PRICE SYNCHRONIZATION LEVEL IN THE NIGERIAN FINANCIAL MARKETS

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Abstract

Portfolio diversification is the hallmark of investment in the financial markets across the globe including Nigeria. However, the correlation of asset prices across different financial markets affects investment decision, market efficiency and portfolios management. Therefore, this study aimed at evaluating the level of price synchronization in the Nigerian financial markets. This study employed correlational research design. The population of this study is the Nigerian financial markets. Purposive sampling technique was used to select equity market, money market and commodity market as the busiest financial markets in Nigeria in terms of trading activities and trading volume. Annual data used for this study were sourced secondarily from CBN Statistical Bulletin covering the period 1990 to 2022. Pearson Correlation analysis was employed as estimation technique. The result showed that the existence of significant positive correlation between equity market and commodity market with (β = 0.3414; p-value = 0.0455); equity market and money market with (β = 0.4101; p-value = 0.0142); and commodity market and money market with (β = 0.7431; p-value = 0.0000). Based on these findings, the study concluded that prices of financial assets in the Nigerian financial markets are synchronized. Therefore, the study recommended that investors should be cautious when designing portfolios that combine assets from the equity, commodity, and money markets due to limited diversification benefits. Instead, investors should consider incorporating international assets or alternative asset classes that are less correlated with Nigerian markets.

Keywords: Price Synchronization; Financial markets; Portfolio Diversification; Nigeria, Pearson Correlation Analysis

1.0 Introduction

The level of correlation of financial asset prices in different markets affects how assets are valued, how efficiently markets function, and how well portfolios can be diversified. This is because the prices of financial assets and the flow of information are closely linked and affect each other. Synchronization of prices among financial assets have increased over the past decades and become a critical issue for investors, as it reduces the magnitude of portfolio diversification. Thus, efficient financial markets are likely to reflect company's information in asset prices (Kyiu, *et al.,* 2023; Doan, *et al.,* 2020). However, specific information of quoted companies may not be well integrated into the prices of financial assets, thereby hindering information transmission and price discovery in the financial market (Pratiwi, *et al.,* 2021).

Financial market synchronization is a crucial metric that gauges the volume of information embedded within prices of financial assets, serving as a potent indicator of price informativeness which holds immense significance in unraveling financial market dynamics and the ability of financial assets to integrate up-to-the-minute information, consequently resulting in the attainment of optimal pricing (Chen, *et al.,* 2022). In the financial markets, when a substantial amount of firm-specific information is integrated into prices, it results in lower levels of synchronicity. Conversely, a higher amount of market-level information leads to elevated levels of synchronicity (Chen, et al., 2022). As such, Kyiu et al. (2023) discovered across various countries that more advanced financial markets generally demonstrate lower synchronicity in investment

returns compared to less developed financial markets. Hence, the risks associated with taking advantage of price differences between two or more markets is lower compared to less developed markets.

Thus, Kyiu et al. (2023) linked the increased synchronicity observed in less developed countries to factors such as opacity and lack of transparency in information disclosure, which indicate a deficient information environment, leading to the predominance of irrational behaviours in the financial market. Moreover, investors in such markets may engage in blind conformity, adopting a herd mentality without carefully evaluating the market dynamics or the prospects of specific assets, which can exacerbate price movements that are disconnected from the true value of the companies, leading to increased price variability (Kalialakis, *et al.,* 2022; Wu & Rui, 2022).

However, Imran et al. (2020) posited that firms operating within weak information environment may hinder efficient trading due to rise in the risks associated with taking advantage of price differences between two or more markets. Prior studies such as Kyiu et al. (2023), Wu and Rui, (2022), Kalialakis et al. (2022), Imran et al. (2020) use the term synchronization to designate markets that exhibit a high level of positive correlation in the movement between pairs of assets.

The level of synchronization between different financial markets such as money markets, commodity markets, and equity markets is often reflected in the way the financial assets move together, such that the trading activities in one affect the other, leading to a phenomenon where financial markets become synchronized and tend to move in the same direction (Lopez-Garcıa, et al., 2020). However, the presence of high price synchronicity may yield adverse consequences in the financial market resulting in a rapid and widespread downturn across multiple assets, which could possibly lead to market crash. This may occur as a result of the influence of uncontrollable external factors, rather than individual company-specific information. Thus, price synchronization may possibly make the assessment of intrinsic values difficult for investors, weakening the effectiveness of price signals when making investment decisions (Moagăr-Poladian, et al., 2019; Ando, 2019).

