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Oil Price Fluctuation and Firm Performance in Developing Economy: Evidence from Oman

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ABSTRACT

The study aims to investigate how oil continues to be the driving force of the Omani economy. Accordingly, changes in oil prices will have positive or negative impacts on all economic sectors. This study investigates the impact of oil prices on firm performance in 74 industrial and services companies listed on the Muscat Stock Exchange (MSM) from the years 2010 to 2018. This study's econometric model uses panel data regression since comprising time-series and cross-sectional data. The paper examines the effects of oil price fluctuations on the sampled firms' performance. The statistical analysis indicates that oil prices have a significant positive impact on financial performance (as measured by return on assets - ROA) with the exception of the interest rate. Moreover, all fixed effects are highly significant for the five sectors. This result contributes to the literature by highlighting the impact of oil price on firm performance in Oman's industrial and service sectors. Both sectors are highly exposed and sensitive to oil price fluctuations. All regression coefficients in all sectors are highly significant, with the exception of interest rate, which has no impact on the profitability performance of the cement, oil, and textile industries. Moreover, both fixed and effects models are highly significant.

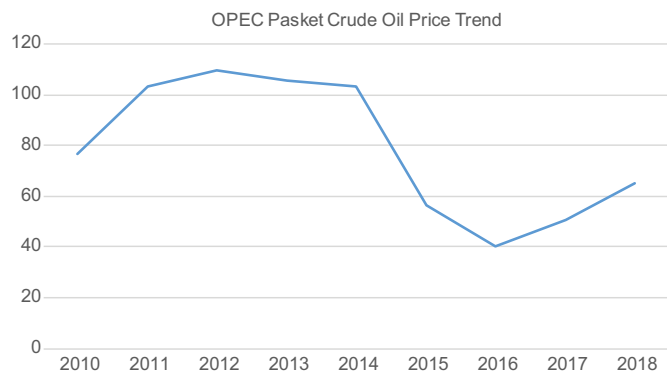
Keywords: Oil Price, Firm Performance, ROA, Panel Data, Industrial and Service Sectors, Oman

JEL Classifications: E44, F31, F37, B25

1. INTRODUCTION

Many researchers have studied the effect of oil prices on the economy. Filis et al. (2011) concluded that oil prices affect the economy in many ways and that the effects differed for oil-exporting and oil-importing countries (Bjørnland, 2009). Increases in oil prices affect oil-exporting countries positively while affecting oil-importing countries adversely. According to Mongi and Rejeb (2016), oil prices have a negative coefficient for market risk. Elyasiani et al. (2011) found that oil price fluctuations constitute a systematic asset price risk at the sectoral level. Wattanatorn and Kanchanapoom (2012) studied the impact of oil prices on the profitability of various sectors using data from the stock exchange of Thailand from 2001 to 2010. They found that there is a significant impact on profit in the food

and energy sector. Arouri (2011) also found that increased oil prices had an asymmetric effect on selected oil and gas sectors, and a negative effect on the food and beverage sector. In short, there is consensus that changes in the price of crude oil affect the economy (Kilian, 2009). Oman is an oil-exporting country, with oil and gas driving its economy. In 2014, it produced nearly 943,000 barrels of crude oil a day while gas production reached 24.3 trillion cubic feet (The Report, Oman 2014, Oxford Business Group). Limited research has explored the impact of changes on oil prices on profitability and firm performance in Oman. The present study examines the influence of oil prices on firm performance in Oman's industrial and services sectors, which are highly sensitive to oil price fluctuations. The results support managing cost structures in short- and long-term planning in the event of rising oil prices.



Crude oil price trends 2010-2018

2. LITERATURE REVIEW

According to Yan (2012), oil and gas are significant drivers of economic development globally. As such, fluctuations in oil prices are a global measure of global economic development. Changes in the prices of oil have significant effects on politics and economics. To illustrate this relationship, Hughes et al. (2008) estimate that the short-run price of gasoline demand in absolute terms were in the range of 0.21-0.34. According to Hamilton (2009), global oil prices fell over 57% from June 2014 to January 2015, thereby reducing the revenues for oil-exporting countries significantly. Since the Middle East is heavily dependent on oil exports, revenue losses due to lower prices of oil resulted in severe budget pressure and reduced trade balance for Saudi Arabia, Kuwait, UAE, and Iran.

