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Accounting and Auditing

Asset Size of Commercial Banks

Financial Crises and the Success

Highlights

Assessing the Moderating Effect

Firm Characteristics and Profitability

Discovering Thoughts, Inventing Future

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Firm Characteristics and Profitability in Nigerian Consumer Goods Firms: Assessing the Moderating Effect of Firm Size

By Idogho, Abraham Momoh, Onmonya, Lucky Otsoge, Uthman, Ahmad Bukola, Ebogbue, Celestine Chukwutem & Bosun-Fakunle, Yemisi F.

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Abstract- This study examines the impact of firm characteristics on the profitability of listed consumer goods companies in Nigeria. The specific objectives are to assess the influence of firm characteristics (liquidity, leverage, and age) on the profitability of these companies in Nigeria, and to explore the moderating effect of firm size on the relationship between firm characteristics and profitability. The ex post facto research design was implemented for this study. The data were collected from secondary sources, particularly the audited financial reports of 16 consumer goods companies listed on the Nigerian Exchange Group as of December 31, 2022, spanning a decade (2013-2022) using purposive sampling techniques. The Descriptive and inferential statistics were employed to analyze the data. The Panel regression analysis was conducted for hypothesis testing, and pre-estimation and post-estimation procedures were executed. The Hausman test confirmed that the random effect model was appropriate. The findings indicate that liquidity has a negative and significant impact on profitability, while leverage and firm age exhibit positive but insignificant effects.

Keywords: firm characteristics, profitability, firm size, consumer goods companies.

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Firm Characteristics and Profitability in Nigerian Consumer Goods Firms: Assessing the Moderating Effect of Firm Size

Idogho, Abraham Momoh [α], Onmonya, Lucky Otsoge [σ], Uthman, Ahmad Bukola [ρ], Ebogbue, Celestine Chukwutem [ω] & Bosun-Fakunle, Yemisi F. [¥]

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Keywords: firm characteristics, profitability, firm size, consumer goods companies.

I. Introduction

Consumer goods companies produce products that play a significant role in the Nigerian economy by creating job employment, supporting the GDP, and providing goods that meet the demands of the growing population. The country of Nigeria has a large and a growing population that provides a major demand for consumer goods, thereby creating a significant market for the industry. The consumer goods sector has developed as the fastest-growing segment of the FMCG in Africa (Oduogu et al., 2024). The expanding middle class of the population, increase in urbanization, rising disposable income, e-commerce, export potentials have significantly influenced the high demand for goods in this sector. The consumer goods companies are expected to profit from achieving these goals.

Firm characteristics impact the actions of a company that is internally controlled and help facilitate the achievement of set objectives (Wakaisuka-Isignoma, 2016). The Handoyo et al. (2023) described firm characteristics as anticipating strategic outcomes that enhance performance. The failure of a company to maximize its profitability through internal resources is perceived to have a major challenge (Msomi & Nyide, 2021). Hence, there is a need for an in-depth understanding of the relationship between specific firm characteristics and profitability, as these factors are key determinants of a firm's profitability. The profitability of consumer goods companies can be affected by the influence of firm size on company characteristics. Therefore, the moderating effect of firm size on firm characteristics and profitability of consumer goods companies in Nigeria is crucial to this sector, as different studies have shown varied and inconsistent results.

Profitability is a significant condition for the survival of any entity. Profitability indicates the financial health of a definite period (Alhasanko, 2024). It also affects the performance of other organizational goals, whether financially or otherwise. The ability of an organization to generate a profit is a key indicator that attracts prospective investors to the organization.

The current inflation in Nigeria reached a record high of over 33.9% in October 2024, significantly impacting production costs and directly affecting the purchasing power of citizens. With the high inflation rate and unified foreign exchange rate, many businesses, including consumer goods companies, encounter low profitability as economic conditions take their toll on the

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Nation. Therefore, the internal factors influencing the profitability of consumer goods companies should be examined as they develop strategies to enhance profitability.

