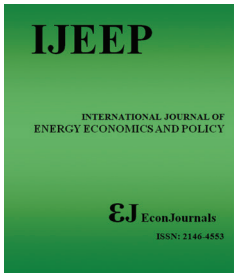

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Oil Price Volatility across Timeframes and its Impact on ASEAN Stock Indices: Changes Observed since the COVID-19 Pandemic

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ABSTRACT

Oil is considered a vital energy source and changes in oil prices have important implications for developed as well as developing economies. By keeping this point of view, the current study aimed at analyzing the impact of oil prices on the stock prices of the most dynamic region of the world namely; The Association of South East Asian Nations (ASEAN). The post-COVID-19 data period was selected by the authors because the COVID-19 pandemic created oil price shocks which translated into global oil prices. The empirical findings demonstrate that oil prices significantly affect ASEAN stock indices. Nonetheless, the effect differs at various frequency levels. In the short to medium term, market participants should be cognisant of oil price volatility and its immediate effects. In the long term, investors and governments should prioritise basic economic indicators as stock markets increasingly detach from oil price volatility. These findings indicate that investors and governments ought to consider varying time horizons. In the short and medium term, oil price fluctuations considerably affect stock markets, necessitating effective risk management measures. Ultimately, attention should transition to more comprehensive economic indicators, as the stock market becomes increasingly less affected by oil prices. This comprehension is essential for formulating educated investment strategies and influencing energy policies in the ASEAN region.

Keywords: Economic Impact, Market Trends, Oil Prices, ASEAN Markets, Post-COVID-19
JEL Classifications: E60, G10, Q41, F15

1. INTRODUCTION

Oil has been one of the most widely used commodities for several decades. It is used in all levels and sectors of the economy. The Persian Gulf international crisis in the year 1991 is a proof to the importance of oil (Huang et al., 1996). Even after the advent of alternative energy sources and renewables, the level of world oil consumption is unchanged. The oil price is dependent on many factors such as quantity produced, geopolitical situation, market demand, and available reserves (Gourène and Mendy, 2018).

Economic activity is significantly impacted by oil prices, whether it is oil exporter or importer (Gourène and Mendy, 2018). However, over the last decade, oil prices exhibited significant volatility (Jawadi and Sellami, 2022). This volatility is evidence that the global economy will soon enter into an era of high commodity price volatility. The oil price volatilities occur mainly due to geopolitical situations, and economic, and financial crises (Ghedira and Nakhli, 2023). Jawadi and Sellami (2022) reported three main factors that contributed to the oil price volatility. The first one is the global financial crisis (2007–2008). The second is the United

States shale revolution in 2015. This revolution made the United States an important oil producer along with OPEC+. The third and most recent is the emergence of the COVID-19 pandemic.

Currently, the global economy is recovering from the worst oil price crash in history (Asafo-Adjei et al., 2024). Such a massive oil price crash occurred because of the COVID-19 pandemic. During the COVID-19 period, a massive downfall was observed in oil prices and they reached 13 USD a barrel in April 2020. Such a volatility also impacted the stock markets around the globe (Boukhatem and Alhazmi, 2024). Therefore, it is important to understand the connection between oil prices and the return of securities traded in the stock market during the COVID-19 period. The stock market is considered a barometer of the economic activity of any country (Gourène and Mendy, 2018). It is a volatile environment that provides investors with positive or negative signs related to the stock return (Eldomiaty et al., 2020). The stock market responds to significant events which can be classified as exogenous or endogenous (Arias-Calluari et al., 2021). COVID-19 is its most recent example (Chowdhury et al., 2022; He et al., 2020; Ozkan, 2021). COVID-19 delivered an exogenous shock to the stock market (Sadiq et al., 2021).

The theoretical linkages between oil prices and stock return can be explained with the help of the equity valuation theory (Badeeb and Lean, 2018). The theory states that stock prices are the sum of discounted values of expected future cash flows at different time intervals (Huang et al., 1996). The economic linkage between oil prices and stock return is also justified by the impact of oil price changes on cashflows and corporate gains (Jouini, 2013). As it was stated by Gourène and Mendy (2018) oil is almost used at all economic levels. Thus, the variation in oil price changes the cash flow pattern of most companies, especially companies whose reliance on oil is high. As a result, besides the fact that a country is an oil importer or exporter, a shift in oil prices changes the trade balance of a country. Such trade balance shocks impact the exchange rate of the country, which, in turn, impacts the inflation rate. This phenomenon has a direct impact on stock prices as the inflation rate and discount rate normally exhibit a positive correlation (Eldomiaty et al., 2020).