2.1. Impact of Oil Price on Profitability Performance

Hamilton (1983) is a pioneer study which studied the impact of crude oil prices on the US recession. Subsequent studies examined the impact of changes in oil prices on macroeconomic variables. These studies covered the impact of macroeconomic factors and oil prices on firms' operational costs and revenues.

Concerning the effect of oil price shocks on firm performance, Sadorsky (2011) studied the volatility of real stock prices due to changes in oil prices. For GCC countries, Mohanty et al. (2011) found that, with the exception of Kuwait, the remaining five GCC countries reacted positively to changes in oil prices. With the decline in oil prices, there were negative effects on the stock returns. Using the GARCH and EGARCH models, Janor et al. (2013) concluded that that oil price volatility had a significant effect on firms for the period from January 1986 to December 2011. Studying the same variables, Dadashi et al. (2015) sampled firms listed on the Tehran Stock Exchange from 2003 to 2013 and concluded that oil prices significantly affected firm value based on Tobin's Q.

Demiralay (2013) studied the relationship between crude oil prices and sectoral returns in Borsa Istanbul and found a direct relationship between oil prices and chemical, petroleum, and plastic industries. Ganguli (2016) analysed the impact of oil price shocks on the GCC economy and found no fundamental differences across GCC countries. However, the drop in oil price affected the fiscal vulnerabilities of these economies. Osamah and Ali (2017) surveyed non-performing loans in 2310 commercial banks across

30 oil-exporting countries during a period of reduced oil prices from 2004 to 2014. The paper concluded that the oil price shocks had a macro-economic impact on the financial stability of oil-exporting countries. This impact affected not only bank performance but also economic activities and social welfare. A recent study conducted by (Nguyen et al., 2020). They investigate the effect of oil price and exchange rate on the two Vietnamese stock market indices the findings show that the oil price has a significant positive effect on the two Vietnamese stock market indices. In terms of the stock index volatility. In the same view, El-Chaarani (2019) analysed the impact of oil price fluctuations on the financial performance of the banking sector in eight oil-producing and exporting countries in the Middle East from 2012 and 2017. The results reveal a significant direct impact of oil prices on the financial performance of banking sector in Bahrein, Oman and Iran. In Jordan, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates, the results do not reflect any direct impact of oil price fluctuations on the financial performance of the banking sector.

On the other hand, Sadorsky (1999) drew attention to a negative relationship between shocks in oil prices and real stock returns for the US economy and a negative impact of shocks to real stock returns on interest rates and industrial production. Poghosyan and Hesse (2009) studied the relationship between oil price shocks and bank profitability. They collected data for 145 banks in 11 non-exporting MENA countries for the period from 1994 to 2008 and concluded that there was an indirect effect of oil prices on the banks' profitability, while the direct effect is insignificant. Similarly, Hawaldar et al. (2017) studied the financial performance of selected banks in the Kingdom of Bahrain using financial measures: profitability, efficiency, capital adequacy and liquidity ratios in the backdrop of oil shocks. The pre and post crisis periods was adopted. The results conclude that the financial performance of the banks is similar in the pre-crisis and crisis period.

2.2. Firm Performance Indicators

Janor et al. (2013) studied the relationship between the effects of oil prices and firm performance based on ROA ROE, leverage and other factors. Wattanatorn and Kanchanapoom (2012) measured the ratio of net profit to total equity. Leverage refers to the company's total debt divided by its total assets or total debt/total equity, which shows the percentage of financing that comes from banks or stockholders. The profitability from such activities can be analysed as profit before tax or after tax, ROE, EPS, DPS, net profit ratios, etc (Tailab, 2014).

Also, it is worth noting that research in the area of oil prices has been a subject of interest for many researchers. However, more empirical studies, especially in developing countries, are needed to investigate its implications and influence on firm performance.