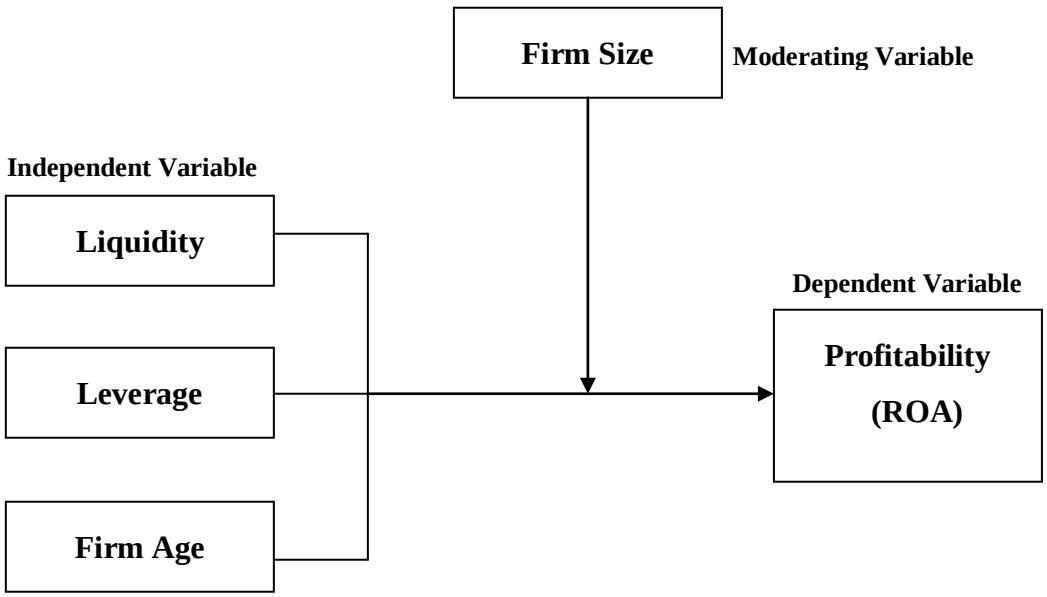
Many studies have explored firm characteristics, including those of Chabachib et al. (2020), who analyze companies' characteristics of firm value with profitability serving as an intervening variable. Zubairu et al. (2022) examined the effect of several key monetary variables as a moderator. Morris et al. (2023) utilized cash conversion to moderate the firm attributes and financial leverage of listed consumer goods firms in Nigeria. The study of Adenle et al. (2024) employed leverage as a moderating variable to determine the influence of firm attributes on the financial performance of listed Nigerian consumer goods firms. Idris and Adediran (2023) used firm size as a moderating variable for corporate attributes and financial reports of consumer goods companies in Nigeria. The study by Onatuyeh et al. (2024) examined financial reporting quality and performance, with emphasis on the mediating role of firm characteristics. These studies have focused on consumer goods companies. The existing literature has not examined the effect of firm size as a moderating variable of firm characteristics and profitability of listed consumer goods companies in Nigeria. This study fills the gap in the existing literature by examining the effect of firm size on firm characteristics (liquidity, leverage, and firm age) and broadens the understanding of the variables that impact the profitability of consumer goods companies in Nigeria.

The study aims to examine firm characteristics and profitability of listed consumer goods companies in Nigeria: The moderating effect of firm size.

II. Literature Review

a) *Conceptual Framework*

The study's conceptual framework comprises exogenous variables of firm characteristics proxied by liquidity, leverage, and firm age and endogenous variable of profitability proxied by return on assets (ROA). The moderating variable was firm size.



Source: Adapted from Idris & Adediran (2023) and Suleiman & Khalid (2024)

Fig. 2.1: The Framework of the Study

III. Profitability

The main objective of a business is to generate profits. The profitability is crucial for a business entity's survival and helps to measure its activities. Profitability connotes efficiency by comparing the results of an activity with the efforts put into it. This is a quantitative factor for assessing economic growth (Geamanu, 2011). An entity's performance primarily refers to its profitability, which effectively contributes to its resources and, in turn, to the national economy's over all development (Lazar, 2016). The management's efficiency is often evaluated by its ability to generate profit; the greater the profit, the higher the efficiency (Toshniwal, 2016). The firm's value is largely a function of its profitability and growth potential (Fajaria & Isnalita, 2018). The interest of an entity is not only to generate profit but also to maintain that profit on an incremental basis. The consistency helps attract and retain stakeholders, which is usually reflected in stock prices. Kuster et al. (2023) identified two methods for measuring profitability: return on assets (ROA) and return on equity (ROE). The method adopted by any organization may not be sanctioned but must be

defensible. Profitability involves two aspects: profit and ability. Profit is the amount obtained by deducting total expenses from the total revenue. The term ability refers to the organization's capacity to generate profits. 'The ability also means earning power, earning capacity, or operating performance of the concerned investment' (Toshniwal, 2016). Increased competition, technological innovation, and price dynamics affect profitability (Fareed et al., 2016).