The studies on oil price and stock return have been a very popular topic among researchers for many years (Apergis et al., 2009; Azhari et al., 2021; Gourène and Mendy, 2018). It is because in oil depending economies, change in oil prices have to potential to impact their stock markets (Hung and Vo, 2023). Therefore, the current research is aimed at analyzing the relationship between oil prices and stock return in the most dynamic region of the world, named ASEAN. The foundation of ASEAN on 8 August 1967 was to promote political stability, ensure regional peace, and stimulate economic growth among its members related to different ethnic diversity (Azhari et al., 2021;Jiang & Liu, 2021). ASEAN, which initially started with 5 nations (Singapore, the Philippines, Thailand, Indonesia, and Malaysia) (Britannica, 2024), has now reached 10 member nations (Cambodia, Singapore, Brunei Darussalam, Myanmar, the Philippines, Laos, Thailand, Indonesia, Vietnam, Malaysia) (Association of Southeast Asian Nations, 2021).

ASEAN, as a whole, is a big economy of $3.2 trillion with a total population of about 662 million (Council on Foreign Relations, 2023). ASEAN's economic growth has been one of the fastest and most dynamic in the world. It is among the most preferred investment destinations in the world. Its projected growth rate is 5%/year and it is expected to become the fourth-largest economy in the world by the year 2030. However, such growth estimated could be hampered by COVID-19 which caused unprecedented disruption to the economies around the globe. The energy sector, which is a growth engine for the economy, was not an exception during COVID-19. However, the energy sector can play a vigorous role in the recovery and reconstruction of the global economy (ASEAN Centre for Energy, 2020a). According to the ASEAN Centre for Energy (2020b), the demand for the energy in ASEAN region expected to be double by the year 2040.

ASEAN economies are net oil-importing economies and they are oil-intensive in production. Indonesia and Malaysia are the largest oil producers (producing about 70% of the total oil production) in the ASEAN region. The oil production of the ASEAN declined in the last decade because of COVID-19. ASEAN nations maintain small reserves of oil which makes them more vulnerable to oil price volatility (Mensi et al., 2022). According to Mensi et al. (2021), the COVID-19 pandemic and the European debt crisis (EDC) caused the most volatility transmission among ASEAN nations.

The purpose of the current study is to analyze the connection between oil prices and the stock return of ASEAN countries. To the best of the authors' knowledge, there is not any comprehensive study in the existing literature with covers such a relationship with the help of wavelet analysis and quantile on quantile approach. The use of a comprehensive approach to capture the oil-stock relationship is mandated by previous literature (Joo & Park, 2021; Liu et al., 2023) which highlighted that due increase interest in oil-stock relationship a detailed analysis should be conducted which encompass the important characteristics of stock market. Furthermore, it is anticipated that ASEAN's energy demand would double by 2040. Therefore, any shocks in oil prices can impact the ASEAN economy in general and the share prices of companies in specific. The current investigation also selected the COVID-19 data period as reported by Ghedira and Nakhli (2023) that a causal relationship between oil and stock prices exists during financial, economic, and health crisis periods.

2. LITERATURE REVIEW

In addition to being a global energy supply, oil has a significant impact on stock returns (Umar et al., 2024). There are a large number of studies (Ehouman, 2020; Hanif et al., 2023; Hashmi et al., 2021; Kumar, 2019; Mohammed et al., 2023; Nasreen et al., 2020; Pal and Mitra, 2017; Tiwari et al., 2021; Toparlı et al. 2019) in existing literature that addressed difference over the direction of the relationship between oil prices and stock return based on various data periods and methodologies (Asafo-Adjei et al., 2024; Ivanovski and Hailemariam, 2021). Investors and academics are still exploring how the oil price anomalies impact stock prices in the context of sectoral (Bouri et al., 2023; Umar et al., 2024), national (Khan et al., 2022; Tabash et al., 2022), and global viewpoints (Okpezune et al., 2023).

