MARKET RISKS AND PERFORMANCE OF BREWERIES ACROSS WEST AFRICAN COUNTRIES (1996-2022)

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Abstract

The study examined the effect of market risk on the performance of brewery industry in West African region from 1996 to 2022.Market risk, otherwise known as systematic risks are those risks which cannot be eliminated through diversification. Market risk is a function of uncertainties occasioned by the inflation rate, interest rate, and, exchange rate in this context. The study adopted *ex-post facto* research design. The population of the study comprise of brewery firms in West Africa. The study used purposive sampling to select the six countries from West African region. The relevant data for this study were obtained from the firm's annual report and statement of account, the Central Bank statistical bulletin of Nigeria, Ghana, Gambia and Sierra Leone, Senegal and cod voire covering the period of 1996 to 2022. The study applied was auto regressive distributed lag model (ARDL) to test the hypotheses stated at 0.05 level of significance. Several studies have been conducted on market risk and corporate performance of quoted service oriented firms in Africa as a continent however, much of their findings showed that market risks have a significant effect on corporate performance of financial institutions and other service-oriented firms in the world. Based on this, the study took a paradigm shift from these works to study the effects of market risk on corporate financial performance of quoted manufacturing organizations in selected Anglophone and Franco phone countries in West Africa region. The aim of this study was to examine the effect of market risks on the performance of brewery firms across West African Countries. The specific objectives of the study were to: (i) examine the effects of inflation rate on asset turnover of quoted brewery firms, (ii) determine the effects of inflation on earnings per share of selected breweries firms. The study revealed that: (i) Asset turnover have a positive response to Inflation rate. (ii) Earnings per share have a positive response

to Inflation rate of quoted manufacturing firms in West Africa. The study recommend that: (i) Implement cost control measures to reduce waste and improve operational efficiency.(ii) Develop a flexible pricing strategy that can be adjusted in response to inflationary pressures

Key Words: Market risk, Inflation rate, Asset Turn Over, ARDL, Earnings Per Share

1.1 INTRODUCTION

Manufacturing organizations worldwide are currently encountering a shared challenge stemming from the uncertainties surrounding the future and the presence of unforeseen systematic risks. Ekinci (2016) defines market risk as the possibility of facing financial losses in a highly liquid portfolio due to fluctuations in market prices, including risks related to foreign currency, interest rates, equities, and commodity prices. Both Ekinci (2016) and Namasake (2016) emphasized in their studies that market risk exposure tends to exhibit greater volatility in comparison to credit risk exposure. This is mainly attributed to the swift and consistent changes in market conditions, which have the potential to result in substantial financial setbacks and even the collapse of an entity. Fluctuations in asset prices triggered by variations in macroeconomic elements such as exchange rates, interest rates, securities, commodity prices, foreign exchange, and other external influences can lead to financial losses for a firm.

The contemporary corporate entities in Africa are currently encountering persistent obstacles, leading to the demise of enterprises, as workers were unforeseeably reintegrated into the domestic and global labor force due to inadequate handling of uncertainties. The various economic factors at play simultaneously encompass liquidity, inflation, tax, interest, exchange rates, and stock values. Aykut (2016) perceives market risk as financial setbacks or a decline in the liquid assets stemming from fluctuations in market values, which include interest rates, equities, currencies, and commodities. Consistent with his argument, the strategies devised for market risk supervision and control necessitate support in specific domains, namely:

In order to mitigate unforeseen losses and bolster revenue stability, it is imperative to carry out autonomous assessments, recognition, and comprehension of systemic risks, encompassing market risks in business. This aids in promoting alignment of manufacturing firms' organizational framework and managerial processes with global benchmarks, along with setting and overseeing basic criteria for managing market risks.

In order to establish precise and reliable goals, especially within the domain of Management Information Systems (MIS) concerning market risks, with the aim of providing a solid basis for crucial decision-making among middle and senior management. To establish a sustainable framework that can assist organizations in comprehending the connection between business strategy and operations, as well as the significance of risk management and monitoring.

The monitoring and evaluation of market risk are crucial components within management protocols, particularly in response to the growing uncertainties faced by manufacturing firms, particularly within the West African sub-region. The mobilization of resources by each organization is intricately connected to market risk, which in turn impacts their financial performance within the broader economy (Namasake, 2015). The utilization of accounting information provides insights into the financial and operational decisions made by a company, suggesting that through the application of accounting and financial data, the market risk faced by organizations can be effectively identified (Hossein, Saeed and Meysam, 2012). Our research will incorporate various financial performance indicators to assess the impact of market risk on manufacturing firms, focusing on selected countries in West Africa such as Nigeria, Ghana, Gambia, Togo, Cote-divoire, and Senegal. Therefore, the primary objective of this study is to investigate the influence of market risk on the financial performance of manufacturing companies that are publicly traded in Anglophone and Francophone countries situated in the West African sub-region.

1.2 Statement of the Problem

Most businesses encounter numerous risks, particularly during periods of economic downturn, predominantly market risk, which, if not effectively managed, could impede the progress of many organizations. Market risk, alternatively known as systematic risk, represents risks that are inherently diversifiable, as posited by Lars (2012). It is influenced by macroeconomic factors. In Sub-Saharan Africa, particularly in West Africa today, numerous industries have recently shut down, leading to a significant impact on national economic growth, with employees being laid off due to business challenges (Alao and Adebowajo, 2012). Market risk is susceptible to fluctuations caused by various uncertainties, including inflation rates, interest rates, tax rates, exchange rates, political instability, and liquidity levels.

The issue of market risk control has become a focal point for manufacturing organizations in the West African sub-region, given the substantial impact it has had following the recent economic crisis. Thus, the uncertainties linked to market risk dynamics have motivated researchers to develop new strategies to mitigate its effects on manufacturing organizations in the West African sub-region. Several scholars, including Namosake (2016) and Aykut (2016), have engaged in a study concerning market risk and the operational effectiveness of publicly traded service entities in Africa. Although their research did not specifically target production-focused enterprises, their results revealed that market uncertainties have a notable influence on the operational efficiency of financial establishments and other service-driven entities. Expanding upon this premise, our research deviated from their investigation to explore how market risk on the financial performance of publicly traded manufacturing companies in selected Anglophone and Francophone nations located within the West African sub-region is influenced by various factors.

1.3 Objectives of the Study

In order to carry out the current research endeavor, a set of general and specific objectives were articulated as follows:

The primary objective of this research is to examine the influence of market risk on the financial productivity of brewery companies that are publicly listed in the West African sub-region.