The study proxied profitability by ROA, in line with the studies by Yau et al. (2024), Adenle et al. (2024), Irwansyah et al. (2023), and Azlan et al. (2022).

IV. Firm Attributes

a) Liquidity

Liquidity refers to cash. It is the ability to convert financial assets into cash without diminishing their value. Liquidity is the ability to fulfill monetary and other obligations with minimal expenses. The maintenance of an adequate level of liquidity helps ensure that an entity's goals and objectives align with cash flow expectations, thus preventing adverse effects on its operations. Liquidity management involves strategies (both short- and long-term) that can be utilized to manage cash positions over time. The survival of an organization requires the availability of funds and the assurance that funds will be accessible to meet obligations as they come due in the future. High liquidity signals that an entity can settle its debts. Conversely, low liquidity increases the risk of defaulting on debt repayment (Ali, 2023). An entity that fails to meet its obligations as they fall due may encounter insolvency challenges. The significant lack of liquidity can drive an entity into insolvency (Pandey, 2016). The industry average of 2:1 is typically regarded as a protective ratio against inadequate liquidity. Liquidity can be characterized by both monetary and banking history. Today, it encompasses various explanations, such as market complexities and technological advancements, including financial and security market services (Attila, 2014). The availability of cash can significantly impact a business's efficiency. Various ratios, such as current, acid-test, and cash ratios, are employed to measure liquidity, each presenting distinct advantages and disadvantages.

b) Leverage

Leverage is a strategy that utilizes outsiders' money to enhance the returns of an entity. It represents the amount of borrowed funds a company uses to finance its assets. A leveraged company is an entity that is highly geared, meaning it relies more on debt than equity in its capital structure. High leverage indicates increased debt and a corresponding increase in financial risk. Companies are typically motivated to use leverage to boost profitability, which ultimately helps maximize shareholders' returns. This strategy is based on the premise that fixed-cost charges can be obtained at a lower cost and yield returns exceeding the entity's rate of return (Pandey, 2016). Financial leverage can be measured through the 'Debt ratio, Debt-equity ratio, and Interest coverage'. The first two are known as capital gearing, based on book or market values, while the last is termed the coverage ratio and measures an entity's income gearing. The necessity for leverage varies among entities; factors such as assets, structure, and operating systems often influence their leverage position.

c) Firm Age

Firm age is often described as the number of years a firm has existed since its incorporation. The ageing process of firms can occur at different levels, specifically in areas of employees, organizations, or groups of firms (Coad, 2018). The profitability of a firm appears to decline as it grows older. This decline may be attributed to rising costs, slow growth, obsolescence, and a reduction in research and development activities (Claudio & Urs, 2010). The relationship between firm age and profitability is also convex, indicating that younger firms may exhibit signs of profit reduction but can transition to profitability as they mature (Elif, 2016). Kajola et al. (2022) found an inverse relationship between firm age and profitability, whereas Kaoje et al. (2022) observed a positive relationship. This research measures firm age from the date of incorporation.

V. Firm Size

Firm size is one of the pivotal attributes of any organization that influences its control mechanisms and operations. Companies' assets, turnover, and liquidity are affected by it. Firm size can be measured by the volume of total assets, total sales, or primarily by market capitalization (Dang et al., 2018). The management of most companies is mainly concerned about the influence of firm size on their operations and profitability. The study of Izvorni (2012) stated that firm size is not the primary determinant of performance; other factors, particularly internal and external factors, also contribute to performance. Patrizio and Fabiono (2003) revealed that larger firm size influences productivity growth, allowing a firm to maximize the associated returns from research and development. The study by Daye et al. (2021) stated that the market value of stock primarily measures the effect of size, and firm size measured in that way is typically larger than measurements conducted using other variables, such as total assets or total turnover. Firm size plays a significant role in determining the relationship a given firm has with its internal and external operating environments. The size of a firm is crucial in shaping how it interacts with its inner workings and external surroundings. The scale of a firm increases its power to affect multiple stakeholder groups. Firm size plays a significant role in determining

an organization's performance. Larger firms enjoy economies of scale and are mostly able to withstand unfavourable pressures, which helps to lower their failure rate (Pila, 2022). The study of Dogan (2023) on the effect of firm size on profitability of quoted firms found a positive relationship between firm size and profitability. Firm sizes can be measured using the natural logarithm of an organization's total assets (Idris & Adediran, 2023). Therefore, this study adopts moderating firm size to examine the effect of firm characteristics on the financial performance of industrial goods firms in Nigeria, combining two financial variables (liquidity and leverage) and non-financial variables (firm age).