Theoretically, the link between oil prices and stock market return is ambiguous (Ivanovski and Hailemariam, 2021). This relationship depends on multiple factors such as whether the country is an oil importer or exporter (Khamis et al., 2018; Osah and Mollick, 2023; Wang et al., 2013). The previous literature proved that the increase in oil prices proved to be harmful to oil-importing countries (Chang et al., 2023; Joo and Park, 2021). Whereas oil-exporting countries were found to be beneficial to the rise in oil prices (Olayungbo et al., 2024; Wang et al., 2013). A surge in oil prices transfers the wealth from oil-exporting countries to oil-importing countries. This phenomenon creates a current account imbalance for oil-importing countries (Helmi et al., 2023).

The positive shocks in the oil prices put downward pressure on the local currency of oil-importing countries. As a result, the overall economy in general, and the stock market in particular, faces a downfall (Tabash et al., 2022). Joo and Park (2021) provided empirical evidence of the detrimental effect of oil price volatility on the returns of stock of major oil-importing nations (Korea, Japan, Italy, India, Germany, France, China, the Netherlands, United States, and Spain). They observed that such a negative impact was stronger at lower quantile levels as compared to medium or high quantile level.

Oil price shocks affect the economy of a country based on its location in the international market (Helmi et al., 2023). The significance of oil to the national economy and whether supply or aggregate demand drives fluctuations in oil prices determine the direction and degree of these shocks. Mokni (2020) found that stock return repond more to demand shocks as compared to supply shocks. The impact of these shocks may fluctuate over time (Helmi et al., 2023). It was claimed by Park and Ratti (2008), that if oil price shocks influence the real economy through consumer and firm behavior, then such a relationship may have an observable impact on global stock markets.

3. RESEARCH METHODOLOGY

3.1. Data

This study models the oil prices impact on ASEAN stock indexes in the aftermath of the COVID-19 outbreak. West Texas Intermediate (WTI) Crude Oil prices serve as a benchmark for evaluating oil prices. The Dow Jones Asean Stock Index serves as a proxy for conventional index performance. The specified data period for this study is from January 21, 2020, to April 5, 2024. The empirical study employs the Continuous Wavelet Transformation (CWT) method, previously utilised in research by Dong et al. (2019), Sharrif et al. (2020), and Raza et al. (2018). The data for the specified variables is sourced from Datastream. To enhance the robustness of this study's conclusions, we transformed the sample data into the logarithmic difference series to derive the series of returns.

3.2. Empirical techniques

3.2.1. Wavelet analysis

In the mid-1980s, as an alternative to Fourier analysis, the wavelet analysis technique was established. It is a commonly used method for finding correlations at different frequencies. It is hard to find structural breakdowns or uncover transitory connections using Fourier analysis because it disregards the time-localized information (Aguiar-Conraria and Soares, 2011). Conversely, a wavelet translates the time series data into basic wavelets, that are translational and an extensional copy of a mother wavelet in the frequency and time domains. This causes the series to expand into the time-frequency domain, where its oscillations can be intuitively detected by researchers. Wavelet analysis works for stationary and non-stationary series, but Fourier analysis only works for stationary series, according to Rouef and Sachs (2011).

Wavelet transforms come in two primary varieties: CWT and "Discrete Wavelet Transforms" (DWT). We employ the CWT created by Aguiar-Conraria and Soares (2011) and Aguiar-Conraria et al. (2012) to partition the relevant series into wavelets. The continuous wavelet transforms were chosen because of their ability to extract characteristics that reduce the resources needed to give useful information. More than that, it does what you want it to and offers pertinent data. In contrast, DWT does little more than compress the data and reduce noise. Since CWT employs a reduced data set, it is more practical than using full-sized sample data (Chang et al., 2013).

The preceding literature examined the connection between oil and stock prices utilising conventional econometric methods. The conclusions of prior studies (Cong et al., 2008; Dagher and Hariri, 2013; Narayan et al., 2008) are inconsistent due to the lack of frequency data in current time-series analyses. Consequently, CWT is well equipped to manage information concealed within the time as well as the frequency domains, since it may partition a dataset into distinct intervals and reveal the genuine dynamic co-movements of the relevant variables. The primary advantage of CWT is the consideration of heterogeneity in investment horizons through the analysis of the data's temporal and frequency domain characteristics (Haque et al., 2018; Rahim and Masih, 2016). The CWT $w_{x(u,s)}$ is attained by projecting a mother wavelet Ψ onto the examined time series $x(t) \in l^2$ (R), that is

$$W_x(u,s) = \int_{-\infty}^{\infty} x(t) \frac{1}{\sqrt{s}} \psi\left(\frac{t-u}{s}\right) dt \qquad \text{Equation 1}$$