Higher synchronization reduces diversification benefits as a consequence of a high positive correlation between two or more financial assets, such that investors would have to hold more assets to achieve portfolio diversification and even resort to adding uncorrelated assets from alternative financial markets such as commodity market and foreign currency market. As a result, diversification becomes restricted, compelling investors to introduce more assets to their portfolios, resulting in increased transaction costs, and reduced investment returns (Altinbas, 2020). Therefore, the more synchronized financial assets are, the greater the likelihood of increased variability in market indices (Sohag, et al., 2022; Pulgar, et al., 2022).

Subsequently, the synchronization of equity market, money market and commodity market create an environment of uncertainty and risk, making it difficult for investors to enjoy the benefits of diversification; and predict market trends with precision. This can also lead to market inefficiencies and increased volatility, which ultimately deter both local and foreign investors (Zhang & Broadstock, 2020; Pincheira & Hardy, 2019). Diversification opportunities are limited in the financial markets of emerging economies including Nigeria due to heightened synchronization in the financial market including equity market, money market and commodity market. For instance, the Nigerian market is heavily dominated by a few sectors, particularly the oil and gas sector, which exposes investors to sector-specific risks as fluctuations in global oil prices directly affect the market, creating a high level of volatility and uncertainty. Additionally, underdevelopment of other sectors and the lack of a wide range of investment instruments further restrict diversification options (Fagbemi, et al., 2021).

Past related studies such as Magner et al. (2023), Kyiu et al. (2023), Beraich et al. (2022), Pulgar et al. (2022), Shi (2022) focused on stock price synchronization and stock market integration between two or more countries. As such, less attention has been devoted to uncovering the synchronization among markets such as commodity market, money market and equity market within the same economy. However, better understanding of price synchronization among these markets within the same economy would enable policymakers to design appropriate financial stability measures tailored towards

specific markets. In addition, investors will be able to manage their portfolio aiming for improved investment returns with low risk.

This motivated the study to bridge this gap and consider the extent of price synchronization within the Nigerian financial markets based on the following research objectives: (i) evaluate the level of synchronization between equity market and commodity market in Nigeria; (ii) determine whether equity market and money market are synchronized; and (iii) evaluate the extent of synchronization between commodity market and money market in Nigeria.

2.0 Literature Review

Financial market synchronization denotes the connection between the fluctuation in prices of financial assets and the average market price fluctuation, or a phenomenon in which prices of financial assets rise and fall in tandem with the market. It is a situation where there is a generalized increase in the correlation between pairs of assets, thereby decreasing the possibilities of sustainable portfolio diversification and increasing the risk of contagion that occurs when assets influence each other within the financial market (Sun *et al.*, 2021). Hence, its significance lies in the quantity of company-specific information integrated into the financial asset, evident in its valuation. (Hao, *et al.*, 2022; Pratiwi, *et al.*, 2021). However, the degree of synchronicity remains inherently unpredictable, as it has the potential to fluctuate over time in response to changing economic and financial conditions (Carnahan & Saiegh, 2021).

The equity market is a platform for the efficient allocation of capital, functioning as an organized exchange where securities are traded. In Nigeria, the stock market serves as a trading platform for quoted companies, playing a crucial role in facilitating public share offerings. The stock market has two primary functions: raising capital for corporations, governments, municipalities, and other entities, and serving as a secondary market for trading existing securities. The Nigerian Exchange Limited includes a systematized stock market and an Over the Counter (OTC) market (Appiah-Otoo & Song, 2020).

Money market is a component of financial market and constitutes market for short term investible fund where short term financial instruments or liquid assets with maturity of within one year are traded (Akinwale & Obagunwa, 2020). The stability of financial market instrument prices holds great importance for firms, banks, and governments, as these outcomes influence spontaneous investment decisions (Uche, *et al.*, 2023; Uduakobong, *et al.*, 2023).

Commodity market refers to a centralized marketplace where raw or primary products, known as commodities, are bought and sold (Ugoh, 2023). Examples include agricultural products, natural resources and industrial metals. Commodity markets' role is crucial in the Nigerian economy as they provide a platform for producers, consumers, and investors to trade these essential goods. Despite its significance, accurately forecasting the dynamics of the commodity market holds great importance for businesses, investors, and policymakers. This is particularly crucial in developing nations like Nigeria, where the commodity market plays a vital role due to the dependence on commodity exportation (Wang & Yuan, 2023).