Specific objectives are designed to achieve these goals which were to:

I. examine the effects of inflation risk on asset turnover of quoted brewery organizations in the West Africa sub-region.
II. establish the effects of inflation risk on earning per share of selected brewery firms in the West Africa sub- region.

1.5 Research Hypotheses

To accomplish the objectives of this study the following hypotheses were stated in null form.

(i) Inflation rate has no significant effect on asset turnover of quoted breweries in West the Africa sub-region.

(ii) Inflation rate has no significant effect on earnings per share of breweries in the West Africa sub-region.

1.7 Scope of the Study

The study focused on market risk indicators and corporate performance metrics of manufacturing companies in six chosen West African nations spanning from 1996 to 2022,with a specific emphasis on their brewery sectors. The countries chosen include three from Anglophone and Francophone regions of West Africa, notably Nigeria, Ghana, Gambia, Togo, Cote d'Ivoire, and Senegal. The rationale behind this selection is the high GDP of these six countries within the West African sub-region during the study period. The initial year of 1996 was marked by economic challenges experienced by many West African countries due to a recession, leading to market failures attributed to an inability to manage market risks. The study concluded in 2022 due to data constraints. Market risk indicators, such as inflation rate, along with explanatory variables like tax rate and, is essential components in assessing financial markets and were considered in the model. Performance indicators encompassed asset turnover, profit margin, and earnings per share.

REVIEW OF RELATED LITERATURE.

2.1. Conceptual Review

2.1.1. Market Risk

The possibility of incurring losses in a portfolio investment due to fluctuations in market prices encompasses various risks including commodities, interest rates, currency, and equity (Aykut, 2016). Milanova (2010) explains that market risk emanates from anticipated fluctuations in market prices of financial instruments, irrespective of whether they result from factors unique to individual debt instruments or all debt instruments traded in the market. Globally, industries recognize market risk as a significant source of income fluctuation (Jane, Willy, & Kennedy, 2016). Investors may face losses from factors influencing the overall financial market performance. Systematic risk, known as Market risk, persists despite diversification efforts but can be hedged. Market risk stems from recession, political unrest, natural disasters, interest rate fluctuations, and terrorist activities (investopedia, 2017). Market risk, according to Namesake (2015), refers to losses or harm to a firm's financial position due to adverse market price movements.

Aruwa and Musa (2014) argue that market risk is composed of interest rate, exchange rate, and inflation risks, which have an impact on the performance of any entity beyond its sphere of control, determined by overarching economic factors. This phenomenon involves the volatility of asset

prices and exposure to fluctuations financial variables like stock prices, interest rates, exchange rates, and commodity prices are crucial elements to consider. Furthermore, this encompasses the vulnerability to options resulting from fluctuations in asset prices and unexpected shifts in financial variables (Faith & Agnes, 2016). According to Lou (2017), market risk can be defined as the variability in returns triggered by macroeconomic determinants impacting all risk assets, illustrating the concept of the "unknown unknown" in daily life Investors encounter market risk due to securities market trends, economic indicators, recessions, and business cycles. Udeh (2006) defines market risk as a systematic risk arising from economy-wide uncertainties and individual securities' responses to market changes. Diversification does not mitigate this risk. Pandy (2006) emphasizes that even diversified portfolios are exposed to market risk, impacting company performance (Remi, Gary, & Steve, 2013). Market risk has an impact on institutions responsible for mobilizing resources, thereby influencing their financial performance within the economy (Godana, 2012). This risk has implications on the productivity of organizations as indicated by Nimalathasan & Pratheepkanth (2012).

According to Koch and MacDonald (2014), market risk can be categorized into different classes in three primary categories, specifically stock price risk, interest rate risk, and foreign exchange risk. Worzala (2015) asserts that market risk arises as financial institutions agree to assets susceptible to market price fluctuations as security for loans. Similarly,Agnes (2013) contends that organizations consider market risk a crucial element of any investment, highlighting the need to evaluate it both as an objective component and a subjective factor in investment decision-making. The research conducted by Fama and French (2012) demonstrates a linear correlation between market risk and returns. Hussein et al. (2012) suggest that while systematic risk (market risk) has limitations in predicting risks, there are additional variables that can impact returns. The three principal risks that have been recognized consist of stock price risk, interest rate risk, and foreign exchange risk as outlined by Kochi and Mac Donald (2014).

The Inflation Rate Risk

This pertains to the percentage alteration observed in a price index during a specific timeframe (Wikipedia, 2017). In accordance with this delineation, inflation rate is described as the percentage

escalation in prices of a particular dataset compared to the preceding year. (Oleka, Eyisi, and Onyeze, 2014). Onwumere and Suleman (2010) delineated three primary classifications of price indices commonly utilized for evaluating inflationary trends within an economy, namely the consumer price index (CPI), the wholesale price index (WPI), and the implicit price index (GDP deflator). The impact of inflation rate on macroeconomic performance can be adverse as it disrupts exchange mechanisms in a decentralized market economy (Quamrul, Boris, and Peter, 2016). Supporting this claim, Heimann and Leijonhufud (2015) suggest that inflation rate could hinder the market mechanisms that coordinate economic activities. Quamrul et al. (2016) reveal that the trajectory of the inflation rate substantially impacts economic performance, illustrating that subdued inflation rates can alleviate instability in the economy.

Oleka et al. (2014) elaborate on this concept by asserting that the inflation rate is impacted by the money supply, ultimately leading to the assertion that inflation is fundamentally a monetary phenomenon. Emekekwue (2008) argues that a specific level of inflation is considered essential for maintaining economic growth. When inflation occurs, prices may increase to counter rising costs, thus preserving project profitability even in scenarios assuming zero inflation (Pand, 2006). Accountants place importance on the inflation rate as it helps in minimizing the effects of inflation during the assessment of investment projects and thompson, Watson, and Seizer (2009) emphasized the importance of the compilation of financial statements. A study by Edward and Ping (2010) highlighted the correlation between rapid economic expansion tends to be prevalent in countries characterized by high inflation rates, leading to a widely accepted belief in the positive and significant relationship between inflation and economic development. Hager (1977) suggests that a heightened inflation rate can jeopardize savings, thereby negatively impacting the financial stability of organizations and reducing investment prospects. The devaluation of currency due to high inflation rates heightens financial risks, thereby discouraging investments (Oleka et al., 2014). Canutillo, Miguel, and Wright (2010) argue that inflation rates influence the level of risk linked to investments by introducing uncertainties and creating an unfavorable investment environment. Seizer (2011) points out that rapid economic growth has been evident in both high and low inflation rate countries. Eglantine (2012) emphasizes that inflation rates play a pivotal role in shaping the conducive environment necessary for productive investments that drive economic growth and development in any given economy.

