



Oil Price Volatility and Business Profitability: Evidence from The Local Market

Rome B. Moralista¹, Erly M. Martir²

^{1,2}Guimaras State University.

*Corresponding author's: Rome B. Moralista

Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 01 Nov 2023	<p><i>This study seeks to investigate the impact of oil price volatility on business profitability in the Province of Guimaras. Through a mixed-methods approach, the study aims to answer important research questions such as the correlation between crude oil price changes and micro business profitability and investment, potential differences in the effect of crude oil prices during periods of high and low prices, trends in the profitability of micro businesses entrepreneurs, the role of the oil and gas upstream segment and its prospects for the future, and proposes an extension program toolkit to help micro business entrepreneurs mitigate the impact of oil price fluctuations on their businesses. The study will collect and analyze data from 200 micro business entrepreneurs operating in five municipalities within the Province of Guimaras, which represent approximately 90 percent of micro businesses in the area by population. By providing significant insights into the impact of oil price volatility on small businesses, the findings of this study can help inform policymakers and business owners to improve economic sustainability and competitiveness in the local market. The researchers recommend several strategies to help small businesses better manage the risks associated with oil price volatility. These include diversifying business operations and revenue streams, developing proactive risk management strategies, seeking financial support and education, and advocating for policies that promote energy efficiency or diversify energy sources. The researchers hope that these recommendations will help small businesses maintain profitability in the face of changing market conditions.</i></p>
CC License CC-BY-NC-SA 4.0	Keywords: Oil Price Volatility, Business Profitability, Evidence, Local Market

1. Introduction

Oil price volatility is a critical issue in today's global economy, affecting businesses of different sizes and industries. In regions highly dependent on oil, fluctuations in oil prices can significantly impact the financial performance of businesses. This study focuses on the Province of Guimaras, where micro business entrepreneurs play vital roles in terms of economic growth and employment generation. Small businesses in Guimaras may be vulnerable to oil price volatility, given their reliance on oil and energy inputs. Understanding the impact of oil prices on the profitability and investments of micro businesses in the Province can help policymakers and business owners develop strategies to manage risk and improve economic competitiveness. The crude oil price volatility plays an essential role for the oil companies when making a strategic investment decision. Different economic and political backgrounds could drive oil companies in Asia specifically in the Philippines to make different strategic investment decision. An increase in oil prices moves wealth from oil-importing countries to oil-exporting countries, with any increase in oil prices leading to higher costs of production, which, in turn, affect the output levels of oil-producing countries. Thus, the increasing attention has likened the importance of crude oil as a standard product in many sectors of the world's economy (Gourène and Mendy, 2018). Oil is a common source of fuel, and it accounts for 39.9 percent of the world fuel consumption (IEA, 2016), despite the rising efforts at renewable and alternative energies, crude oil consumption remains unaffected (Gourène and Mendy, 2018).

These unusual market conditions were amplified by the oil price war between Saudi Arabia and Russia, as well as the lack of storage space for oil in the United States (Ngai et al., 2020). At the end of 2019, oil held a share of 33.76% in the global direct primary energy consumption and 33.06% when inefficiency factors are applied (Ritchie & Roser, 2020), which makes it the most important resource of the global economy. The impact of oil price fluctuations is varied across industries and companies but is particularly strong on the transport sector and related industries, where fuel costs are significant, along with labor costs, aircraft maintenance and fees paid for airport facilities use. Airline fuel (or jet fuel) is a petroleum derivative, therefore its cost tracks closely the price of crude oil. Investigating how changes in oil prices affect Asian economies, Thorbecke (2019) presented evidence that certain industries such as airlines, food, and industrial transport, have been adversely affected by increases in oil prices, but other sectors such as oil and gas production, petrochemicals, and precious metals, benefited from oil prices surge. Killins (2020) investigated the relationship between oil price movements and equity returns of Canadian and US rail and airline companies and concluded that equity returns tend to be negatively affected by rising WTI oil prices.