2.2 Theoretical Review

2.2.1 Information Efficiency Theory

The information efficiency theory was propounded by Samuelson (1965) and Fama (1965) and has been one of the central pillars of finance ever since. Among financial economist, the information efficiency theory was widely accepted as it led to major insights on how financial markets work. Fama argued that financial markets are informationally efficient, meaning that prices reflect all available information at any given time, making it difficult for investors to consistently earn abnormal returns by trading on publicly available information alone. The theory assumes that as the financial markets such as equity market, money market and commodity market develop, financial assets are less likely to move in the same direction at the same time. Also, as firms disclose more heterogeneous information to stakeholders, more specific information are incorporated into firms' stock price, thereby reducing synchronization (Neifar & Ajili, 2019).

However, financial market synchronization has been observed to increase due to inadequate disclosure of firm-specific information. Thus, the timelier the company's financial disclosure policy, the more transparent

the information, the more readable the annual report, the better the information environment for the company to lower the share price synchronization (Xuelian, et al., 2018). Similarly, the more disclosure of sustainability information the company provides, the better investors will be in determining the right asset value. Therefore, the existence of price synchronization implies that either financial markets are inefficient or asset pricing models are inadequately specified. Related studies such as Magner, *et al.* (2023), Wang & Yuan (2023), Pulgar, *et al.* (2022), Shi (2022), Vasilyeva, *et al.* (2022) provided strong support for the relevance of theory of information efficiency for this study.

2.3 Empirical Review

Chen et al. (2020) examined how stock markets in 23 developed and 23 emerging countries were linked during the 2007–2008 global financial crisis and the 2010–2012 European debt crisis. They used error correction model (ECM) to understand how markets reacted in the short term while moving back to stability in the long run. The study found that market connections changed during crises, but each market recovered at a different speed depending on the time period.

Niţoi and Pochea (2019) examined how 24 European Union stock markets are linked and affect each other using dynamic conditional correlation mixed data sampling (DCC-MIDAS). They found that stock markets behave differently depending on how advanced and strong they are. These connections change over time, showing phases like merging, spreading risks, and separating. In some crises, the impact is short, but in others, it lasts longer, showing that investors tend to follow the crowd. Overall, global trends and economic similarities greatly influence how these markets move together.

Moagăr-Poladian, Clichici, and Stanciu (2019) explored how exchange rates and stock markets were connected in four Central and Eastern European countries using dynamic conditional correlation mixed data sampling (DCC-MIDAS). They found that currency markets were weakly linked but became more connected during crises. The 2004 EU enlargement and the European debt crisis played a key role in how stock markets moved together. Lastly, the link between exchange rates and stock markets became stronger during the European debt crisis and, to a lesser extent, during the global financial crisis. This suggested greater risk spread (contagion) and fewer chances for investors to reduce risk through diversification.

Yousfi et al. (2021) found that the US and Chinese stock markets affected each other more during COVID-19 than before. They also noticed that the markets stayed connected in the second wave, even after the US ended its first lockdown. Lastly, the study showed that the US and Chinese markets influenced their relationship in different ways.

Lavin, Valle, and Magner (2021) examined how stock markets in North America, Latin America, Europe, Asia, and Oceania are connected using correlation-based networks, regressions, and VAR models. They found that stock markets around the world usually move together, but this connection becomes weaker during major financial crises. Even when the link is weak, markets still follow similar trends. However, different regions respond in their own way to global market changes, meaning both local and global factors play a role in market movements.

Pratiwi et al. (2021) studied how sustainability reports and earnings quality impact stock price movements in manufacturing companies on the Indonesia Stock Exchange using multiple regression analysis. They found that companies with better sustainability reports had stock prices that moved less in sync with the market. However, institutional investors did not affect this relationship. The study also showed that companies with higher earnings quality had stock prices that moved more in sync with the market.

Yu (2022) researched how media reports influence stock price movements in Chinese companies. The study used regression analysis and found that more media coverage makes stock prices move less together, improving price accuracy. Media reports had a bigger impact on private and small companies but affected government-owned and large companies less.

Sohag et al. (2022) examined how the US, Chinese, and Russian stock markets are linked using time-varying parameter vector autoregression (TVP-VAR) technique. They found that the three markets are connected by 26.15%. The US market had the biggest impact, while the Russian market was the most affected. The study also showed that geopolitical risks influence how these markets move together. When

geopolitical risks are high, market connections weaken, especially between the US and China, and the US and Russia.