2.1.7.1 Asset turnover is a metric that assesses the efficiency of asset utilization in producing returns, measuring the rate at which assets or capital are converted into sales within a designated time period is referred to as asset turnover (lUgwuanyi and Ugbor, 2011). This metric measures the effectiveness at which asset components such as receivables, inventories, and fixed assets are managed: receivables are assessed through the mean duration for collecting payments, inventories are assessed using the inventory turnover metric, and fixed assets are indicated by the sales to net fixed asset ratio (Udeh, 2006).

2.1.7.3 Earning per Share

Earnings per share (EPS) is perceived as the division of a corporation's earnings by the aggregate outstanding shares of its common stock. This derived value serves as an indicator of the profitability of the corporation. It is common for corporations to reveal EPS numbers that have been modified to account for extraordinary items and the potential dilution of shares. The higher a corporation's EPS, the more it is considered to be profitable. Essentially, this indicates the profitability of the investment carried out by shareholders in a specific entity.

2.2 Theoretical Framework

The study employed the Capital Asset Pricing Model (CAPM) theory, initially proposed in 1966.This theory was centered on market risk, asset returns, and market prices. It involves the amalgamation of risk-free assets and risky assets within a specific asset portfolio to effectively manage the risks associated with market prices.

2.2.1 Capital Asset Pricing Model (Mossin, 1966): The fundamental assertion of this theory is that market risk predominantly stems from an asset's responsiveness to market prices, the asset's beta serves as its representation. The Capital Asset Pricing Model (CAPM) implies the systematic integration of a risk-free asset and a market portfolio comprising of risky assets by investors. Investors determine the allocation towards risky assets based on their market worth. Pandy (2006) suggests that investors have the ability to predict returns on their investments by taking into account the corresponding risk level. This model forms a linear correlation between the beta of an asset and its expected return. Furthermore, the notions of risk and return as elucidated by CAPM are intuitively appealing and relatively easy to grasp. Financial managers leverage these concepts in various financial decisions such as securities evaluation, cost of capital determination, and investment risk assessment. Despite its intuitive allure and simplicity, CAPM encounters certain

practical challenges. It relies on unrealistic assumptions, is intricate to validate, and betas tend to fluctuate over time.

2.2.4 Signal Theories

Signaling theory delves into the resolution of issues stemming from information symmetry within social contexts. It posits that alleviating information asymmetry is crucial, achieved when the party with superior information transmits signals to other relevant parties. A signal, whether an observable action or structure, serves to unveil concealed characteristics or quality of the signaler. The act of signaling typically hinges on the belief that it should benefit the signaler, such as by highlighting superior product quality compared to competitors. The traditional signaling model unfolds in a market scenario involving interactions between sellers and buyers. Initially, sellers usually hold an informational edge over buyers concerning their offerings. While buyers may lack specific details about goods, they might hold certain general beliefs when making purchases, like expecting a certain percentage of faulty products to be priced differently from normal ones. Consequently, buyers assess products at an average value based on these general perceptions. Consequently, a seller with above-average quality faces a missed opportunity as their products could fetch a higher price if buyers were aware of their superiority, whereas a seller with below-average quality stands to gain from the situation. Thus, sellers of high-quality items are incentivized to signal their products' excellence to buyers to justify premium pricing. For such signaling to be effective, it must be challenging for low-quality sellers to replicate.

The process of signaling is a continuous iterative procedure that persists until the benefits received from higher prices surpass the costs associated with signaling. When the classic model is situated within a broad business context, it can be understood in the following manner. Initially, the management of a company typically possesses more knowledge than the investors concerning the firm's operations (such as project feasibility, expected profits, or risk exposure). As a result of this information asymmetry, investors lack insight into the firm's quality, making it challenging to differentiate between various firms. Consequently, a firm of above-average quality faces an opportunity cost due to its superior quality being unrecognized by investors, while a lower-quality firm benefits from an opportunity gain. In this scenario, the high-quality firm is motivated to emphasize its superior quality in order to attract more investors, as suggested by signaling theory,

which proposes that organizations of high quality should signal their strengths to the market. On one hand, signaling would prompt investors and stakeholders to reevaluate the company's worth, leading to decisions that are more favorable towards the company. On the other hand, garnering support from diverse stakeholders can help a company secure more investments, thereby lowering the expenses associated with capital acquisition.

2.3 Empirical Review

Darko and Kruger (2017) revealed a noteworthy and favorable association between the fluctuations in crude oil prices and the accounting performance indicators (such as ROA, ROE, and EPS) of the entities under scrutiny. The impetus for their investigation stemmed from the recognition that previous scholarly works pertaining to the variability in crude oil prices had a narrow geographical focus on individual nations, prompting them to explore the potential impact on profitability when major oil companies globally, spanning various countries, face changes in crude oil prices The examination comprised the leading 20 oil and gas companies from 2012 to 2016, as delineated in the annual reports of Forbes for 2016. However, panel data was only available from eight organizations that reported their financials in IFRS formats. The data was examined through the Ordinary Least Squares (OLS) panel regression model, as well as random effect and fixed effect estimation, in order to elucidate the causal relationships among the variables being studied.

Trimurti, Muturi, and Waweru (2016) conducted a comprehensive analysis of the risks and performance of banking institutions in Kenya. Their research is firmly grounded in the realm of finance, viewing the banking sector as the conduit that connects their nation's economy to the international arena. Given the foundational role of the Oil and Gas industry in Nigeria's economy, effectively aligning the country's economic activities with this sector - demonstrating a symbiotic relationship, it is imperative to investigate the impact of market risk on the performance of the Oil and Gas sector in Nigeria.

Waseem and Abdul (2014) evaluated the effects of fluctuations in interest rates on the profitability of four prominent commercial banks in Pakistan. The study utilized the Pearson correlation method for data analysis, uncovering a robust and advantageous link between interest rates and the effectiveness of commercial banks.

Lartey-Antwi and Boadi (2013) explored the association between liquidity rates and the profitability of banks that are listed on the Ghana Stock Exchange. Their study employed an ex-post facto research design. The findings illustrated a decline in both liquidity rates and profitability among the listed banks during the period from 2005 to 2010. Moreover, a feeble positive relationship between liquidity rates and bank profitability in Ghana was identified.

Gusti (2014) conducted a study on the influence of capital and liquidity risks on the profitability of traditional rural banks in Indonesia, utilizing an ex-post facto research design. The results revealed a notable impact of both capital and liquidity risks on profitability (ROA).