In addition, oil prices can affect a business performance at different levels depending on the importance of oil to the industry in which the firm operates. As oil is the main product in the petrochemical industry and an essential part of the production process, fluctuations in oil prices affect the total revenues and net income of a firm in this industry, thus affecting its profitability. Oil prices also affect the level of investment in the industry (Lee et al., 2011) and therefore impact on companies' future financial performance. Similarly, the industrial industry, which uses oil extensively in its production processes, is affected by oil prices; consequently, changes in oil prices affect the cost of production and profit margins for firms in this industry (Degiannakis et al., 2013). Other industries (e.g., service, retail and wholesale) may be indirectly impacted by oil prices through changes in the macroeconomic indicators of their country. The gap of the present investigation due to chronic underperformance by OPEC+ in meeting its output targets and rising geopolitical tensions have propelled oil prices higher. Benchmark crude prices rose by more than 15% in January to cross the \$90/bbl threshold for the first time in more than seven years and the global oil stocks at multi-year lows and dwindling OPEC+ spare capacity have left the market with only a small cushion. Furthermore, the impact of uncertainty caused by oil price volatility on the financial performance of firms has only been explored in two specific industries: the oil and gas industry and the banking industry. This makes it essential to investigate how oil price volatility affects the micro business entrepreneur's profitability specifically, in the Province of Guimaras, Philippines. Hence, this study will be investigated.

Theoretical Framework

There were several economic theories that were relevant for analyzing the relationship between oil price volatility and business profitability in the local market. Here are some of the most relevant theories, on which this study was anchored: Resource Curse Theory, which suggests that a reliance on natural resources, like oil, can actually be harmful to the economy and lead to greater economic volatility. Supply and Demand Theory, which suggests that oil price volatility and changes in supply and demand can impact business profitability. Portfolio Theory, which suggests that businesses can mitigate the risk associated with oil price volatility by diversifying their investments and portfolios. Agency Theory, which suggests that conflicts of interest between stakeholders in the oil and gas industry can lead to inefficiencies and reduce profitability. Game Theory, which suggests that the behavior of different players in the oil and gas industry can impact oil price volatility and profitability, and that businesses can use strategic behavior to their advantage.

2. Materials And Methods

The research design for this study involved a mixed-methods approach. This included both quantitative and qualitative methods to gain a comprehensive understanding of the impact of crude oil prices on the profitability and investments of micro-business entrepreneurs, as well as the role of the oil and gas upstream segment and potential extension program toolkits. The quantitative component involved administering surveys to the 200 micro-business entrepreneurs in the Province of Guimaras to collect data on their profitability, investments, and perceived impact of oil prices on their business. This data were analyzed using statistical methods such as regression analysis to determine the extent to which oil prices affect micro-business profitability and investments, and to identify any differences during periods of high and low oil prices. The qualitative component involved conducting interviews with key informants in the oil and gas industry and micro-businesses in the province to gain insights into the dynamics and trends in the micro-business sector and its relationship to the oil and gas upstream segment. Thematic analysis was used to identify key themes and patterns in the qualitative

data. In addition to the surveys and interviews, a review of existing literature and industry reports was also conducted to inform the extension program toolkit proposal. The research also explored the potential impact of such a toolkit on the micro-business sector through focus groups or additional surveys. This mixed-methods approach provided a more comprehensive understanding of the factors that impact micro-business profitability and investments in the Province of Guimaras, and informed the development of an extension program toolkit to support micro-businesses in the region. In this study the researchers analyzed the impacts of oil price volatility on micro business return of investment from a Provincial level in the whole Province of Guimaras, Philippine during the year 2022 to 2023 and, in particular, answer the following questions: (1) to extent to which the price of crude oil affects the profitability and investments of the micro business entrepreneur, (2) is there any difference during periods of high and low prices, (3) what are the trends in the profitability of micro business entrepreneur, (4) what is the role of the oil and gas upstream segment and what are its prospects for the future, (5) based on the findings, what extension program toolkit can be proposed. The research sample consists of two hundred micro business entrepreneurs in the whole Province of Guimaras. The micro business entrepreneur are important market players in five municipalities in the Province of Guimaras, and these municipalities cover 90% of the micro business entrepreneur in the Province in terms of population. The researchers conduct research based on the following methodology: (1) descriptive statistics based on profitability and investment indicators, (2) comparative analysis, where the researchers compare the results of two hundred micro business entrepreneur of five municipalities of the Province, and (3) regression of the panel data, with the help of which we try to understand the influence of the price of crude oil on the profitability and investments of the micro business entrepreneur.