In this context, u denotes the time domain, whereas s symbolizes the frequency domain. Torrence and Webster (1999) state that the wavelet coherence of the two time series u and s can be articulated as follows:

$$\mathrm{R}_{\mathrm{n}}^2(s) = \frac{\mathrm{I}S(s^{-1}W_n^{xy}(s))\mathrm{I}^2}{S\left(s^{-1}\mathrm{I}WW_n^{x}(s)\right)\mathrm{I}^2 . S(s^{-1}\mathrm{I}W_n^{y}(s))\mathrm{I}^2} \qquad \text{Equation 2}$$

S functions as a smoothing operator, s denotes wavelet scale, $\mathrm{WW}_{\mathrm{n}}^{\mathrm{x}}(\mathrm{s})$ signifies the transformation of the time series X in continuous form, $\mathrm{W}_{\mathrm{n}}^{\mathrm{y}}(\mathrm{s})$ denotes the continuous wavelet transform of the time series Y, and $\mathrm{Y}_{\mathrm{n}}^{\mathrm{xy}}(\mathrm{s})$ represents the cross wavelet transformation of the two time series X and Y.

4. FINDINGS AND DISCUSSION

Table 1 delineates the fundamental attributes of the data series in conjunction with the correlation outcomes. The average figures for oil prices and the ASEAN Stock Index (ASI) are 1113.152 and 1395.923, respectively. The minimum values for oil prices and ASI are 511.2800 and 982.4800, respectively, while their maximum values are 2008.580 and 1639.090. The correlation analysis indicates a moderate positive connection of 0.3465 between the ASEAN Stock Index and oil prices. This positive correlation indicates that, on average, a rise in oil prices correlates with an increase in the ASEAN Stock Index. The apparent association may stem from the reliance of numerous ASEAN economies on energy-intensive businesses, wherein variations in oil prices directly affect costs and profit margins. This link highlights the significance of oil as a barometer of economic activity in the region, as escalating oil prices may indicate heightened industrial demand, hence enhancing investor sentiment and stock market performance.

Table 2 presents the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit root testing. To assess the stationarity of the data, we employed three separate methods. The tables indicate that ASI is stationary at level 1(0) and at the first difference. Conversely, the oil price remains stationary at the initial difference. Consequently, Table 2 demonstrates that the variables exhibiting non-stationarity at a certain level have attained stationarity following a single differencing. The results from many tests demonstrate that none of the variables display stationarity at the second difference, a trait that is significant for analytical reasons.

All variables in Table 1 are integrated of order one, I(1). Before performing wavelet analysis, we applied Johansen's (1991) Trace test. Oil prices show long-term co-integration with the ASI, according to the bivariate analysis results shown in Table 1. Because the t-statistics are higher than the crucial values, the null hypothesis that there is no cointegration is rejected as shown in Table 3.

To find out how changes in the ASEAN stock indices affected the oil price, we used a causality test using the methodology of Toda and Yamamoto (1995). A vector autoregressive (VAR) (K) model was estimated using Granger's (1969) conventional causality test. According to Granger (1986), the ideal lag length(s) in this situation is K, however it is limited by the stationarity assumption and depends on the lag length in the VAR model. Soytas and Sari (2006) found that the Granger causality test may be made more reliable by using the toda-yamamoto causality technique, which does not suffer from pre-test biases. No matter the system's integration or cointegration characteristics, the Toda-Yamamoto causality technique holds (Le and Chang, 2015). A weighted VAR (K + dmax), where dmax is the maximum cointegration order of the selected variables, is estimated by the Yamamoto causality test.

Table 4 shows that the MWALD statistics are significant, therefore we can rule out the possibility of a "Granger non-causality" relationship between ASEAN stock indexes and oil prices. The results should be taken into consideration by policymakers since they show that changes in ASEAN stock indexes affect oil prices, as the null hypothesis of "Granger non-causality" was rejected. Mishra et al. (2019) found a cointegration relationship between ASEAN stock indices and oil price, which is in line with our findings. The oil price and stock price co-integration in the markets of UK, Italy, and Finland was also discovered by Park and Ratti (2008) in relation to conventional stocks.