Enekwe, Eziedo, and Agu (2017) delved into the impact of liquidity risk on the financial performance of selected quoted commercial banks in Nigeria. The model estimation involved the application of the ordinary least squares technique. The examination encompassed descriptive statistics, Spearman rank order correlation, and regression analysis, unveiling the considerable influence of liquidity risk on the financial performance of quoted commercial banks in Nigeria.

Trenca, Maria, and Mihut (2015) carried out a study to evaluate market risk during the contemporary financial crises, using an ex-post facto research design. The methodology incorporated the use of Value at Risk (VaR) and stress tests for measuring market risk, along with GARCH model and EVT as econometric tools. The findings indicate a substantial influence of market risk on the prevailing financial crises.

Aykut (2016) investigated the relationship between credit, market risk, and the operational performance of banks in Turkey through the utilization of an Ex-post Facto framework. Ordinary Least Squares was employed for hypothesis testing. The results indicate a significant and positive impact of credit and market risks on the volatility of conditional bank returns.

Jamal, Mahammed, and Ali (2014) conducted a study on the influence of financial risks on company performance, using an Ex-post Facto research design. Standard deviation was utilized for hypothesis assessment. The study's findings emphasize the considerable effect of financial risks

on firm performance, with credit risk, liquidity risk, market risk, and exchange risk playing crucial roles.

Nimalathasan and Pratheepkanth (2012) examined the effects of systematic risk management on the profitability of selected financial institutions in Sri Lanka from 2004 to 2011. The assessment of systematic risk management involved the use of financial leverage (DFL) and operating level (DOL) as independent variables, while profitability metrics such as Net Profit, Return on Capital Employed (ROCE), and Return on Equity (ROE) were considered as dependent variables. The research relied on secondary data and employed Ordinary Least Squares (OLS) to examine formulated hypotheses. The results unveiled a positive association between systematic risk management and profitability, accentuating the significance of DFL and DOL in enhancing systematic risk management within the chosen financial institutions, consequently boosting profitability.

Ekinci (2016) scrutinized the effects of credit and market risk on bank performance in Turkey over a fourteen-year period using weekly data. To gain a deeper insight into the impacts of interest rate, foreign exchange rate, and credit risk on bank performance, the researchers employed time series data and the generalized autoregressive conditional heteroscedastic approach in their analysis. The findings indicated that credit risk and foreign exchange rate significantly and positively influenced bank performance, while interest rate had a positive but insignificant effect on the banking sector in Turkey. Additionally, the study identified that credit risk, foreign exchange rate, and interest rate risks had a positive and significant impact on the conditional bank stock return volatility.

Jane, Willy, and Kennedy (2016) carried out a study on the influence of market risk on the financial performance of commercial banks in Kenya. The analysis involved exploring pair-wise correlations among the variables. An F-test was conducted to determine the significance of the regression, with the coefficients of the explanatory variables used to ascertain the direction of impact, and R squared values employed to establish the extent to which independent variables explain the variance in the dependent variable. The results showed a negative and significant correlation between financial leverage, interest rate, and foreign exchange exposure with bank profitability.

Agubata and Odubuasi (2018) conducted an investigation into the impact of exchange rate fluctuations on the financial performance of manufacturing companies in Nigeria. The study focused on eight enterprises within the food, beverage, and tobacco sector of the country. Utilizing an ex post facto research design, data spanning from 2005 to 2014 was gathered from the Central Bank of Nigeria Statistical Bulletin and the financial statements of the companies. By employing the Ordinary Least Square (OLS) multiple regression estimator, the study revealed a positive association between exchange rate and inflation rate with the financial performance of the industry. In contrast, interest rate was found to have a negative effect specifically on the food, beverage, and tobacco sector.

Consequently, the study proposes that financial institutions should contemplate the utilization of financial tools such as financial derivatives and actively participating in derivative markets to alleviate market risks. Furthermore, monitoring financial leverage is recommended as a strategy to reduce financial risk.

Harley (2018) carried out an empirical investigation into the impacts of fluctuations in exchange rates on the performance of specific companies within the Nigeria stock exchange market. Utilizing the Ordinary Least Square (OLS) regression technique, the study analyzed a dataset spanning from 2012 to 2016. The findings revealed a significant positive influence of exchange rate fluctuations on the companies' return on investment.

Ihsan, Rashid, and Naz (2018) conducted an assessment of the relationship between exposures to changes in exchange rates and the valuation of companies, encompassing both local and international firms listed on the Pakistan Stock Exchange (PSE). The study involved data from 232 non-financial companies over a fifteen-year period (2000 to 2014) was gathered and examined utilizing the generalized least square estimator to account for heteroskedasticity. The outcomes exposed a substantial influence of variations in exchange rates on company value, with international companies displaying a higher exposure to exchange rate changes compared to local companies.

Risman, Salim, Sumiati, and Indrawati (2017) conducted an examination of the influence of commodity prices, exchange rates, and investments on the valuation of mining and agriculture companies listed on the Indonesian Stock Exchange. The research encompassed a sample of 25 companies over a span of five years (2010 to 2014), leading to a total of 125 observations. Path Analysis and regression models were employed to analyze the direct and indirect effects on firms' value mediated by business risk.

2.4 Gap in Literature

Numerous research endeavors, such as those conducted by Aykut (2016), Namaake (2016), Jane et al (2016), Leyia (2015), and Hossein et al (2012), have delved into the analysis of market risk and the subsequent impact on the operational efficacy of publicly traded banks and diverse financial establishments on a global scale. Furthermore, the majority of the reviewed literature focused on examining a single country in each study, for example, Farah (2013), Kamou et al (2015), Ezeugwu (2014), Idowu et al (2014), Awoke (2014), and Nwangi (2014).

The methodology employed was primarily descriptive, utilizing OLS technique, fixed or random effect, and modified OLS. A considerable portion of their results indicate that market risk exerts a significant impact on the corporate performance of banks and other service-oriented entities. Nevertheless, the exploration of a lasting relationship between market risk and firm performance remains an ongoing endeavor. Hence, this research scrutinized twelve (12) selected manufacturing firms from six West African countries, specifically Nigeria, Ghana, Gambia, Togo, Cote d'Ivoire, and Senegal, along with their associated market risks spanning from 1996 to 2022 (27 years). This investigation employed an ex-post facto approach, analytical design, and the ARDL model as its methodological framework.