VI. Theoretical Framework

Dynamic capability theory (DCT) propounded by Teece et al. (1997) supports this study. This theory was developed to address the weaknesses of Resource-Based Theory. Bleady et al. (2018) stated that Resource-Based Theory has limitation in interpreting the development of an organizational and the adoption of resources and capabilities can help to access the rapidly changing business environment. Teece et al.(1997) defined DCT as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments". DCTs are thus "the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die" (Eisenhardt & Martin, 2000).This suggests that organizations with greater dynamic capability tend to perform better than those that lack them. The utilization of dynamic capabilities can create and sustain a competitive advantages by responding effectively to environmental changes. Dynamic capabilities, also called 'first–order' capabilities, lead to intentional product changes, production processes, and market adaptations within an organization. An organization possesses dynamic capabilities when its internal and external characteristics adjust to environmental changes. The theory posits that an organization's systems facilitate the gathering and modification of operations, enabling it to thrive in its environment by creating new ventures and strategic positioning, which grants it a competitive advantage. Firm characteristics are resources that can influence an organization's profitability compared to its competitors in the industry. This theory enhances profitability by creating a dynamic market that embraces new technologies and adapts to the competitive environment. According to Schumpeter (1934), profitability arises when an organization innovates in new areas, whereas profitability diminishes when innovations are replicated. Profitability is ensured when capabilities are innovative in a changing environment.

VII. Empirical Review

Many studies have investigated the relationship that exists between liquidity and profitability. Tanko et al. (2024) examined the impact of firm characteristics on environmental performance using multiple regression. They found that liquidity has an insignificant effect on the environmental performance of consumer goods firms. The study indicated that management should not rely on liquidity as a significant factor in determining spending on waste management, as it will not enhance environmental performance. Etukudo et al. (2022) studied how leverage, liquidity, operating expenses, and firm size significantly affect the profit after tax of consumer goods companies listed in Nigeria. The variables demonstrated significant effects on Return on Assets (ROA) and an inverse effect on Return on Equity (ROE). Consequently, the study recommended that consumer goods companies in Nigeria maintain adequate liquidity to strengthen their financial performance. Chabachib et al. (2020) examined the literature supporting the positive effect of liquidity on consumer goods companies on the Indonesia Stock Exchange for the period of 2014-2018. The study utilized path analysis derived from multiple regression, along with bivariate analysis, and concluded that liquidity has a positive and significant effect on profitability. As an intervening variable, profitability also influences companies' liquidity and value. These studies reveal that the relationships between liquidity and profitability are consistent with the theory of firm characteristics.

Some studies have related leverage to profitability. Study of Irwansyah et al. (2023), examined how the COVID-19 pandemic affected consumer goods firms' performance and found that larger firms, mainly in Europe, America, and Asia-Pacific, developed more tenacity and performance during the pandemic. Consequently, companies with debt in their capital structure in the Americas and Asia-Pacific supported performance during the pandemic are better than those without debt.

Isaiah et al. (2022) conducted a study on firm-specific characteristics and financial performance of publicly listed consumer goods companies in Nigeria, focusing on the effect of specific characteristics and profitability. The study found that financial leverage hurts performance, as measured by ROA. In using leverage as a moderating effect in the study of firm characteristics and performance, Adenle et al. (2024) used panel regression, correlation analysis, and descriptive statistics. The study found that leverage had a notable and essential moderating effect on the ROA of consumer goods firms in Nigeria. This study posits that companies should develop optimal financial strategies with less debt risk.

Other studies look at the relationship between firm age and profitability. Azlan et al. (2022) empirically

examined firm characteristics and profitability of consumer goods companies in Malaysia and found that firm age had an insignificant relationship with profitability. The study recommends that consumer goods companies should focus less on firm age as it hurts profitability. A similar survey by Nangih et al. (2023) found that age significant and negative affect performance measured by the ROA of listed consumer goods companies in Nigeria. The study recommended that the management of consumer goods firms should be mindful that the older the firm, the more profitable it is.

Accessing the research work of Abel et al. (2024) on firm characteristics and financial performance in Nigeria, they found that firm age has a negative and significant impact on the performance of consumer goods firms; therefore, it is recommended that consumer goods firms adopt other means to have an upper share of the market through diversification.