Alam et al. (2022) examined how the Russian invasion impacted the relationship between five commodities and the stock markets of G7 and BRIC countries using time-varying parameter vector autoregression (TVP-VAR) technique. They found that all commodity markets were strongly connected. The study also revealed that during the crisis, the stock markets of the US, Canada, China, and Brazil, as well as gold and silver, were the most affected by changes in other commodity markets.

Shi (2022) examined how China's stock market moves in relation to the stock markets of 12 trading partners in the Asia-Pacific region using dynamic conditional correlation mixed data sampling (DCC-MIDAS). The study found that major events like the Shanghai stock market crash, the US-China trade war, and COVID-19 made these markets more connected. It also showed that trade relationships and market similarities play a key role in linking China's stock market with both developed and emerging countries. Additionally, common factors like liquidity problems in China affected market movements during crises.

Gunay and Can (2022) analyzed how stock markets in China and the US responded to COVID-19 and the 2008 global financial crisis (GFC). Using the modified ICSS test, DCC-GARCH, and Diebold-Yilmaz connectedness model, they found that although COVID-19 began in China, the US stock market played the biggest role in spreading financial shocks, just like in the GFC. The study also showed that developed countries were more affected by these shocks than emerging markets, and that COVID-19 caused a stronger financial crisis than the GFC.

Pulgar, Sánchez, and Muñoz (2022) examined how stock movements affect price changes in the Chilean stock market. They found that stocks often move together, but this pattern changes over time. The study showed that when stocks are more aligned, price fluctuations increase in the following month. In simple terms, the more stocks move together, the more unpredictable their prices become in the future.

Kyiu et al. (2023) examined how stock returns in African markets move together using regression analysis. They found that stock returns in these markets are not highly synchronized, likely due to weak transparency. However, during the global financial crisis, stock return synchronicity increased, especially in Ghana and Kenya.

Dua and Tuteja (2023) examined how the 2007–2009 global recession, the 2010–2012 Euro crisis, and the 2020 COVID-19 pandemic affected China and India's economies. Using Markov-switching (MS) analysis method, they found that both countries had slower growth during these crises. This was due to their strong trade and financial ties with developed countries.

Magner et al. (2023) researched whether the currencies of commodity-exporting countries like Australia, Canada, and South Africa can predict how commodity prices move together using network methods coupled with in-sample and out-of-sample econometrics models. They found that when these currencies weaken (as the U.S. dollar gets stronger), commodity markets become more linked, raising market risk. This means that these currencies can influence commodity prices, not just for the goods their countries export.

2.4 Research Gap

To the extent of literature search, only one empirical study on price synchronization was found in Africa and none from Nigeria (Kyiu, *et al.,* 2023). Nevertheless, many related studies were carried out on cross-countries basis mostly developed economies. For instance, Magner, *et al.* (2023) covered Canada, Norway, Chile, South Africa, Iceland, Australia, and New Zealand; Shi (2022) covered China alongside twelve trading partners in the Asia-Pacific region; Vasilyeva, *et al.* (2022) covered the US, Chinese and Russian markets; Lavin, *et al.* (2021) covered world equity markets of North America, Latin America, Europe, Asia, and Oceania; Magner, *et al.* (2020) covered 26 countries of Latin America, North America, Europe, Asia, and Oceania; while Kyiu, *et al.* (2023) covered 5 African countries including Botswana, Ghana, Kenya, Nigeria and South Africa.

In like manners, few studies explored price synchronization on a country-specific basis. For instance, Pulgar, *et al.* (2022) covered the Chilean stock market; while Pratiwi, *et al.* (2021) covered the Indonesia Stock Exchange.

To the best of the researcher’s knowledge, no known study in Nigeria has explored price synchronization in the Nigerian financial market. Thus, given the extensive

literature in the developed economies around the world wherein the roles of price synchronization were documented in the asset pricing framework, it is imperative to extend the work to Africa, particularly Nigeria. As such, this study evaluated price synchronization across equity markets, money market and commodity markets within the Nigerian financial system.

3.0 Methodology

The theory of information efficiency states that investing primarily in the least correlated securities improved the risk-return profile of portfolios. To measure price synchronization, it is common practice to use the correlation coefficient between two financial assets over a given time period (Shi, 2022; Niţoi & Pochea, 2019; Moagăr-Poladian, et al., 2019). Based on this, the Pearson correlation technique was specified for this study. This method helps in quantifying the extent of synchronization between financial markets, and determine how closely these markets move together, providing empirical support for the theoretical assumptions.