METHODOLOGY

3.1 Research Design:

This investigation employed the ex-post facto and analytical research design, characterized by the researcher's limited manipulation of variables, a fundamental aspect of ex-post facto research design that is well-suited for the inquiry. The research design serves as a framework guiding the researcher in the examination and analysis (Onwumere, 2009). Kerlinger (1970) delineates the ex-post facto research design, also known as causal comparative research, as particularly beneficial

in establishing causal connections between dependent and independent variables to determine causality (Nwogu, 2006). The aim of this study is to assess the impact of market risks on the financial performance of listed manufacturing firms utilizing twelve Brewery organizations in six West African sub-regions to understand their effects and propose enhancements. Ultimately, this effort aims to enhance the global competitiveness and importance of the brewery industry.3.2 Population Size

The population under study comprises West African nations, totaling sixteen countries, with three Anglophone and three Francophone countries selected for analysis. This choice was made to explore the impact of market risks on the financial performance of quoted manufacturing organizations in the West African sub-region.

3.3 Sample Size

In the West African sub-region, there are fifteen countries classified as Anglophone and Francophone. Based on their robust GDP performance from 1996 to 2022, three nations were selected from each category. Balsely and Clover (1988) highlight that four countries,representing 10 percent of the forty-four Sub-Saharan countries, were chosen to represent the broader context of Sub-Saharan African nations. These chosen countries from the West African sub-region include Nigeria, Ghana, Gambia, Togo, Cote d'Ivoire, and Senegal, within a total population of fifteen countries.

The investigator will examine a pair of the cited organizations within the brewery sector in each of the specified nations. The brewery industry is recognized for its prominent position in the Sub-Saharan African market, attributed to its impact on economic development. As a result, the subsequent breweries were chosen based on their GDP performance as top performers utilizing profitability index and multinational connections:

Nigeria:

- (i) Guinness Nig. Plc
- (ii) Nigeria Breweries Plc

Ghana:

- (i) Guinness Ghana Breweries Ltd
- (ii) Accra Breweries Limited

Gambia:

(i) Banjul Breweries LTD
(ii) Gambian Foreign Extra Stout

Togo:

(i) Brasserie BB Lome
(ii) Awooyo Speciale

Cote de ivoire:

- (i) Brassivoire
- (ii) Les Brasseries Ivoriennes

Senegal :

-(i) Hill Farmstead Brewery

-(ii) SOBOA ----Societe des Brasseries Louest African Dakar

3.4 Sources and Method of Data Collection

The data employed in this study was procured from secondary resources. More precisely, the data relevant to this research was gathered from the annual publications of specific companies, their respective financial statements, statistical bulletins from the Central Banks of their countries spanning from 1996 to 2022, and the World Development Indicators. The dataset employed in this study consisted of annual data ranging from the years 1996 to 2022. This dataset was customized to suit the requirements of the empirical analysis, incorporating information on economic factors like exchange rates, inflation rates, and interest rates, which are considered exogenous variables, among others that contribute to systemic risk.

3.5 Model Specification

Koutsyannis (2001) elaborated on the notion that model specification involves formulating a maintained hypothesis, which includes delineating the model to empirically reveal the economic phenomenon.

The research carried out by Agura & Oluoch (2017) leveraged their research results to assess the impact of financial risk on the market performance of manufacturing firms in Kenya. The analysis encompassed default risk, interest rate risk, foreign exchange risk, and liquidity risk as explanatory factors, with the share price serving as the dependent variable. The findings suggested that all variables, except for interest rate, had a significant adverse effect on the market performance of manufacturing firms in Kenya.

Agura & Oluoch (2017) employed a modified Ordinary Least Squares (OLS) approach in their study to ascertain the relationship between the independent and dependent variables. However, the model utilized in this investigation is precisely defined, and the corresponding equation is initially articulated as: BIFPI = F(SMR). Where BIFPI stands for Brewery Industry Financial Performance indicator, acting as the dependent variable and is represented using quoted brewery firms in the West African sub-region.

SMR denotes Selected market risk, elucidating the explanatory variables proxied through interest rate (IR), inflation rate (IR), tax rate (TR), exchange rate (ER), and liquidity risk (LR). Drawing from these specified variables, the study will employ the Auto Regressive Distributed Lag (ARDL) model to scrutinize hypotheses and establish empirical conclusions. Panel Models for the Study

Our modified models can be represented using ARDL model .

ATO =F(inflation rate, tax rate, market) / $ATO_{t-1} = \alpha_I + INF\text{-}R_{t-1} + TAX\text{-}R_{t-I} + Mk_{t-I} + \mu_{t-I..}$.model (1)

EPS =F (inflation rate, tax rate, market)/ EPS $= \alpha_I + INF\text{-}R_{t-1} + TAX\text{-}R_{t-I} + Mk_{t-I} + \mu_{t-I}$ model (2)

Note that equation one to nine are associated with tax rate as a control variable, moderating the equations as stated.

ATO = Asset Turn Over,Tax-R = Tax Rate ,Inf-R = Inflation Rate ,α_{ι}=β0 = Constant (intercept)

Pop = population = market ,μ = Error term

We symbolized these variables using the following notations, written as :

α_i = For each individual (n individual-specific intercepts), the parameter (i=1…n) represents the intercept value that is not known.

y_{it} = dependent variable.

X_{it} = independent variable,

β = is the coefficient for that, and

ε_{it} = the error term.

3.6 Description of Variable

The above equation is modified to suit the hypotheses formulated. This model will be employed for the purpose of examining the five hypotheses developed in relation to market risk variables and financial performance indicators. The symbols relating to inflation risk, other controlling variables with asset turnover, profit margin and return on assets are shown below:

To make above equation estimable based on ARDL model.

ATO = Asset Turn Over ,EPS = Earnings Per Share ,Tax-R = Tax Rate ,Inf-R = Inflation Rate

α_{ι}=β0 = Constant (intercept) ,Pop = population ,μ = Error term

Asset Turn Over----- The evaluation of asset turnover measures the effectiveness of asset utilization in producing profits, demonstrating how frequently assets or capital are circulated (supported by sales) within a specified timeframe (lUgwuanyi and Ugbor, 2011). This evaluation is conducted to analyze the efficiency of managing asset components, such as receivables as indicated by the average collection period, inventories as represented by the inventory turnover ratio, and fixed assets as depicted by the production or the sales to net fixed asset ratio (Udeh, 2006).

Earnings Per share --- Earnings per share represents the earnings generated by a company's operations within a specific period, forming a portion of the total distributable profit to the firm's equity shareholders.

TEST FOR UNIT ROOT

Statement of Hypothesis

H_0: Series has a unit root

H_1: Series has no unit root

Decision: Reject the null hypothesis if the probability value of Levin, Liu and Chu is less than 5% level of significance, otherwise accept the null.