VIII. Methodology

Aquantitative and an ex-post facto research design was adopted for the study. Descriptive statistics, correlations, and multiple regression techniques were utilized to analyze the data. This study utilizes secondary data on the chosen company attributes of Nigerian consumer goods companies from 2013 to 2022, including liquidity, leverage, firm age, and profitability (ROA). The study sample comprises 16 consumer goods companies in the Nigerian Exchange Group (NGX) as of December 31, 2022. A purposive sampling technique was used based on the availability of data. Data were analyzed using Stata 14. Multiple regression models were employed to evaluate our hypotheses. The equation for this model is as follows:

Model

Model 1: When the moderating variable is not applied

$$ROAit = \beta O + \beta 1\ LQDit + \beta 2\ LEVit + \beta 3FAit + \varepsilon i \quad \text{eq.1}$$

Model 2: When the Moderating Variable is Applied

$$ROAit = \beta O + \beta 1\ LQDit + \beta 2\ LEVit + \beta 3FAit + \beta 4\ LQDit*FSIZEit + \beta 5\ LEVit*\ FSIZEit + \beta 6FAit*\ FSIZEit + \varepsilon it \quad \text{eq.2}$$

Where:

ROA	=	Return on Assets
LQD	=	Liquidity
LEV	=	Leverage
FSIZE	=	Firm Size
βO	=	Constant to be estimated
$\beta 1$- $\beta 6$	=	Coefficient of estimate
ε	=	Error term
t	=	Period
i	=	Firm

The variables used in this study were adopted from previous studies and are presented in Table 1.

Table 1: Variable Measurement and Justification

Variables	Type	Measurement	Justification
Return on Assets	Dependent	Net profit after tax/Total Assets	Irwansyah et al. (2023) Yau et al. (2024)
Liquidity	Independent	Current assets to current liabilities	Kolawole et at.(2021) Irwansyah et al. (2023)
Leverage	Independent	Total Debt to Total Assets	Abel et al. (2024) Isaiah et al.(2022)
Age	Independent	Number of years the company has been in existence	Wahab et al. (2022)
Firm Size	Moderating	Natural Logarithm of a firm's Total Assets.	Kolawole et at.(2021) Onatuyeh et al. (2024)

Source: Researcher's Compilation

IX. Results and Discussion

The study examines the effect of firm characteristics on the profitability of consumer goods Companies in Nigeria. This study used 16 consumer goods companies' annual reports listed on the Nigerian Exchange Group (NGX) for 10 years between 2013 and 2022. The panel data amounted to 160 firm-year observations.

a) Descriptive Statistics

Table 2: Descriptive Statistics between Firm Characteristics, Firm Size and Performance

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	160	4.99	7.24	-18.28	26.49
Liquidity	160	124.14	130.61	7.4	1587.13
Lev	160	237.55	461.35	-298.28	4792.30
Firm age	160	54.56	24.7	9	123
Fsize	160	7.63	0.79	5.51	8.82
Lqd* fsize	160	921.22	868.60	51.5	10630.46
lev* fsize	160	1858.52	3758.48	-2076.31	41033.06
fa* fsize	160	423.93	206.03	49.56	988.60

Source: Stata output (2024)

Table 2 summarizes the descriptive statistics for the variables investigated in this study. As evident in the descriptive result, *the* profitability of the Nigerian consumer companies has a mean value of 4.99% and a standard deviation for the ROA (profitability) of 7.24%. The result also shows a minimum value of -18.28% and a maximum of 26.49%, signifying that the average profitability of the companies has a significant variability. The average liquidity was 124.14 billion, with a standard deviation of 130.61 billion. This result demonstrates substantial liquidity and high variability. The mean leverage is 237.55 billion, with a standard deviation of 461.35 billion, indicating a high degree of debt financing in this sector. The mean of firm size is 7.63 billion, and the standard deviation of 0.79 billion, suggesting limited variation in firm size among consumer goods companies. The average value for the moderating relationship between firm size and liquidity is 921.22 billion, with a standard deviation of 868.60 billion. The mean for the moderation relationship between firm size and leverage is 1,858.52 billion, accompanying by a standard deviation of 3,758.48 billion. The wide margin between the standard deviation and mean suggests a significant difference.