Numerous studies have already looked at the relationship between oil prices and stock indices in both developed and developing countries. Gallegati et al. (2011) propose that the wavelet approach is optimal for datasets comprising many variables and intervals. To examine the association between these variables over several time periods, we employed the wavelet method. This approach regards non-stationarity as an inherent attribute of the data, obviating the necessity for supplementary data processing. Using the MODWT and Daubechies' (1992) least asymmetric (LA) wavelet filter, Figures 1 and 2 show the multi-resolution analysis (MRA) of order J = 6 for economic growth, energy consumption, and carbon emissions. The orthogonal components (D1, D2,.. D6) that represent different frequency components of the original series are shown in Figures 1 and 3 along with a smoothed component (S6). The findings demonstrate that both series have high-frequency fluctuations in the short term, whereas they stabilise over extended durations.

Table 1: Summary statistics and correlation matrix

Parameters	OIL	ASI
Mean	1113.152	1395.923
Median	1188.250	1395.730
Max	2008.580	1639.090
Min	511.2800	982.4800
Std. deviation	262.3264	95.93012
Skewness	−0.437339	−0.682195
Kurtosis	2.434726	4.068831
Correlation matrix		
OIL	1	
ASI	0.3465	1

Table 2: Unit root tests

Variables	ADF		PP	
	At level	At 1st diff	At level	At 1st diff
ASI	−3.88***	−15.57***	−3.58***	−31.41***
Oil price	−1.12	−18.92***	−2.09	−65.07***

Where P<0.01=**, P<0.001=***

Table 3: Cointegration results

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.015587	22.22869	18.39771	0.0139
At most 1*	0.004561	5.010776	3.841466	0.0252

***, **, * denote significance at 1 %, 5 %, and 10 %, respectively

Table 4: Toda-Yamamoto test results

Null Hypothesis	MWALD Statistics	Decision
No oil effect on ASI	10.89*	Rejected
No ASI effect on OIL	30.21***	Rejected

***, **, * indicates significance level at 1 %, 5 %, and 10 %, respectively

Figure 1: MODWT decompostion of Oil Prices (OI) on J=6 wavelet levels

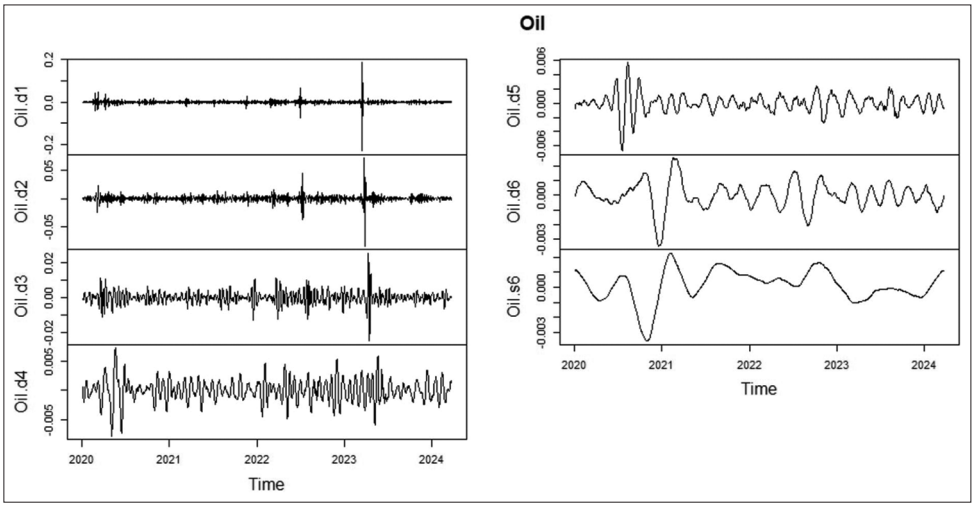


Figure 2: Wavelet covarience between ASEAN conventional indices and oil prices. U" and "L" stand for the upper and lower bounds, respectively, at the 95% confidence interval. The covariance between the oil price and the ASEAN conventional indices is shown by the black dot