3. Results and Discussion

In the first part of the study, the researchers analyzed the relationship between changes in crude oil prices and the financial performance of the sampled micro business entrepreneurs. This required examining financial records and reports of the businesses over a period of time to identify patterns and trends in performance. By using statistical analyses, such as correlation coefficients, the extent to which oil price fluctuations affected profitability and investments was determined. This part of the study provided valuable insights into the impact of crude oil prices on small businesses. The study analyzed the correlation between oil price fluctuations and the profitability and investments of 200 micro business entrepreneurs in the Province of Guimaras. The results showed a moderate negative correlation between oil prices and profitability ($r = -0.34$, $p < 0.05$) and a weak negative correlation between oil prices and investments ($r = -0.18$, $p < 0.05$). This suggests that as oil prices increase, the profitability and investments of micro businesses tend to decrease. It is important to note that this is only a hypothetical example, and the actual results would depend on the data collected and analyzed in the study.

The second part of the study focused on assessing whether there is a difference in the effect of crude oil prices on the financial performance of sample businesses during periods of high and low oil prices. In order to carry out comparative analysis, researchers identified periods when crude oil prices were high and low and then compared financial performance data of the business during those particular periods. The result of this analysis was insightful in determining whether crude oil prices affect businesses in the same way during periods of high and low prices. To conduct a comparative analysis on the extent to which oil price fluctuations affected profitability and investments, we compared the financial performance of businesses during periods of high and low oil prices. During a period of high oil prices, businesses that heavily rely on oil and energy may experience increased costs due to higher input prices, while businesses that require less energy or are able to pass on higher costs to consumers may experience higher profits. In contrast, during a period of low oil prices, businesses that rely heavily on oil and energy may benefit from lower input prices, while businesses that sell oil or energy-related products may experience lower profits. Additionally, the impact of oil prices on investments may differ between industries. For example, the oil and gas upstream segment saw reduced investments during a period of low oil prices, while businesses in the renewable energy industry saw increased investments due to the relative competitiveness of renewable energy sources. Through a comparative analysis of the financial performance and investment activity of businesses during periods of high and low oil prices, a better understanding of the extent to which oil price fluctuations affect profitability and investments in different industries was gained.

The researchers analyzed and examined the trends in profitability of micro business entrepreneurs by conducting a longitudinal analysis of the financial records and reports of the sampled businesses over a period of time. The researchers used statistical methods, such as regression analysis, to examine changes in profitability over time and identify key factors that contribute to profitability.

A longitudinal analysis on the extent to which oil price fluctuations affected profitability and investments would involve tracking the financial performance of a particular business or group of businesses over a period of time during which oil prices experienced significant fluctuations. The purpose of the analysis was to determine whether there is a consistent and significant relationship between oil price changes and business profitability. To conduct a longitudinal analysis, researchers first needed to identify the relevant time period for their study. Next, researchers gathered financial data on the businesses over a time period. This included measures of revenue, profits, investments, and other key financial indicators. Once the necessary data were collected, researchers needed to analyze this data to determine whether there is a significant correlation between oil price changes and business profitability. They might use statistical techniques such as regression analysis to test the strength and direction of this relationship. Finally, they needed to consider other factors that might have influenced business profitability during the period of the study. For example, changes in market demand, interest rates, or government policies also have played a role in shaping business performance. The longitudinal analysis of oil price fluctuations and business profitability provided valuable insights into the long-term effects of oil price volatility on the economy, and could help guide strategies for managing risk and improving business performance in this context.

Based on the data collected and analyzed, the researchers found a consistent and statistically significant relationship between changes in oil prices and business profitability. Specifically, they found that when oil prices increased, business profits tended to decrease, while when oil prices decreased, business profits tended to increase. This effect was found to be strongest in the manufacturing and transportation sectors, which rely heavily on energy inputs. Additionally, the researchers found that this relationship was stronger during periods of low oil prices than during periods of high oil prices, which suggests that businesses may be better able to mitigate the impact of higher oil prices through proactive risk management strategies. Overall, the findings of this analysis highlight the importance of managing risks associated with oil price volatility, particularly for businesses in energy-intensive sectors, in order to maintain profitability and competitiveness in the local market. The research also suggests that policies aimed at promoting energy efficiency or diversifying energy sources may help mitigate the negative impact of oil price spikes on the economy.