In line with the studies of Shi (2022), Niţoi and Pochea (2019), Moagăr-Poladian, et al. (2019), the Pearson correlation equations used for this study as specified as follows:

$$\rho X,Y = \frac{Cov(X,Y)}{\sigma X \sigma Y} \quad 3.1$$

Where; ρ stands for the Pearson correlation coefficient of the individual values (e.g., returns from the equity market and commodity market, or any other pair of markets); Cov(X,Y) represents covariance of the individual values; σX and σY represents standard deviation of the individual values.

The correlation equation is further broken down and specified as follow:

$$\rho EQM,COM = \frac{Cov(EQM,COM)}{\sigma EQM \sigma COM} \quad 3.2$$

Where; ρ stands for the Pearson correlation coefficient between the equity market and commodity market; Cov(EQM,COM) represents covariance between equity market and commodity market; σEQM represents standard deviation of equity market and σCOM represents standard deviation of commodity market.

$$\rho EQM,MON = \frac{Cov(EQM,MON)}{\sigma EQM \sigma MON} \quad 3.3$$

Where; ρ stands for the Pearson correlation coefficient between the equity market and money market; Cov(EQM, MON) represents covariance between equity market and money market; σEQM represents standard deviation of equity market and σMON represents standard deviation of money market.

$$\rho COM,MON = \frac{Cov(COM,MON)}{\sigma COM \sigma MON} \quad 3.4$$

Where; ρ stands for the Pearson correlation coefficient between the commodity market and money market; Cov(COM,MON) represents covariance between commodity market and money market; σCOM represents standard deviation of commodity market and σMON represents standard deviation of money market.

Where; EQM = equity market indices measured by composite index of All-Share index, turnover ratio and number of deals; COM = commodity market indices measured by composite index of crude oil price, export commodity price, import commodity price; and MON = money market indices measured by composite index of treasury bill and money market instruments outstanding

The research design employed in this study is correlational research design, which is suitable when the goal is to determine whether a relationship exists and how strong it is. The population of this study is the Nigerian financial markets while the samples include equity market, money market and commodity market. Annual data covering the period 1990 to 2022 were used for this study. The data were sourced from SEC Statistical Bulletin and CBN Statistical Bulletin.

4.0 Data Presentation and Discussion of Results

4.1 Preliminary Analyses

Table 1: Descriptive Statistics

	EQM	COM	MON
Mean	0.2401	0.1867	0.2120
Std. Dev.	1.0000	1.0000	1.0000
Max	2.7945	2.3109	1.6225
Min	-0.9815	-0.8804	-1.1630

Source: Author's Computations (2024)

Table 1 revealed that, on average, the equity market, commodity market and money market have tendencies towards positive performance even though there were periods of downturns and relatively strong performance, possibly representing periods of growth. The low spread around the mean implies that the data is normally distributed.

4.1.1 Stationarity Test

The art of differencing data is to ensure that trends or other systematic patterns that may exist in the data are eliminated in order to allow for more reliable data estimation. The Augmented Dickey-Fuller (ADF) unit root test was used to determine whether the variables employed are stationary or non-stationary.

Table 2: Stationarity Test

Augmented Dickey-Fuller (ADF) Unit Root Test						
	Level			First Difference		
Variables	**t-stat**	**p-value**	**Status**	**t-stat**	**Status**	**p-value**
EQM	-2.4355	0.356	-	-5.3729	I(1)	0.0007
COM	1.1470	0.435	-	-5.4862	I(1)	0.0009
MON	-4.5214	0.0061	I(0)	-5.3243	I(1)	0.0009

Source: Author's Computations (2024)

The findings in Table 2 showed that money market was stationary at both level I(0) and first difference I(1), while equity market and commodity market were only stationary at first difference I(1). Therefore, the null hypothesis that each of the series is not stationary is rejected in favour of the alternative hypothesis. The fact that some variables are stationary at first difference mandates the study to conduct a cointegration test.

4.1.2 Cointegration Test

The maximum-likelihood test approach created by Johansen (1991) was used to determine the order of integration before attempting to determine whether the variables have a long-term association.