This is the **Unit root Summary Table**

Table 4.3 the **Unit root Summary**

VARIABLES	ADF STAT	5% CRITICAL V	PROB. VALUE	ORD. OF DIFF	DECISION
ATO	-5.931711	-2.870561	0.0000	1(0)	Reject null
EPS	-3.870561	-2.870473	0.0150	1(0)	Reject null
INFLAT RATE	-5.997600	-3.423886	0.0000	1(0)	Reject null
MARKET	-18.00647	-3.423842	0.0000	1(1)	Reject null
TAX-RATE	-14.71328	-3.430104	0.0000	1(1)	Reject null

Source: Researchers computation

Table 4.3 displayed the outcome of the stationary series as tested. Our observations indicated that all the variables are stationary at difference order zero 1(0) except the exchange rate risk 1(1),market1(1) and tax rate1(1), since the ADF values in absolute terms are more negative than the critical values at 5% level of significance. The probability value is less than 5% level of significance, therefore all the series are said to be stationary at difference order one and order zero respectively.

There is need to carry out co-integration test so as to know if the long run relationship exist among the variables using Eagle granger bounds co-integration test since the stationary level was at 1(0) and 1(1).

Test for Co-integration
ATO = f (Inflation rate risk, Market, Tax rate)

Statement of Hypothesis

H_0 : Series is Co-integrated

H_1: Series is not Co-integration

Decision: Reject the null hypothesis if the value of F-statistics is greater than i (1) bounds at 5% critical value, otherwise accept the null hypothesis.

Table 4.5 Co-integration Table

F-Bounds Test			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	10.08168	10%	2.37	3.2
k	3.8	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample:	
Actual Sample Size	296		n=80	
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

Source: Researchers computation

Table 4.5 disclosed the value of F-stat is 10.08168, while the value of i (1) bounds at 5% level of significance is 3.67 The outcome of the test implied that there is evidence of lung run relationship among the variables .This implied that any deviation in the short run, will be corrected in the long run .The speed at which this correction is effected need to be known through the error correction model (ECM).

Error Correction Model

Table 4.6 Error Correction Model Table

ARDL Error Correction Regression
Dependent Variable: D(ATO)
Selected Model: ARDL(2, 2, 2, 0)
Case 2: Restricted Constant and No Trend
Date: 06/01/24 Time: 13:38
Sample: 1 324
Included observations: 296

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.327837	0.045855	-7.149366	0.0000

Table 4.6 explain the speed at which the variables can run to equilibrium in the long run, if there is evidence of deviation in the short run, since co-integration has been established in table

4.6.The coefficient value of (-0.327837) and probability value of T-stat (0.0000) show that any deviation that occurs in the short run can be adjusted for at 33% speed, there by bringing the deviation to normal. This is significant at (0.0000) as indicated in the Table 4.6 since the probability value is less than 5% level of significance.

Test for Parameter Stability

Parameter Stability Graph

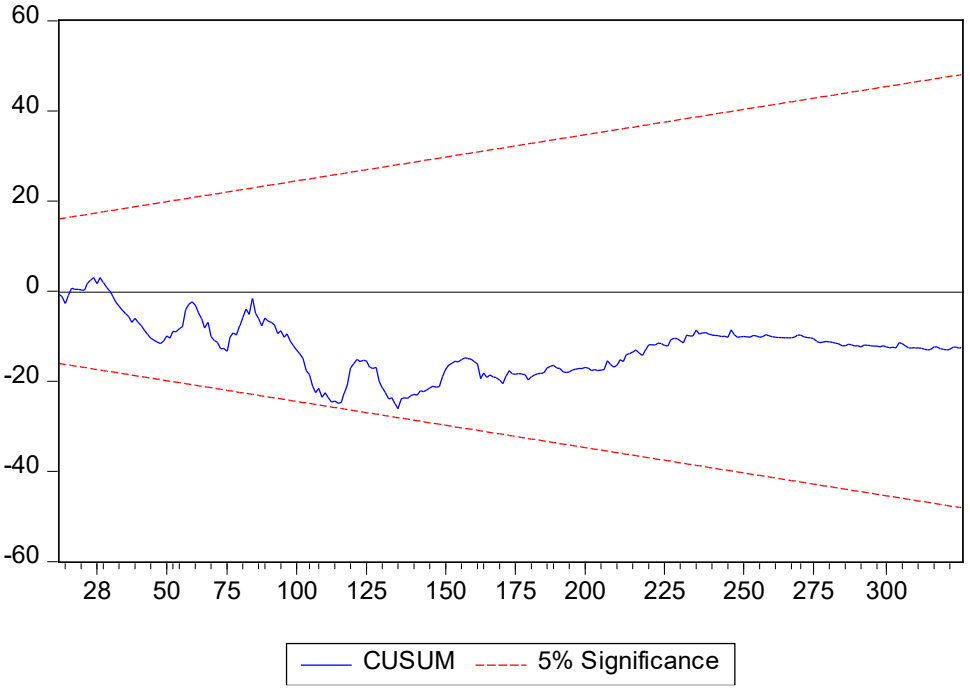

Figure 1: Parameter stability graph

Figure 1 displayed the graphical movement of all the parameters jointly tested using cusum test. The blue line which represents CUSUM failed to cross the two red lines (5% significance) which means that estimated parameters are stable over the long period as there is no evidence of deviation over the period under study. This implied that from the point of origin or the base year of our study, to the end, we noticed that move in-between the 5% red lines is stable.

Determination of Lag length

Decision Criteria; Select the least value among LR,FPE, AIC, SC and HQ

Table 4.7 : Lag Length Table

VAR Lag Order Selection Criteria
Endogenous variables: ATO INFL LNMARKET SERIES01
Exogenous variables: C
Date: 06/01/24 Time: 13:51
Sample: 1 324
Included observations: 277

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3201.818	NA	132613.3	23.14670	23.19903	23.16770
1	-2139.115	2087.042	69.25420	15.58928	15.85094*	15.69426
2	-2108.443	59.34998	62.29791	15.48334	15.95434	15.67232*
3	-2087.955	39.05408*	60.32241*	15.45094*	16.13126	15.72391

Table 4.7, displayed several values associated with each criteria; however, selection is based on the least value especially among those values marked asterisk. AIC Colum at lag 3, with a corresponding value of 15.45094* is taken as the lowest value in the table, therefore lag 3 is selected as the lag length for model one.

Statement of null hypothesis.

$H_{0:}$ Inflation rate risk has no significant effect on asset turnover of quoted breweries in West the Africa sub-region.

Decision Criteria: Accept the null hypothesis if the coefficient of the explanatory variable(inflation rate risk) is not positively signed, otherwise reject the null hypothesis.