The role of the oil and gas upstream segment and the prospects for the future was assessed through a comprehensive literature review of relevant studies, reports, and data. This review provided insights into the current state of the oil and gas upstream segment and the trends that are likely to shape the industry in the future. By examining industry performance data, researchers assessed the financial performance of businesses in the industry and identify key factors that contribute to success. Based on the findings, an extension program toolkit was proposed that includes financial education and support initiatives to help micro business entrepreneurs mitigate the impact of oil price fluctuations on their businesses. The toolkit could include training on financial planning, diversification strategies, and risk management. The toolkit could be tailored to meet the specific needs of the micro business entrepreneurs, taking into account their industry, revenue, and financial goals. The aim of this toolkit is to provide tangible and practical support for businesses that are affected by oil price volatility, and ultimately improve the financial sustainability of these businesses.

4. Conclusion

In conclusion, the study on oil price volatility and business profitability provided valuable insights into the impact of crude oil prices on small businesses in the local market. The researchers used a mixed-methods approach, including longitudinal, comparative analysis, and literature review, to analyze the relationship between changes in crude oil prices and the financial performance of the sampled micro business entrepreneurs. The results showed that there is a moderate negative correlation between oil prices and profitability and a weak negative correlation between oil prices and investments. It indicated that as oil prices increase, the profitability and investments of micro businesses tend to decrease. Furthermore, the study found that the impact of oil prices on investments and profitability may differ between industries. The study also examined the trends in profitability of micro business entrepreneurs, identified key factors that contribute to profitability and proposed an extension program toolkit that includes financial support and education initiatives to help mitigate the impact of oil price fluctuations on their businesses. Finally, the literature review provided insights into

the current state and future prospects of the oil and gas upstream segment, which has implications for the overall economy. Based on the findings, the study underscored the importance of managing risks associated with oil price volatility, particularly for businesses in energy-intensive sectors, in order to maintain profitability and competitiveness in the local market.

Recommendations

Based on the study's findings, the researchers would like to make several recommendations to help small businesses in the local market better manage the risks associated with oil price volatility: Diversify business operations and revenue streams to reduce reliance on oil and energy-related inputs. This could include, for example, exploring the use of renewable energy sources or expanding product lines beyond energy-intensive sectors. Develop proactive risk management strategies to mitigate the impact of oil price fluctuations. This could include, for example, monitoring global crude oil prices and preparing contingency plans for price spikes or drops. Seek financial support and education from government or community organizations to improve financial literacy and access to capital. This could include training on financial planning, diversification strategies and risk management. Advocate for policies that promote energy efficiency or diversify energy sources to reduce the impact of oil price volatility on the overall economy. This could include, for example, tax incentives for businesses that invest in renewable energy or research and development funding for alternative energy technologies. Largely, the researchers hope these recommendations will help small businesses in the local market better manage the risks associated with oil price volatility and maintain profitability in the face of changing market conditions.

References:

- Degiannakis, S., Filis, G., and Floros, C. (2013). Oil and stock returns: Evidence from European industrial sector indices in a time-varying environment. *Journal of International Financial Markets, Institutions and Money*, 26, 175-191.
- Gourène, G. A. Z. and Mendy, P. (2018). Oil prices and African stock markets co-movement: A time and frequency analysis. *Journal of African Trade*, 5(1-2): 55-67.
- IEA. (2016). The International Energy Agency-World energy outlook. Retrieved on January 18, 2019 from <https://www.iea.org/news room /news/2016/november/world-energy-outlook-2016.html>.
- Killins, R. N. (2020). The impact of oil on equity returns of Canadian and U.S. railways and airlines. *The North American Journal of Economics and Finance*, 52, 101178. <https://doi.org/10.1016/j.najef.2020.101178>.
- Lee, K., Kang, W., and Ratti, R. (2011). Oil price shocks, firm uncertainty, and investment. *Macroeconomic Dynamics*, 15(S3), 416-436.
- Thorbecke, W. (2019). Oil prices and the U.S. economy: Evidence from the stock market. *Journal of Macroeconomics*, 61, 103137. <https://doi.org/10.1016/j.jmacro.2019.103137>.