Finally, the average moderating effect of firm size and age is 423.93 billion, with a standard deviation of 206.03 billion, indicating a relatively small disparity among consumer goods companies' ages.

b) Correlation Analysis

Table 3: Matrix of Correlations Analysis

	ROA	Liquid	Lev	Firm age	Fsize	Lqd*fsize	lev*fsize	fa*fsize
ROA	1							
Liquidity	0.1643	1						
Lev	-0.1564	-0.3066	1					
Firm age	-0.1233	0.0390	0.2420	1				
Fsize	0.1201	-0.3331	0.2582	0.4238	1			
Lqd*fsize	0.1871	0.9659	-0.2463	0.1072	0.1271	1		
lev*fsize	-0.1423	-0.3498	0.9885	0.2919	0.3793	-0.2646	1	
fa*fsize	-0.0899	-0.0667	0.2544	0.9587	0.5965	0.0425	0.3298	1

Source: Stata output (2024)

Table 3 presents the correlation coefficients among the research variables.

The table illustrates how return on assets, as the dependent variable, correlates with the independent variables of liquidity, leverage, and firm age, both with and without moderation. Consequently, the correlation coefficient matrix ranges from -1 to +1. According to the table, liquidity and profitability show a direct relationship, demonstrating that an increase in liquidity leads to a direct increase in profitability. Likewise, the moderating effects of firm size and liquidity are positive. This result indicates that high liquidity contributes to higher profitability. This suggests that consumer goods companies need liquidity to enhance profitability.

Conversely, the relationships between leverage, firm age, and their moderation with profitability are negative. Indicating an increase in these two variables may adversely affect the profitability of consumer goods companies. This study also reveals that older consumer goods companies may not adopt a profit-enhancement strategy.

c) Empirical Results

Table 4: Hausman Specification Test

Test of H_0: Difference in coefficients not systematic	
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 14.28	Prob> chi2 = 0.0064

Source: Stata output from the authors' imputed data (2024)

Table 5: Breusch and Pagan Lagrangian Multiplier Test for Model 4

	Var		SD = sqrt(Var)
Test: Var(u) = 0	chibar2(01) =	114.13	Prob> chibar2 = 0.000

Source: Stata output from the authors' imputed data (2024)

Table 6: Heteroscedasticity Tests for Model 4

Breusch–Pagan/Cook–Weisberg test for heteroscedasticity	
Assumption: Normal error terms	
Variable: Fitted values of ROA	
H_0: Constant variance	
chi2 (1)	Prob> chi2
0.73	0.3922

Source: Stata output from authors' imputed data (2024)

Table 7: Direct Relationship Regression Result

	Coefficient	T	P value
Liquidity	- 0.229	-3.25	0.002
Lev	0.001	-0.13	0.896
Firmage	0.224	0.40	0.687
Lqd*fsize	0.034	3.24	0.001
lev*fsize	- 0.000	-0.05	0.962
fa*fsize	- 0.096	-1.70	0.091
F-stat. = 6.18			
Prob. 0.00			

Source: Stata output from authors' imputed data (2024)

X. Results and Discussion

Table 7 shows the direct relationship between the regression results of the moderating effect of firm size on the relationship between firm characteristics and the profitability of consumer goods companies in Nigeria. The results are as follows:

The Hausman Test (Table 4): The validity result of the Hausman test is given in Table 4, with a p-value of 0.0064, confirming the Random-Effect Model is more appropriate than the Fixed-Effect Model.

Breusch and Pagan Lagrangian Multiplier Test (Table 5): This yields a p-value of 0.000, suggesting that the analysis is better suited to the Random-Effect Model as opposed to the pooled effect.

Heteroscedasticity Test (Table 6): The result shows a p-value of 0.3922, which implies that the data have no heteroscedasticity problem. The Null hypothesis for the Breusch–Pagan/Cook–Weisberg test for heteroscedasticity is that the data is homoscedastic and should not be rejected if the p-value is more than 10%.

Observations

1. *Effect of Liquidity and Profitability*

The result reveals that liquidity has a negative and significant effect on profitability (β = -0.229; p = 0.002). This finding is consistent with the study by Etukudo et al. (2022), which states that liquidity has a significant relationship with performance. However, this contradicts the findings of Tanko et al. (2024) that see excess liquidity as an indication of the inefficient use of resources that might lead to profit reduction.

2. *Effect of Leverage and Profitability*

The regression results revealed that leverage has a positive and insignificant effect on profitability (β= 0.001; p=0.896). This finding suggests that higher

leverage could contribute to the profitability of listed consumer goods companies with a limited effect.

This result is consistent with that of Irwansyah et al. (2023) but contradicts that of Isaiah et al. (2022).