Flowing (Nguyen, 2020) and Qayyum and Noreen (2019) Return on Assets (ROA) is used to measure the profitability performance of firms in the industrial and service sectors in Oman. This area has hitherto been inadequately addressed. ROA is a form of Return on Investment (ROI) and measures the profitability of a business in relation to its total assets. The ROA formula is:

$$ROA = \frac{\text{Net income}}{\text{Average asset}}$$

3. RESEARCH METHOD

3.1. Model for Oil Prices and Profitability Performance

This study seeks to determine the influence of crude oil price, interest rate and exchange rate on profit for companies listed on the Stock Exchange of Oman. The variables are presented in Table 1. The econometric model is developed using panel data regression comprising time series and cross-sectional data. To alleviate the inherent problems of heteroscedasticity and autocorrelation associated with panel data, we apply the generalised least squares (GLS) instead of the ordinary least squares (OLS) method to model the relationship between oil price, interest rate, exchange rate and the return on assets as the dependent variable. That is,

$$ROA_{it} = \alpha_1 + \alpha_2 \text{ oilprice}_t + \alpha_3 \text{ interestrate}_t + \alpha_4 \text{ exchangerate}_t + \alpha_5 \text{ logasset}_{it} + \epsilon_{it} \tag{1}$$

We employ both fixed effects and random effects models of estimation as a remedial measure for the endogeneity problem that may occur due to fixed effects. Specifically, the adopted models are:

Fixed effects model

$$ROA_{it} = \alpha_{1i} + \alpha_2 \text{ oilprice}_t + \alpha_3 \text{ interestrate}_t + \alpha_4 \text{ exchangerate}_t + \alpha_5 \text{ logasset}_{it} + \epsilon_{it} \tag{2}$$

Random effects model

$$ROA_{it} = \alpha_1 + \alpha_2 \text{ oilprice}_t + \alpha_3 \text{ interestrate}_t + \alpha_4 \text{ exchangerate}_t + \alpha_5 \text{ logasset}_{it} + v_i + \epsilon_{it} \tag{3}$$

Where,

α_{1i} represents firms' fixed effects and, v_i represents firms' random effects, i is the cross section/firm and t is the time.

3.2. Impact of Industry Size on Profitability Performance

The literature revealed a negative relationship between industry size and profitability (Hall and Weiss, 1967; Ballantine et al., 1993; and Rajeev, 2001). Many researchers considered the volume of total assets as a measure of the firm/industry size (Eriksen and Knudsen, 2003; Pasiouras and Kosmidou, 2007). Joh (2003) used the log of the total asset as a measure of the

Table 1: Variables description

Variable	Description
ROA	Return on asset
Oil price	Average of OPEC Countries Spot Price POB/Dollars per Barrel
Interest rate	One day Bilateral Repurchase rate
Exchange rate	Exchange rate Omani Riyal/US
Logasset	Log of total asset

firm's size. In this study, since the ROA is a function of total assets, we adopt the log of the total assets as a measure of the firm's size to reduce the co-linearity effect between the dependent and independent variables.

3.3. Hypothesis Development

This study seeks to determine the influence of crude oil price, interest rate, and exchange rate on firm performance in the industrial and service sectors in the Muscat Stock Exchange. Most studies pointed out that changes in oil prices have a significant impact on firm performance (Janor et al., 2013; Mohanty et al., 2011).

In the Sultanate of Oman, no study has examined the relationship between oil price, interest rate, exchange rate and firm profitability. To address this issue, we used ROA as an indicator to measure the profitability performance of each industry. To this end, we formulate the following hypotheses:

H₁: The change in oil prices has a significant influence on financial performance in terms of ROA

H₂: The change in interest rate has a significant influence on financial performance in terms of ROA

H₃: Fixed effects model is the most appropriate model to study this phenomenon.

3.4. Sample Selection and Data Collection

This study tested the impact of oil prices on firm financial performance as measured by ROA. The financial data were collected from the financial statements of five sectors listed on the Muscat Securities Market (MSM) in the Sultanate of Oman. The panel data consists of five industries (cross-sections), namely cement, chemical, electrical, textile and oil sectors. For each industry, ROA, oil price, interest rate, exchange rate, and the log of total assets are measured over 7 years (2010-2018). The stock prices were converted to US dollar using the daily exchange rate reported by the Omani Central Bank. Monthly data on Brent and West Texas Intermediate nominal spot crude oil prices are taken from the Energy Information Administration (EIA) website (www.eia.doe.gov).