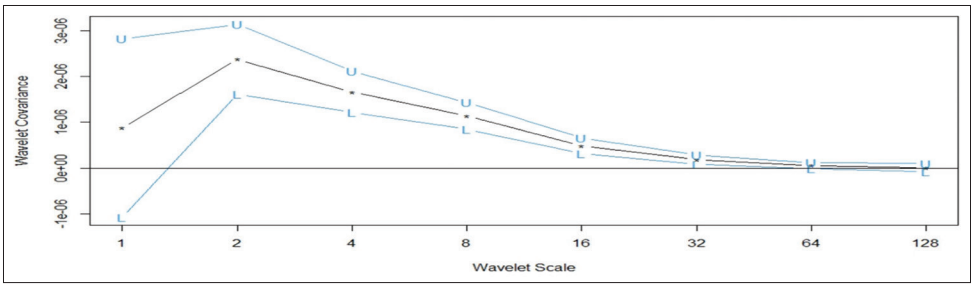
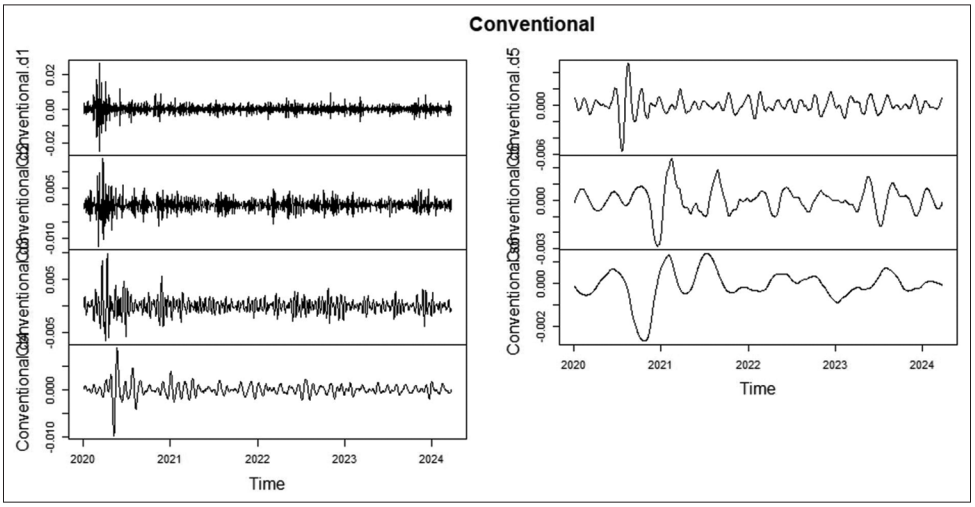


Figure 3: MODWT decompostion of ASEAN Convnetional Stock indices (ASI) on J=6 wavelet levels



Wavelet covariance analysis is employed to investigate the covariance between two variables over a certain time interval. Figure 2 illustrates the wavelet covariance outcomes between ASEAN Conventional Indices and Oil Prices. The results indicate that, in the short, medium, and long term, a positive correlation exists between ASEAN Conventional Indices and Oil Prices; but, in the very long term, no covariance is seen between them. Figure 4 elucidates the wavelet association between ASEAN Conventional Indices and Oil Prices. A robust and favourable association among the variables is shown throughout four timeframes: short, medium, long, and very long term.

To get the MODWT results, we also used continuous wavelet analysis (CWT) on oil prices and ASEAN conventional indices. The continuous wavelet power spectra of all series are shown in Figure 5a and b. Following the proof of cointegration and causality in the time series, which established a relationship between the ASEAN Conventional Indices and Oil Prices, we investigated their

Figure 4: Wavelet Corelation between ASEAN conventional indices and oil prices. The upper and lower bound are respresented with "U" and "L" respecteively at 95% confidence interval. The black dotted respresntes the corelations among oil price and ASEAN coventional Indecies