3. *Firm Age and Profitability*

The results also show that firm age has a positive and insignificant effect on profitability (β= 0.224, p=0.687). This study is in agreement with the studies of Azlan et al. (2022), which see the number of years of incorporation as a burden to improving profitability, but contradicts that of Nangih et al. (2023), which suggests that the greater the age of firms, the more profitability is derived from experience.

4. *Moderating Effect of Firm Size*

The correlation between profitability, size, and liquidity has been verified, demonstrating a positive increase between profitability and size (β = 0.034; p = 0.001). Additionally, the firm size introduction as a moderating variable highlights the balance between liquidity and profitability and confirming that enhanced liquidity can significantly drive the profit margins of consumer goods firms operating in Nigeria.

In analyzing the relationship between leverage and profitability, it was noted that the interaction of firm size with leverage demonstrates a negative and insignificant relation to profitability (β= -0.00; p = 0.962). In this context, it can be assumed that higher leverage tends to diminish profitability due to the increased costs associated with servicing debt.

The coefficient of the interaction between firm size and age is negative and insignificantly related to profitability (β= -0.096; p = 0.091) when moderated by firm size. This suggests that as the firm ages, profits may decrease, primarily due to the advanced age.

XI. Conclusion and Recommendations

This study aims to examine the relationship between firm characteristics- liquidity, leverage, and firm age- and profitability. It also assesses the moderating effect of firm size on the specific firm characteristics and profitability of listed consumer goods companies in Nigeria. The study recognizes liquidity, leverage, and firm age as exogenous variables, while profitability is treated as an endogenous variable. The findings, which provided insightful analysis, are divided into two parts. First, the panel multiple regression technique indicates that liquidity has a negative and significant effect on profitability. Conversely, leverage and firm age have positive but insignificant impacts on profitability. Second, the study uses the moderating effect of firm size on the relationship between firm characteristics and profitability. The panel regression results indicate that liquidity has a positive and significant effect on profitability, contrary to the earlier results. This suggests that the effective use of liquidity boosts the profitability of this sector. By contrast, leverage and firm age demonstrate a negative and insignificant effect on profitability when moderated by the size of listed consumer goods companies in Nigeria. Based on these findings, this study proposes the following: recommendations:

1. The management of consumer goods companies should put more effort into bolstering their liquidity by preventing unexpected cash falls, ensuring enough cash to bring about a significant positive increase in profitability, especially when the company experiences expansion.
2. Managers of consumer goods companies should balance the benefits of debt against its associated risks to increase profitability.
3. As companies age, their management should focus on achieving sustainable profits so that their continuous survival is not threatened.

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Appendixes

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  ___  ____  ____  ____  ____ (R)
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   14.0   Copyright 1985-2015 StataCorp LP
  Statistics/Data Analysis             StataCorp
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Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	160	4.991875	7.241041	-18.28	26.49
lqd	160	124.1461	130.6187	7.4	1587.13
lev	160	237.5549	461.352	-298.28	4792.3
fa	160	54.5625	24.70574	9	123
fsize	160	7.632562	.7953862	5.51	8.82
lqdfsize	160	921.2221	868.6032	51.5	10630.46
levfsize	160	1858.52	3758.489	-2076.31	41033.06
fafsize	160	423.9351	206.0362	49.56	988.6

Normality Test: Shapiro-Wilk W test

Shapiro-Wilk W Test for Normal Data

Variable	Obs	W	V	z	Prob>z
roa	160	0.97171	3.479	2.836	0.00228
lqd	160	0.37257	77.165	9.886	0.00000
lev	160	0.32929	82.488	10.037	0.00000
fa	160	0.89165	13.326	5.891	0.00000
fsize	160	0.94020	7.354	4.539	0.00000
lqdfsize	160	0.39213	74.758	9.814	0.00000
levfsize	160	0.31885	83.772	10.073	0.00000
fafsize	160	0.92625	9.070	5.016	0.00000

Correlation Matrix

	roa	lqd	lev	fa	fsize	lqdfsize	levfsize
roa	1.0000						
lqd	0.1643	1.0000					
lev	-0.1564	-0.3066	1.0000				
fa	-0.1233	0.0390	0.2420	1.0000			
fsize	0.1201	-0.3331	0.2582	0.4235	1.0000		
lqdfsize	0.1871	0.9659	-0.2463	0.1072	-0.1271	1.0000	
levfsize	-0.1423	-0.3498	0.9885	0.2919	0.3793	0.2646	1.0000
fafsize	-0.0899	-0.0667	0.2544	0.9587	0.5965	0.0425	0.3298

	fafsize
fafsize	1.0000

Pooled OLS Regression

Source	SS	df	MS	Number of obs	=	160
Model	1233.08753	6	205.514588	F(6, 153)	=	4.43
Residual	7103.70793	153	46.4294636	Prob> F	=	0.0004
Total	8336.79546	159	52.4326759	R-squared	=	0.1479
				Adj R-squared	=	0.1145
				Root MSE	=	6.8139