4. DATA SUMMARY

Table 2 presents the descriptive statistics. The average oil price was \$ US 84.93 per barrel. The average oil price and ROA in this

Table 2: Descriptive statistics for all data sets

Variable	Mean	Median	Min.	Max	Std. Dev.	Obs.
ROA for set (%)	8.43	3.5	-0.00054	32.36	10.06	45
Oil price (US\$/ Barrel)	79.50	76.64	40.14	109.61	25.40	45
Interest rate (%)	5.88	5.88	5.08	6.84	0.47	45
Exchange rate (%)	38.45	38.45	38.45	38.45	0.00	45

study showed large variation that ranges between 40.14 and 109.61 for oil price and 0.08% and 33.19% for ROA. Oil price showed the highest variation among the independent variables, followed by ROA. The interest rate is the least variable, with a standard deviation of 0.54. Exchange rate (OMR/US\$), being a constant in the case of the Sultanate of Oman, has zero variance.

Table 3 reports the descriptive statistics for the ROA in the five industries that were considered in the study. The cement industry exhibited the highest average ROA (27.02%), followed by the electrical sector (17.41%). The textile industry showed the lowest average ROA (0.21%). As for the variation, the electrical sector showed the highest variation with a standard deviation of 6.67, followed by the cement sector that reported a standard deviation of 5.38. Oil and textile sectors showed the lowest variation.

5. EMPIRICAL RESULTS

In this section, Tables 4-6 present the results of panel data analysis of the ROA equation using the three models considered in this study. Table 7 offers a summary of the statistical significance of each independent variable in the three models.

Table 3: Descriptive statistics for ROA categorised by industry

Industry	Mean	Median	Min.	Max	Std. Dev.	Obs.
Cement	21.29	24.36	0.40	32.36	11.11	9
Chemical	2.60	3.00	0.68	3.75	1.00	9
Electrical	15.16	14.00	6.89	25.09	6.75	9
Oil	2.93	2.87	1.54	4.27	1.05	9
Textile	0.18	0.20	-0.00054	0.31	0.09	9

Table 4: GLS regression coefficients

ROA	Coefficient	Std error	z	P> z	95% confidence	
Price	0.4119027	0.1317251	3.13	0.002	0.1537262	0.6700792
Interest rate 1	13.97577	8.16503	1.71	0.087	-2.027393	29.97894
Exchange rate 1	0	(omitted)				
Log assets	730.066937	266.2633	2.74	0.006	208.2004	1251.933
Industry						
Chemical	6491.14587	2364.296	2.75	0.006	1857.21	11125.08
Electrical	4629.167	2451.349	1.89	0.059	-175.3889	9433.722
Oil	6484.513	2364.277	2.74	0.006	1850.614	11118.41
Textile	6456.169	2364.215	2.73	0.006	1822.394	11089.95
Industry/Price						
Chemical	-0.4238004	0.1336927	-3.17	0.002	-0.6858332	-0.1617676
Electrical	-0.4921069	0.1336927	-3.17	0.002	-0.6858332	-0.1617676
Oil	-0.4613564	0.2351384	-1.96	0.061	-0.945633	0.0229203
Textile	-0.4093513	0.1158684	-3.53	0.002	-0.6479865	0.1707155
Industry/Interest rate 1						
Chemical	-14.57816	8.417548	-1.73	0.096	-31.91443	2.758101
Electrical	-11.28588	8.183549	-1.38	0.180	-28.14021	5.568455
Oil	-14.71147	10.42521	-1.41	0.171	-36.18259	6.759638
Textile	-13.90662	6.815194	-2.04	0.052	-27.94277	0.1295371
Industry/Log assets						
Chemical	-733.6398	183.6825	-3.99	0.001	-1111.941	-355.3387
Electrical	-516.5551	204.3696	-2.53	0.018	-937.4623	-95.64794
Oil	-732.3255	191.1156	-3.83	0.001	-945633	-338.7156
Textile	-730.2294	198.7918	-3.67	0.001	-1139.649	-320.81
Constants	-.6455.486	2364.202	-2.73	0.006	-11089.24	-1821.735

