANCIAL(-1)	0.0558
t-statistic	[2.70148]	t-statistic	[2.76343]
GENERAL(-2)	-0.0136	FINANCIAL(-2)	0.0156
t-statistic	[-0.18739]	t-statistic	[0.21347]
C	-0.0016	C	0.0004
t-statistic	[-1.06516]	t-statistic	[0.27462]
OIL	0.0408	OIL	0.0262
t-statistic	[2.74636]	t-statistic	[2.08917]
STDEV	0.0730	STDEV	0.0084
t-statistic	[1.61914]	t-statistic	[0.22156]
Adj. R-squared	0.2619	Adj. R-squared	0.2480
Panel C		Panel D	
INDUSRTY(-1)	0.1900	SERVICE(-1)	0.0289

Panel A		Panel B	
t-statistic	[2.58745]	t-statistic	[2.38677]
INDUSRTY(-2)	-0.0476	SERVICE(-2)	0.0010
t-statistic	[-0.65864]	t-statistic	[0.01316]
C	-0.0086	C	0.0002
t-statistic	[-2.81948]	t-statistic	[3.05202]
OIL	0.1031	OIL	0.0152
t-statistic	[3.57530]	t-statistic	[0.53499]
STDEV	0.3202	STDEV	0.0367
t-statistic	[3.47724]	t-statistic	[0.43000]
Adj. R-squared	0.3554	Adj. R-squared	0.1830

Table 4 presents the results of Pairwise Granger Causality Tests. Across all panels, the results indicate no statistically significant causal relationship between oil returns and the stock market indexes, except for two causalities: one from oil returns to the financial sector index returns, and another from the industry index returns to oil returns. These findings suggest the presence of some weak causal relationships between oil prices and the ASE stock market in the short run.

Table 4: Pairwise Granger Causality Tests.

Panel A: Causality between GENERAL and OIL		
	F Statistic	Prob.
H0: OIL does not cause GENERAL	1.2856	0.2726
H0: GENERAL does not cause OIL	1.8127	0.1132
Panel B: Causality between FINANCIAL and OIL		
	F Statistic	Prob.
H0: FINANCIAL does not cause OIL	2.0262	0.0777
H0: OIL does not cause FINANCIAL	2.5188	0.0317
Panel C: Causality between INDUSTRY and OIL		
	F Statistic	Prob.
H0: OIL does not cause INDUSRTY	0.0762	0.9958
H0: INDUSRTY does not cause OIL	2.2979	0.0476
Panel D: Causality between SERVICE and OIL		
	F Statistic	Prob.
H0: SERVICE does not cause OIL	1.2532	0.2869
H0: OIL does not cause SERVICE	1.0185	0.4086

Table 5 displays the estimates from the Johansen-Juselius cointegration test. The results indicate a highly statistically significant long-run relationship (cointegration) between oil returns and the returns of all indexes in ASE, including the general, financial, industrial, and service indexes. These findings confirm that oil returns and stock market returns reach

equilibrium in the long run. Both the trace and maximum eigenvalue statistics are statistically significant across all ASE index returns, underscoring the robustness of the cointegration results.

Table 5: The estimates of Johansen-Juselius conitegration test.

Panel A: Cointegration between GENERAL and OIL			
		Trace	
No. of CE(s)	Eigen-value	Statistic	Prob.**
None	0.2748	82.0025	0.0000
At most 1	0.1440	26.7464	0.0000
Panel B: Cointegration between FINANCIAL and OIL			
		Trace	
No. of CE(s)	Eigen-value	Statistic	Prob.**
None	0.2842	78.7544	0.0000
At most 1	0.1162	21.2554	0.0000
Panel C: Cointegration between INDUSTRY and OIL			
		Trace	
No. of CE(s)	Eigen-value	Statistic	Prob.**
None	0.2505	73.4139	0.0000
At most 1	0.1293	23.8154	0.0000
Panel D: Cointegration between SERVICE and OIL			
		Trace	
No. of CE(s)	Eigen-value	Statistic	Prob.**
None	0.2791	89.5835	0.0000
At most 1	0.1760	33.3031	0.0000

5. DISCUSSION OF RESULTS

Our results demonstrate a positive short-term dynamic effect of oil prices on the general index of ASE, as well as on both the financial and industrial indexes. While causality between oil returns and stock market returns is not apparent, our findings strongly support a long-run equilibrium relationship between oil returns and all stock market index returns. Our findings are consistent with those of Bernanke (2016), Prabhash et al. (2020), and Filis (2011), who observe positive co-movements between stock market returns and oil prices. The convergence of stock movements with global oil prices is somewhat unexpected, especially in countries like Jordan, which are net oil importers.