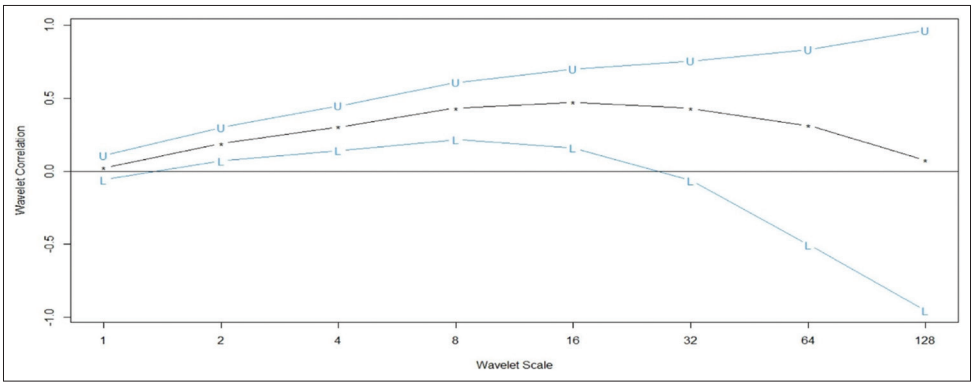
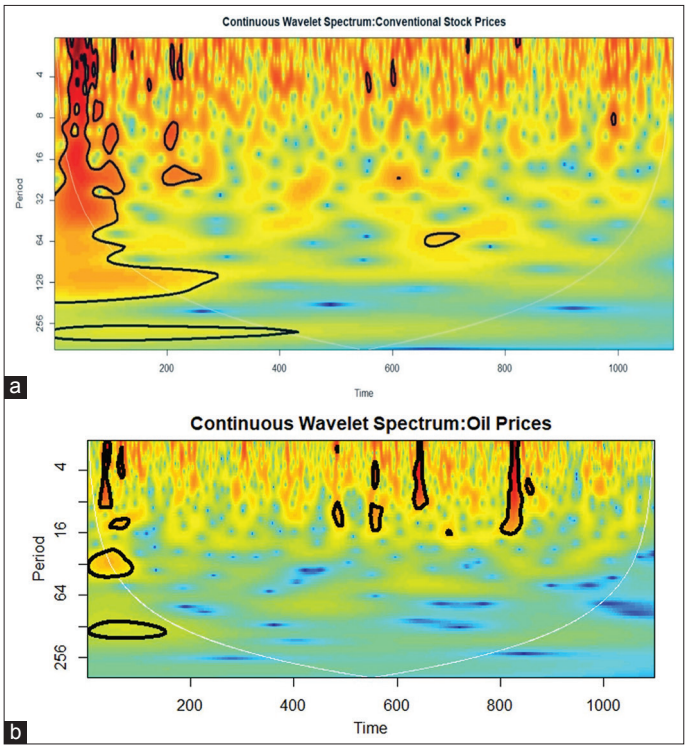


Figure 5: (a and b) Continuous wavelet power spectra of the ASEAN conventional indices and oil prices. The bold black outline indicates the 5% significance level against red noise, with the power spectrum color-coded from blue (indicating low power) to red (indicating high power)



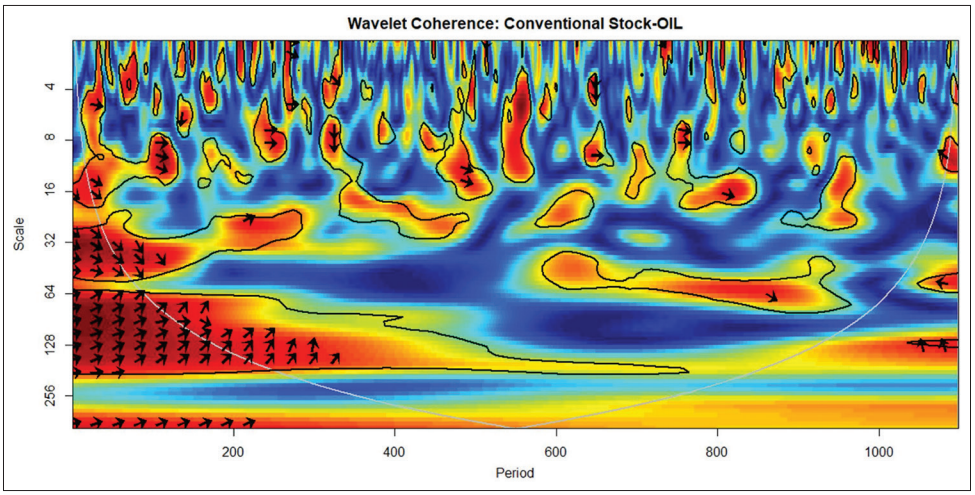
co-movement in the time-frequency domain. In order to achieve this, a power spectrum wavelet was generated for the relevant variables. To conduct this study, the "bivariate" package (for the R environment) developed by Govhier and Grinsted was utilised. The white curve in Figure 5a and b represents a portion of the cone of impact. The discontinuity makes it difficult to comprehend the wavelet power spectrum at an edge below it. Here, the significance values are created using Monte Carlo simulations; the heavy black contours show the significance level of 5%.