Table 4 gives the GLS regression coefficients for the independent variables in the five sectors. The cement industry is taken as the base. The regression coefficients for the base industry are given by 0.2635398, 7.199795 and 519.297 for each of the independent variables (price, Interest rate, and log assets) respectively. The constant term for the base industry is given by -4663.405 as depicted in the last row of the table. The constant terms for the remaining industries (Chemical, Electrical, Oil, and textile) are 4555.827, 3467.281, 4615.225, and 4568.334, respectively. All regression coefficients in all sectors are highly significant with the exception of interest rate that showed P = 0.156; 0.103; and 0.160 in the base industry (cement), oil and textile industries respectively. That is, the interest rate has no impact on the profitability performance of the cement, oil, and textile industries. The statistical significance of the regression coefficients for each industry in the three models of the study are summarised in Table 7.

All fixed effects in the above table are highly significant with P-values (0.005, 0.029, 0.005, and 0.005) for the five sectors. That is, the cross-section (industry/company) heterogeneity or effect on ROA is highly significant. Thus, every company has its significant intercept. It is worth noting that both R-squared and the adjusted R-squared are well above 90%, as reported above. This indicates that the assumed model is good.

The statistical significance of the regression coefficients for each independent variable in each sector for the three models of the study is summarised in Table 7.

The results of the random effects model are almost similar to the fixed effects model. The random effects model reports R-squared of 98.61, as depicted above. The log of total asset as a measure of the firm's size is highly significant with a negative sign for all industries,

Table 5: Fixed effects model results

ROA	Coefficient	Std error	z	P> z	95% Confidence	
Price	0.4119023	0.0905594	4.55	0.000	0.2253917	0.5984129
Interest rate 1	13.97575	8.16503	2.49	0.020	2.414821	25.53667
Exchange rate 1	0	(omitted)				
Log assets	730.0658	5.613358	3.99	0.001	353.0617	1107.07
Industry						
Chemical	6491.135	1633.886	3.97	0.001	3126.084	9856.187
Electrical	4629.157	1814.656	2.55	0.017	891.803	8366.511
Oil	6484.503	1699.816	3.81	0.001	2983.666	9985.341
Textile	6456.16	1710.697	3.77	0.001	2932.913	9979.407
Industry/Price						
Chemical	-0.4238001	0.2025419	-2.09	0.047	-0.840943	-0.0066571
Electrical	-0.4921065	0.1134827	-4.34	0.000	-0.7258284	-0.2583846
Oil	-0.4613564	0.2351384	-1.96	0.061	-0.945633	0.0229203
Textile	-0.409351	0.1158684	-3.53	0.002	-0.6479865	-0.1707155
Industry/Interest rate 1						
Chemical	-14.57816	8.417548	-1.73	0.096	-31.91443	2.758101
Electrical	-11.285	8.183549	-1.38	0.180	-28.14021	5.568455
Oil	-14.71147	10.42521	-1.41	0.171	-36.18259	6.759638
Textile	-13.90662	6.815194	-2.04	0.052	-27.94277	0.1295371
Industry/Log assets						
Chemical	-733.64	183.6825	-3.99	0.001	-1111.941	-355.338
Electrical	-516.55	204.3696	-2.53	0.018	-937.4623	-95.6479
Oil	-732.32	191.1156	-3.83	0.001	-0.945633	-338.715
Textile	-730.22	198.7918	-3.67	0.001	-1139.649	-320.81
Constants	-0.6455.477	1625.359	-3.97	0.001	-9802.967	-3107.986