ARDL model

$ATO_{t-1} = \alpha_I + INF\text{-}R_{t-1} + TAX\text{-}R_{t-I} + Mk_{t-I} + \mu_{t-I}$..model (1)

Table 4.8

VARIABLE	COEFFICIENTS	t-statistic	Probability	Dur- Wat	R-Squared	P(F-statistic)
ATO						
INFLATION	0.020749	3.421556	0.0007	2.02	0.55	0.0000
Tax Rate	-0.00306	0.486282	0.6271			
LNMarket	0.019737	0.163621	0.8701			

Source: Researchers computation

Table 4.8, showed the outcome of the ARDL model test where the coefficients of the explanatory variables are associated with non- negative values except tax rate rate (-0.00306). This implied that there is evidence of positive impact of these variables mentioned (inflation rate risk) and (lnmarket) on the dependent variable. The corresponding probability values of all the explanatory variables are not less than 5% level of significance in absolute terms as indicated in the same table 4.8.

There is evidence of 55% level of explanation on the impact of the explanatory variable on the explained variable, leaving a balance of 45% unexplained as a result of variables not accounted for or not included in the model .There is no evidence of serial autocorrelation among the series since the DW is valued at 2.02. The probability value of F-statistic (0.0000) indicate that the overall regression is statistically significant since the value is less than 5% level of significance.

Decision: The coefficient of inflation rate risk is positively signed therefore, Inflation rate risk have a positive effect on asset turnover of quoted breweries in West the Africa sub-region. The observation implied that null hypothesis is not accepted.

There is need to carry out co-integration test so as to know if the long run relationship exist among the variables using Eagle granger bounds co-integration test since the stationary level was at 1(0) and 1(1).

Test for Co-integration

EPS = f (Inflation rate risk, Market, Tax rate)

Statement of Hypothesis

H_0 : Series is Co-integrated

H_1: Series is not Co-integration

Decision: Reject the null hypothesis if the value of F-statistics is greater than i (1) bounds at 5% critical value, otherwise accept the null hypothesis.

Table 4.10 Co-integration Table

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	3.770591	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample: n=80	
Actual Sample Size	295			
		10%	2.474	3.312
		5%	2.92	3.838
		1%	3.908	5.044

Source: Researchers computation

Table 4.10 disclosed the value of F-stat is 3.770591, while the value of i (1) bounds at 5% level of significance is 3.67 The outcome of the test implied that there is evidence of lung run relationship among the variables .This implied that any deviation in the short run, will be corrected in the long run .The speed at which this correction is effected need to be known through the error correction model (ECM).

Error Correction Model

Table 4.11 Error Correction Model Table

ARDL Error Correction Regression
Dependent Variable: D(EPS)
Selected Model: ARDL(2, 1, 1, 0)
Case 2: Restricted Constant and No Trend
Date: 06/02/24 Time: 10:56
Sample: 1 324
Included observations: 295

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.117165	0.028401	-4.125438	0.0000

Table 4.11 explain the speed at which the variables can run to equilibrium in the long run, if there is evidence of deviation in the short run, since co-integration has been established in table 4.11 .The coefficient value of (-0.117165) and probability value of T-stat (0.0000) show that any

deviation that occurs in the short run can be adjusted for at 12% speed, there by bringing the deviation to normal. This is significant at (0.0000) as indicated in the Table 4.11 since the probability value is less than 5% level of significance.

Test for Parameter Stability

Figure 2. Parameter Stability Graph

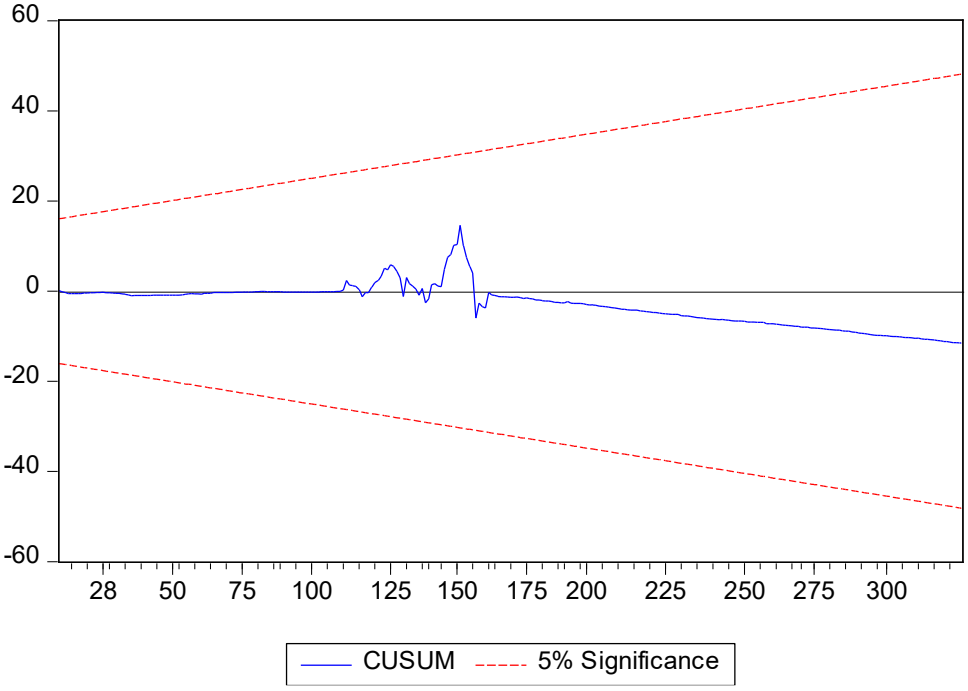

Figure 2: Parameter stability graph

Figure 2 displayed the graphical movement of all the parameters jointly tested using cusum test. The blue line which represents CUSUM failed to cross the two red lines (5% significance) which means that estimated parameters are stable over the long period as there is no evidence of deviation over the period under study. This implied that from the point of origin or the base year of our study, to the end, we noticed that move in-between the 5% red lines is stable.

Determination of Lag length

Decision Criteria; Select the least value among LR,FPE, AIC, SC and HQ

Table 4.12: Lag Length Table

VAR Lag Order Selection Criteria
Endogenous variables: EPS INFL MARKET SERIES01
Exogenous variables: C
Date: 06/02/24 Time: 11:04
Sample: 1 324
Included observations: 273

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-9216.507	NA	2.55e+24	67.54950	67.60238	67.57073
1	-8194.158	2007.249	1.60e+21	60.17698	60.44141*	60.28313*
2	-8183.543	20.53001	1.67e+21	60.21643	60.69240	60.40750
3	-8161.354	42.26463*	1.59e+21*	60.17109*	60.85861	60.44707

Table 4.12, displayed several values associated with each criteria; however, selection is based on the least value especially among those values marked asterisk. AIC Colum at lag 3, with a corresponding value of 60.17109* is taken as the lowest value in the table, therefore lag 3 is selected as the lag length for model two.