One possible explanation for this co-movement can be found in Bernanke's (2016) explanation that oil prices and stocks respond to the same underlying factors: For instance, reduced aggregate demand would lower oil demand, leading to lower oil prices. Similarly, weakened aggregate demand would impact corporate profits, resulting in a decline in stock prices. Therefore, when stock investors react to changes in oil prices, they are responding to changes in the underlying fundamental factors influencing oil prices.

In agreement with Bernanke (2016) and Prabhash et al. (2020), we argue that the conventional demand-side explanation

for the correlation between oil prices and stock price movements may not fully elucidate the situation. Alternatively, the stock-oil link could be better understood through changes in market risk preferences. Sudden declines in global oil prices may signal negative economic conditions, impacting companies' future expectations. Consequently, stock market returns decrease (i.e., there is a one-way co-movement), and economies reliant on oil imports may experience slower growth.

In the Jordanian context, our findings align with Al-Muhtaseb and Al-Assaf (2017), who provide evidence that stock returns react to oil price fluctuations in an asymmetric manner. However, they contrast with Al-Ajlouni (2019), who demonstrates a long-term inverse relationship from oil prices to equity prices in Jordan, and also with Alsmadi (2021), who finds no effect of oil prices on the Amman Stock Exchange returns.

In summary, the study's findings underscore a statistically significant long-run relationship between oil prices and the stock market. Nonetheless, no clear short-term causal effect is observed between the two variables. This phenomenon is likely attributable to the characteristics of a developing country like Jordan, where there exists a temporal disconnect between the economy and the stock market.

6. ROBUSTNESS CHECK

We test the robustness of our results by analyzing the impact of oil returns on the general index and sectoral indexes of ASE using quarterly data. We augment the VAR model with macroeconomic factors such as economic growth measured by GDP percentage change, money supply percentage change, and lending interest rates. Table 6 presents the estimation results of the VAR model. The results based on quarterly data reaffirm the findings of the study. Even after controlling for macroeconomic factors, oil returns exhibit a statistically significant positive effect on the returns of the general index and all three sectoral indexes.

Table 6: The Vector Autoregression Estimates (VAR) using quarterly observations.

Panel A		Panel B	
GENERAL(-1)	-0.0478	FINANCIAL(-1)	-0.1283
t-statistic	[-2.25688]	t-statistic	[-2.69143]
GENERAL(-2)	-0.1274	FINANCIAL(-2)	-0.0687
t-statistic	[-0.63904]	t-statistic	[-0.35845]
C	0.0000	C	-0.0018
t-statistic	[0.00372]	t-statistic	[-0.86705]
OIL	0.0050	OIL	0.0226
t-statistic	[2.72842]	t-statistic	[2.37680]
MS	0.1227	MS	0.1105
t-statistic	[0.88169]	t-statistic	[0.77955]
INTEREST	0.0558	INTEREST	0.0495
t-statistic	[1.70656]	t-statistic	[1.46927]
GDP	0.0056	GDP	-0.0036
t-statistic	[0.45574]	t-statistic	[-0.27614]
Adj. R-squared	0.3145	Adj. R-squared	0.2875

Panel C		Panel D	
INDUSTRY(-1)	-0.0150	SERVICE(-1)	-0.4697
t-statistic	[-3.08451]	t-statistic	[-3.00077]
INDUSTRY(-2)	0.2863	SERVICE(-2)	-0.3931
t-statistic	[1.59463]	t-statistic	[-1.88969]
C	0.0024	C	0.0028
t-statistic	[0.88031]	t-statistic	[1.43793]
OIL	0.0348	OIL	0.0229
t-statistic	[3.00047]	t-statistic	[2.95139]
MS	0.1462	MS	0.1360
t-statistic	[0.72350]	t-statistic	[0.96964]
INTEREST	0.0246	INTEREST	0.1059
t-statistic	[0.48355]	t-statistic	[2.82689]
GDP	-0.0113	GDP	0.0287
t-statistic	[-0.59902]	t-statistic	[2.14740]
Adj. R-squared	0.3385	Adj. R-squared	0.3899

7. CONCLUSION

The study investigates the dynamic relationship between oil returns and stock market returns in Jordan using daily data from 2013 to 2022. We employ vector autoregression models, Granger causality tests, and Johansen-Juselius cointegration tests. The results indicate a statistically significant short-run dynamic effect of oil returns on the returns of the general index, the financial index, and the industry index of ASE. However, no clear causal relationship between oil prices and stock market returns is observed. Conversely, a highly significant cointegration is detected over the long run between oil returns and the returns of all ASE indexes. These findings are crucial for investors, suggesting they should consider oil prices when making investment decisions. Additionally, these results have significant implications for academics and corporations alike.

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