Table 6: Random effects model results

ROA	Coefficient	Std error	z	P> z	95% confidence	
Price	0.4119023	0.0905594	4.55	0.000	-2.973769	5893955
Interest rate 1	13.97575	5.613358	2.45	0.013	2.973769	24.97773
Exchange rate 1	0	(omitted)				
Log assets	730.0658	183.0527	3.99	0.006	371.2891	1088.842
Industry						
Chemical	6491.135	1633.886	3.97	0.000	3288.777	9693.493
Electrical	4629.157	1814.656	3.81	0.011	1072.497	8185.818
Oil	6484.503	1699.816	3.81	0.000	3152.924	9816.082
Textile	6456.16	1710.697	3.77	0.000	3103.255	9809.065
Industry/Price						
Chemical	-0.423800	0.2025419	-2.09	0.036	-0.820775	-0.0268252
Electrical	-0.492106	0.1134827	-4.34	0.000	-0.7145284	-0.2696846
Oil	-0.461356	0.2351384	-1.96	0.050	-0.9222192	-0.0004935
Textile	-0.40935	0.1158684	-3.53	0.000	-0.636449	-0.182253
Industry/Interest rate 1						
Chemical	-14.5781	8.417548	-1.73	0.083	-31.07626	1.919927
Electrical	-11.2858	8.183549	-1.38	0.168	-27.32534	4.753581
Oil	-14.7114	10.42521	-1.41	0.158	-35.1445	5.721552
Textile	-13.9066	6.815194	-2.04	0.041	-27.26415	-0.549083
Industry/Log assets						
Chemical	-733.639	183.6825	-3.99	0.000	-1093.651	-373.6288
Electrical	-516.555	204.3696	-2.53	0.011	-917.1122	-115.998
Oil	-732.325	191.1156	-3.83	0.000	-1106.905	-357.7458
Textile	-730.229	198.7918	-3.67	0.000	-1119.854	-340.6046
Constants	-6455.477	1625.359	-3.67	0.000	-9641.123	3269.831

as expected. This result is concurring with the evidence obtained from the literature review that showed a negative relation between the industry size and profitability (Hall and Weiss, 1967; Ballantine et al., 1993; and Rajeev, 2001). The same result can also be seen in Tables 4 and 5 above for the GLS model and the fixed effects model.

Table 7 summarises the statistical significance of the regression coefficients for the five industries and the three models considered

above. It presents a summary of all results. All regression coefficients in all sectors are highly significant with the exception of interest rate that showed P-values of 0.156; 0.103; and 0.160 in the base industry (cement), oil and textile industries respectively. All fixed effects in the above table are highly significant with P-values (0.005, 0.029, 0.005, and 0.005) for the five sectors. The results of the random-effects model are almost similar to the fixed-effects model. The random-effects model reports R-squared of 98.61, as depicted above.

Table 7: Summary of results

ROA	Variables	fixed	random
Price	0.41190268**	0.0905594	0.41190233***
Interest rate 1	13.975772	5.613358	13.975748*
Exchange rate 1	(omitted)	(omitted)	(omitted)
Log assets	730.06686**	183.0527	730.06578***
Industry			
Chemical	6491.1448**	6491.1352***	-0.42380005*
Electrical	4629.1666	-0.49210652***	-0.49210652***
Oil	6484.5127**	-0.46135637	-0.46135637*
Textile	6456.1694**	-0.40935099**	-0.40935099***
Industry/Price			
Chemical	-0.42380041**	-0.42380005*	-0.42380005*
Electrical	-0.49210688***	-0.49210652***	-0.49210652***
Oil	-0.46135673***	-0.46135637	-0.46135637*
Textile	-0.40935135**	-0.40935099**	-0.40935099***
Industry/Interest rate 1			
Chemical	-14.578189	-14.578164	-14.578164
Electrical	-11.285904	-11.285879	-11.285879
Oil	-14.711499	14.711474	-14.711474
Textile	-13.906643	-13.906619	-13.906619*
Industry/Log assets			
Chemical	-733.64087**	-733.63979***	-733.63979***
Electrical	-516.55618	-516.5551*	-516.55511*
Oil	-732.32656**	-732.32548***	-732.32549***
Textile	-730.23046**	-730.22938**	-730.22938***
Constants	-6455.4862**	-6455.4766***	-6455.4766***

Legend: *P<0.05; **P<0.01; ***P<0.001

Table 8: Hausman test

Variable	Variables		Fixed		Random	
	Coefficient (b)	Fixed	Coefficient (B)	Random	(b-B) Difference	sqrt (diag (V_b-V_B)) S.E.
Price	0.0252063		0.0466823		-0.021476	0.02053
Interest rate 1	-2.116999		-1.274608		-0.8423913	0.8027287
Log assets	1.221102		8.536432		-7.31533	7.018153

6. TESTING: FIXED OR RANDOM EFFECTS MODEL?

Here, we use the Hausman test to test the hypotheses:

H_0 : The random-effects model is the appropriate model to use

H_1 : The random-effects model is not the appropriate model to use.