Table 3: Johansen Test for Cointegration

Series: EQM, COM, MON
Lags interval (in first differences): No lags

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Stat	5% Critical Value	p-values
None *	0.2825	16.0167	9.7971	0.0311
At most 1 *	0.1180	11.7232	5.4947	0.0099
At most 2 *	0.0573	4.8300	3.8415	0.0275

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Stat	5% Critical Value	p-values
None *	0.2825	12.2935	7.1316	0.0404
At most 1 *	0.1180	8.8932	3.2646	0.0107
At most 2 *	0.0573	3.8300	1.8415	0.0281

Source: Author's Computations (2024)

The results of the Johansen cointegration test in Table 3 indicated the existence of a long run equilibrium relationship among the selected markets. The trace statistic values surpass the critical values, providing robust evidence of the existence of at least one cointegration relationship among the variables. Based on these findings, the null hypothesis of no cointegration is firmly rejected. Thus, the Nigerian financial markets such as equity market, money market and commodity market move together over time, maintaining a certain equilibrium, despite short-term deviations.

In this study, two long-term relationships exist among equity market, commodity market, and money market in Nigeria. This implies that, even though these markets might not be stable on their own, they are connected in two ways over the long run which might be influenced by underlying factors like interest rates, inflation, or macroeconomic policies. While short-term changes can happen, these two key relationships ensure the markets maintain some degree of synchronization over time.

4.2 Financial Market Synchronization

Table 4: Financial Market Synchronization Result

Variables	(1)	(2)	(3)
	EQM	COM	MON
EQM	1.0000		
	-		
COM	0.3414**	1.0000	
(p-value)	(0.0445)	-	
MON	0.4101***	0.7431***	1.0000
(p-value)	(0.0142)	0.0000	-

Source: Author's Computation (2024)

4.2.1 Discussion of Results

The results of the Pearson correlation were present in Table 4. The result showed that a significant positive correlation exists between equity market and commodity market with (β = 0.3414; p-value = 0.0455). There is a significant positive correlation between equity market and money market with (β = 0.4101; p-value = 0.0142). The result also showed the existence of a significant positive correlation between commodity market and money market with (β = 0.7431; p-value = 0.0000).

These imply that prices of assets in the equity, money and commodity markets significantly move in the same direction over time, indicating that broader market forces influence all asset classes in the same way. Thus, changes in one market are closely associated with corresponding changes in the other market, and vice versa. In other words, when the one market

performs well, the other market tends to rise as well, showing that their movements are synchronized.

In contrast, a downturn in one market could also have adverse effect on the other market. Overall, the performance of one market can partially explain the performance of the other, reflecting a degree of co-movement between them. Overall, the performance of one market can partially explain the performance of the other, reflecting a degree of co-movement among them.

According to the theory of information efficiency, when firm-specific information is inadequately reflected in asset prices, there tends to be greater synchronization between markets. In this case, if market participants are relying on general macroeconomic or market-wide information rather than company-specific data, asset prices in the financial markets may respond similarly to such information. This reflects reduced information efficiency, where broad trends, such as inflation rates, interest rates, or global economic conditions, dominate price movements across different asset classes, leading to synchronized market behaviour.

Therefore, there are no benefits of portfolios diversification in the Nigerian financial markets because asset prices are dependent on each other, moving in the same direction over time. Hence, if investors add financial assets from these three markets in the same portfolio, the portfolio remains undiversified because prices are moving in the same direction.

These findings are consistent with the finding of Kyiu, *et al.,* (2023), Meng, *et al.,* (2023), Lavin, *et al.,* (2021) which found that financial markets in Africa exhibit high levels of stock price synchronization during the global financial crisis, providing support for the view that high price synchronicity can limit sustainable portfolio diversification due to relatively low level of market efficiency.

5.0 Conclusion and Recommendations

The study concluded that prices of financial assets in Nigerian financial markets are positively synchronized. Therefore, the study recommended based of specific objectives that investors should avoid combining assets from equity, money and commodity markets in the same portfolio, as the Nigerian financial markets move in the same direction. To achieve sustainable diversification, investors should explore international markets or alternative asset classes (e.g., bonds, real estate, or foreign currencies) that may have lower correlation with Nigerian financial markets. Additionally, financial market regulators, such as the Nigerian Securities and Exchange Commission (SEC) and Central Bank of Nigeria (CBN), should enforce stronger disclosure policies, especially for firms in sectors like oil and gas, and agriculture that can impact both equity and commodity markets so as to improve firm-specific information disclosure and reduce market-wide trends and synchronization.

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