Test of Hypothesis Two

Statement of null hypothesis.

$H_{0:}$ Inflation rate risk has no significant effect on earnings per share (EPS) of quoted breweries in West the Africa sub-region.

Decision Criteria: Accept the null hypothesis if the coefficient of the explanatory variable (inflation rate risk) is not positively signed, otherwise reject the null hypothesis.

ARDL model

$EPS_{t-1} = \alpha_I + INF\text{-}R_{t-1} + TAX\text{-}R_{t-I} + Mk_{t-I} + \mu_{t-I}$..model (2)

Table 4.13

VARIABLE	COEFFICIENTS	t-statistic	Probability	Dur- Wat	R-Squared	P(F-statistic)
EPS						
INFLATION	1.265677	1.988281	0.0477	2.02	0.89	0.0000
Tax Rate	-0.005742	-0.089231	0.9290			
LNMarket	1.22E-06	2.608526				

Source: Researchers computation

Table 4.13, showed the outcome of the ARDL model test where the coefficients of the explanatory variables are associated with non- negative values except tax rate (-0.005742). This implied that

there is evidence of positive impact of these variables mentioned (inflation rate risk) and (lnmarket) on the dependent variable. The corresponding probability values of all the explanatory variables are not less than 5% level of significance in absolute terms as indicated in the same table 4.13.

There is evidence of 89% level of explanation on the impact of the explanatory variable on the explained variable, leaving a balance of 11% unexplained as a result of variables not accounted for or not included in the model .There is no evidence of serial autocorrelation among the series since the DW is valued at 2.02. The probability value of F-statistic (0.0000) indicate that the overall regression is statistically significant since the value is less than 5% level of significance.

Decision: The coefficient of inflation rate risk is positively signed therefore, Inflation rate risk have a positive effect on earnings per share of quoted breweries in West the Africa sub-region. The observation implied that null hypothesis is not accepted.

Discussion of the Results

Objective One examine the effects of inflation risk on asset turnover of quoted brewery organizations in the West Africa sub-region. Rami, Gary, and Steve (2010) carried out a study on the macroeconomic factors that affect corporate performance and insolvency in emerging economies, concentrating on Jordan. The methodology employed descriptive statistics, and the analysis of the formulated hypothesis utilized standard deviation. The findings suggest that unanticipated variations in inflation, money supply, and credit accessibility exert a detrimental and statistically non-significant influence on the performance of a company, specifically in terms of Return on Assets (ROA).We carried out the study using ARDL model on panel data unlike the works of Rami, Gary, and Steve (2010) using standard deviation for measurement of risk factor. We applied Eagle ganger co-integration test and observed a long run relationship where it takes

33% speed to adjust to normal if there is evidence of short run deviation in the long run .Our result indicated a positive and significant impact of inflation rate risk on asset turn over.

Objective two establish the effects of inflation risk on earning per share of selected brewery firm in the West Africa sub- region. Musawa and Mwaanga (2017) employed descriptive statistics, Auto Regression Distribution Lag bound test, and Vector Auto Correction based co-integration model to examine the impact of commodity prices, interest rate risks, and exchange rate risk s on the performance of the Zambian stock exchange from 2004 to 2016. The findings suggested that exchange rate risk s, interest rate risks, copper, and oil prices had significant effects collectively exert both long-term and short-term impacts on the Zambian stock market. Specifically, interest rate risks and copper prices individually demonstrate a noteworthy long-term the impact on the Lusaka Stock Market is notable, although in the immediate period, only fluctuations in copper prices and exchange rate risk s have a direct and swift effect on the Lusaka Stock Market. We carried out similar test using co-integration –bounds test and error correction model since long run relationship were established and speed of adjustment identified to be 12% and at significant level: However, the study carried out by Musawa and Mwaanga (2017) did not disclose these dynamics of macro-economic variables as the play out concurrently. Inflation rate risk have a positive effect on earnings per share of quoted breweries in West the Africa sub-region, though there is evidence of long run relationship just like that of the Lusaka Stock Market.

5.1 The Summery of Findings

The chapter summarized the results of the empirical study carried out on the effect of market risk on performance of quoted breweries in West the Africa sub-region.

(i).The coefficient of inflation rate risk is positively signed therefore, Inflation rate risk have a positive effect on asset turnover of quoted breweries in West the Africa sub-region. The observation implied that null hypothesis is not accepted.

(ii)The coefficient of inflation rate risk is positively signed therefore, Inflation rate risk have a positive effect on earnings per share of quoted breweries in West the Africa sub-region. The observation implied that null hypothesis is not accepted.

Quoted breweries in the West African sub-region must navigate a complex landscape of market risks that can significantly impact their performance. By implementing robust risk management practices and staying adaptable to economic changes, these companies can better withstand the adverse effects of inflation, interest rate, and exchange rate fluctuations. Inflation leads to higher costs for raw materials such as barley, hops, and packaging materials. This increases production costs and can squeeze profit margins if prices cannot be passed onto consumers. Increased inflation can also raise operating costs, including wages, utilities, and transportation, further impacting profitability. High inflation erodes consumers' purchasing power, potentially reducing demand for beer and other alcoholic beverages, which are often considered discretionary spending. Many breweries rely on borrowed funds for expansion and operational activities. Rising interest rates increase the cost of existing and new debt, thereby affecting profitability. Higher interest rates can lead to reduced investment in new projects or expansion as the cost of capital increases, potentially stifling growth.

5.3 Recommendations:

To mitigate the effects of market risks such as inflation risk, interest rate risk, and exchange rate risk on the performance of quoted breweries in the West African sub-region, the following recommendations can be made:

(i) Implement cost control measures to reduce waste and improve operational efficiency. This can involve adopting lean manufacturing techniques and optimizing supply chain operations.

(ii) Develop a flexible pricing strategy that can be adjusted in response to inflationary pressures. Consider introducing premium products that can justify higher prices.

Contributions to existing knowledge

The study serve as a case study for best practices in managing market risks. This can be valuable for other industries in the region facing similar economic challenges. Enhanced understanding of market risks and mitigation strategies can help in developing better regulatory frameworks that protect businesses while encouraging growth and innovation.

Breweries that are financially stable and growing can contribute to community development projects, such as infrastructure improvements, education, and health initiatives.

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