The result of the test is depicted in Table 8.

The test fails to reject the null hypothesis, as the P-value (Prob>Chi square=0.7803) is greater than 5%. Hence, we select the random-effects model as the appropriate model. The tests imply that the random-effects model's estimators are consistent and efficient.

7. CONCLUSION

This study investigated the impact of oil prices on the financial performance of five sectors in Oman, namely: cement, chemical, electrical, energy and textile. The data were collected from the Oman Exchange Market (MSM) the unique capital market in the country. The panel data consists of five sectors (cross-sections). For each sector, ROA, oil price, interest rate, exchange rate, and the log of total assets are measured over 7 years (2010-2018).

The current study assessed the relationship between oil prices and financial performance through ROA measures. In addition, the researchers adopted the fixed-effect model, which has rarely been adopted. The hypotheses are tested using panel data regression. All regression coefficients in all sectors are highly significant, with the exception of interest rate, which has no impact on the profitability performance of the cement, oil, and textile industries. Moreover, both fixed and effects models are highly significant. All in all, the study finds that oil prices positively and significantly affect financial performance (as represented by ROA) with the exception of the interest rate. Thus, all the hypotheses of the study are accepted. The results concluded that, all fixed effects are highly significant for the five sectors. The results of the random-effects model are similar to the fixed-effects model. Therefore, this study demonstrates that oil prices influence firm profitability for all the sampled sectors.

This study shed lights on the impact of oil prices on the financial performance of five sectors in Oman. The study presented the importance of oil prices fluctuation on financial performance of the firms in different sectors. Therefore, the leaders of the companies should be ware about this influence and build their strategy upon the same. The paper suffers from several limitations. ROA was used as the sole measure for financial performance. Future research

could include other financial measures such as ROE and leverage. Additional sectors could also be covered.

7.1. Limitations and Future Research Directions

The current study examines impact of oil prices on the financial performance of five sectors in Oman. This study used RIOA as a measure for financial performance and there are other financial measures can be adopted in the future research, as well as increase the sampling area in GCC and size for more representative results.