According to Sharif et al. (2020), the CWT spectrum shows the series' activities in a three-component curve plot: (i) colour code, (ii) time, and (iii) frequency. The distinct characteristics of the various variable series across time frequency domains are clearly shown in Figure 5a and b. Stock and oil price series exhibit better stability and similar variability in the short and medium term compared to the long and very long run. Results show that short- to medium-term fluctuations in oil prices and ASEAN stock values are common.

The wavelet coherence between the ASEAN conventional stock index and oil prices following the COVID-19 outbreak is shown in Figure 6. In the short to medium term, oil prices lead the market, since most arrows point lower and to the right, suggesting an anticyclical relationship. Because energy costs have an immediate effect on economic activity, especially in oil-dependent sectors, it stands to reason that oil price swings drive changes in the ASEAN stock index during these time periods. The arrows pointing downward and left show that this link changes in the very long and long period. This indicates that, over these longer time periods, ASEAN stock values are more important than oil prices. Over time, oil prices lose some of their lustre and are replaced by more basic economic indicators including company success, economic recovery, and market changes. This change in leadership could be influenced by corporations' adaptability to changes in oil prices and their growing interest in alternate energy sources.

The analysis determines a positive and extremely significant correlation between oil prices and the ASEAN conventional stock index over the long term. The enduring relationship is due to the interdependence of energy demand and economic growth, especially in ASEAN nations where oil is pivotal. As energy demands correspond with economic growth, oil prices and stock market performance typically exhibit a correlated trajectory across time. Nonetheless, no substantial correlation is detected over the extended term, maybe attributable to structural transformations in the global economy, including innovations in renewable energy, a shift away from oil dependency, or other macroeconomic influences that diminish the long-term reliance on oil prices. These findings indicate that investors and governments must to consider various time horizons. In the short to medium term, fluctuations in oil prices substantially affect stock markets, necessitating effective risk management measures. Ultimately, attention should transition to more comprehensive economic indicators, as the stock market becomes increasingly less directly affected by oil prices. This comprehension is essential for formulating educated investment strategies and influencing energy policies in the ASEAN area.

Figure 6: "Wavelet coherence" for oil price/conventional stock index relationships. The scale is shown on the vertical axis, while the period is shown on the horizontal axis. An acronym for "cone of influence" describes the white line. Discontinuity makes it difficult to understand what's happening below the white line. Colours show the level of association. The higher the absolute correlation value, the hotter the colour



5. CONCLUSION AND POLICY IMPLICATIONS

In the past decade, oil prices have emerged as the most volatile variable due to various global events (Mokni, 2020). This study examines and models the oil prices impact on ASEAN stock indexes in the aftermath of the COVID-19 outbreak. WTI Crude Oil prices serve as a benchmark for oil pricing. The Dow Jones Asean Stock Index serves as a proxy for conventional index performance. The temporal scope of this study encompasses the period from January 21, 2020, to April 5, 2024. This research employed an advanced econometric technique known as wavelet analysis, which offers insights in both the temporal and frequency domains. Additionally, the test of Toda-Yamamoto was employed to assess long-term causation.

The empirical study demonstrates that oil prices substantially affect ASEAN stock indices. The effect differs across various frequency levels. This paper seeks to elucidate the repercussions of COVID-19 on ASEAN's financial markets, given its well established adverse impact on the world economy, therefore informing investors, scholars, and policymakers. The research indicates that, subsequent to the COVID-19 pandemic, oil prices have a beneficial impact on ASEAN market indices. This result can be ascribed to the vital significance of oil in the region's economic endeavours. As economies began to recover from the pandemic, energy consumption increased, resulting in elevated oil prices. The relationship between increasing oil prices and stock market performance may indicate investor confidence in the resurgence of the energy sector, subsequently fostering broader economic optimism.

More industrial activity and commerce could be a hint of increasing oil prices, which would be good news for companies whose profits are dependent on energy use. Thus, the interdependence of the energy markets and financial systems in the region is demonstrated by the positive correlation between oil prices and stock indices after COVID-19. Because of the profound effect that oil market volatility may have on economic development and financial stability, market players and policymakers are urged to prioritise energy policies that encourage stable oil supply and prices. Additionally, governments should speed up expenditures in renewable energy industries to lessen dependence on oil. This will promote long-term economic growth and provide as a safety net against sudden spikes in oil prices. In light of the uncertainty surrounding oil prices, policymakers should make sure that the financial markets have the necessary regulatory frameworks to deal with them. As part of this effort, we must promote oil-related financial product transparency and encourage market players to employ hedging instruments.

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