REFERENCES

- Aroui, M.H. (2011), Does crude oil move stock markets in Europe? A sector investigation. *Economic Modelling*, 28(4), 1716-1725.
- Ballantine, J.W., Cleveland, F.W., Koeller, C.T. (1993), Profitability, uncertainty, and firm size. *Small Business Economics*, 5(2), 87-100.
- Bjørnland, C.H. (2009), Oil price shocks and stock market booms in an oil exporting country. *Scottish Journal of Political Economy*, 56(2), 232-254.
- Dadashi, A., Pakmaram, A., Al-Din, M.M. (2015), Investigating effect of oil prices on firm value with emphasis on industry type. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 5(1), 109-129.
- Demiralay, S. (2013), The impact of oil prices on sectoral returns: An empirical analysis from Borsa Istanbul. *Theoretical and Applied Economics*. 12(589), 7-24.
- El-Chaarani, H. (2019), The Impact of oil prices on the financial performance of banking sector in Middle East Region. *International Journal of Energy Economics and Policy*, 9(5), 148-156.
- Elyasiani, E., Mansur, I., Odusami, B. (2011), Oil price shocks and industry stock returns. *Energy Economics*, 33(5), 966-974.
- Eriksen, B., Knudsen, T. (2003), Industry and firm level interaction: Implications for profitability. *Journal of Business Research*, 56(3), 191-199.
- Filis, G., Degiannakis, S., Floros, C. (2011), Dynamic correlation between stock market and oil prices: The case of oil-importing and oil-exporting countries. *International Review of Financial Analysis*, 20(3), 152-164.
- Ganguli, S. (2016), An economic analysis of sustainability of a potential GCC economic and monetary union during 2005-2014. *World Journal of Entrepreneurship, Management and Sustainable Development*, 12(3), 194-206.
- Hall, M., Weiss, L. (1967), Firm size and profitability. *The Review of Economics and Statistics*, 49(3), 319-331.
- Hamilton, J. (1983), Oil and the macroeconomy since World War II. *Journal of Political Economy*, 91(2), 228-248.
- Hamilton, J. (2009), Causes and consequences of the oil shock of 2007-08. *Brookings Papers on Economic Activity*, 40(1), 215-283.
- Hawaladar, I.T., Rohit, B., Pinto, P., Rajesha, T.M. (2017), The impact of oil price crisis on financial performance of commercial banks in Bahrain. *Banks and Bank Systems*, 12(4), 4-16.
- Hughes, J., Knittel, C., Sperling, D. (2008), Evidence of a shift in the short-run price elasticity of gasoline demand. *The Energy Journal*, 29(1), 113-134.
- Janor, H., Abdul-Rahman, A., Housseinidoust, E., Abdul Rahim, R. (2013), Oil price fluctuations and firm performance in an emerging market: Assessing volatility and asymmetric effect. *Journal of Economics, Business and Management*, 1(4), 385-390.
- Joh, S.W. (2003), Corporate governance and firm profitability: Evidence from Korea before the economic crisis. *Journal of Financial Economics*, 68(2), 287-322.
- Kilian, L. (2009), Not all oil price shocks are alike: Disentangling demand and supply shocks in the crude oil market. *American Economic Review* 99(3), 1053-1069.
- Mohanty, S.K., Nandha, M., Turkistani, A.Q., Alaitani, M.Y. (2011), Oil price movements and stock market returns: Evidence from Gulf Cooperation Council (GCC) countries. *Global Finance Journal*, 22(1), 42-55.
- Mongi, A., Rejeb, A.B. (2016), Oil, Gold, US Dollar and Stock Market Interdependencies: A Global Analytical Insight. Germany: University Library of Munich. Available from: <https://www.mpra.ub.uni-muenchen.de/70452>.
- Nguyen, C.T. (2020), Impact of working capital management on firm performance in different business cycles: Evidence from Vietnam. *Journal of Asian Finance, Economics and Business*, 7(12), 863-867.
- Nguyen, T.N., Nguyen, D.T., Nguyen, V.N. (2020), The impacts of oil price and exchange rate on Vietnamese stock market. *Journal of Asian Finance, Economics and Business*, 7(8), 143-150.
- Osamah, M.K., Ali, M. (2017), The impact of oil price movements on bank non-performing loans: Global evidence from oil-exporting countries. *Emerging Markets Review*, 31, 193-208.
- Pasiouras, F., Kosmidou, K. (2007), Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222-237.
- Poghosyan, T., Hesse, H. (2009), Oil Prices and Bank Profitability: Evidence from Major Oil-exporting Countries in the Middle East and North Africa. IMF Working Paper, Middle East and Central Asia Department WP/09/220. Washington, DC: International Monetary Fund.
- Qayyum, N., Noreen, U. (2019), Impact of capital structure on profitability: A comparative study of Islamic and conventional banks of Pakistan. *The Journal of Asian Finance, Economics and Business*, 6(4), 65-74.
- Rajeev, D. (2001), Firm size and productivity differential: Theory and evidence from a panel of US firms. *Journal of Economic Behavior and Organization*, 44(3), 269-293.
- Sadorsky, P. (1999), Oil price shocks and stock market activity. *Energy Economics*, 21(5), 449-469.
- Sadorsky, P. (2011), Assessing the impact of oil prices on firms of different sizes: Its tough being in the middle. *Energy Policy*, 36(10), 3854-3861.
- Tailab, M. (2014), The effect of capital structure on profitability of energy American firms. *International Journal of Business and Management Invention*, 3(12), 54-61.
- Wattanatorn, W., Kanchanapoom, T. (2012), Oil prices and profitability performance: Sector analysis. *Procedia-Social and Behavioral Sciences*, 40,763-767.
- Yan, L. (2012), Analysis of the international oil price fluctuations and its influencing factors. *American Journal of Industrial and Business Management*, 2, 39-46.