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lqd	-.1061972	.0470591	-2.26	0.025	-.1991667	-.0132277
lev	-.0053483	.0120676	-0.44	0.658	-.0291889	.0184922
fa	-.3172477	.175679	-1.81	0.073	-.6643174	.029822
lqdfsize	.0156911	.0070059	2.24	0.027	.0018503	.0295319
levfsize	.0003395	.0014881	0.23	0.820	-.0026003	.0032794
fafsize	.0284256	.0220829	1.29	0.200	-.0152011	.0720524
_cons	9.619563	1.452417	6.62	0.000	6.750182	12.48894

Multicollinearity Test: vif

Variable	VIF	1/VIF
lqd	129.39	0.007729
lqdfsize	126.82	0.007885
levfsize	107.12	0.009335
lev	106.15	0.009421
fafsize	70.89	0.014106
fa	64.51	0.015501
Mean VIF	100.81	

Heteroskedasticity Test

```
Breusch-Pagan/Cook - Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa
chi2(1)      =     0.73
  Prob>chi2  =   0.3922
```

Random Effect Test

```
Breusch and Pagan Lagrangian multiplier test for random effects

roa[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                     |       Varsd = sqrt(Var)
             ---------+-----------------------------
                 roa |   52.43268       7.241041
                   e |   23.51201       4.848919
                   u |   30.43419       5.516719
                     Test:   Var(u) = 0
                        chibar2(01) =   114.13
                      Prob> chibar2 =   0.0000
```

Random Effect Model Test

```
Random-effects GLS regression      Number of obs  = 160
           Group variable: id  Number of groups  =   16
                     min =    10
                R-sq:   Obs per group:
                within  = 0.1667
                between = 0.0224 avg =       10.0
                overall = 0.0489   max =  10
          Wald chi2(6) = 23.36
          corr(u_i, X) = 0 (assumed)  Prob> chi2  = 0.0007
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lqd	-.1879629	.0640208	-2.94	0.003	-.3134413	-.0624846
lev	-.0045163	.0094039	-0.48	0.631	-.0229475	.013915
fa	.4019112	.3173304	1.27	0.205	-.2200449	1.023867
lqdfsize	.0277779	.0095218	2.92	0.004	.0091156	.0464402
levfsize	.0002699	.0011617	0.23	0.816	-.002007	.0025469
fafsize	-.0702939	.0384443	-1.83	0.067	-.1456432	.0050555
_cons	11.17907	3.610561	3.10	0.002	4.102503	18.25564
sigma_u	5.5167192					
sigma_e	4.8489186					
rho	.56415817	(fraction of variance due to u_i)				

Fixed Effect Model

Fixed-effects (within) regression Number of obs = 160
Group variable: id Number of groups = 16
R-within = 0.2118 mn = 10
within = 0.2118 min = 10
between = 0.0305 avg = 10.0
overall = 0.0333 max = 10
F(6,138) = 6.18
corr(u_i, Xb) = -0.8977 Prob> F = 0.0000

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lqd	-.2289003	.0708189	-3.23	0.002	-.3689307	-.0888699
lev	-.0012313	.0093723	-0.13	0.896	-.0197631	.0173005
fa	.2243502	.5553927	0.40	0.687	-.8738298	1.32253
lqdfsize	.034163	.0105324	3.24	0.001	.0133373	.0549887
levfsize	-.0000559	.0011587	-0.05	0.962	-.002347	.0022352
fafsize	-.0962719	.056623	-1.70	0.091	-.2082328	.015689
_cons	30.9055	9.623206	3.21	0.002	11.8775	49.9335
sigma_u	12.857708					
sigma_e	4.8489186					
rho	.87548759	(fraction of variance due to u_i)				

F test that all u_i=0: F(15, 138) = 10.94 Prob> F = 0.0000

Hausman Test

	---- Coefficients ---- (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
lqd	-.2289003	-.1879629	-.0409373	.03531
lev	-.0012313	-.0045163	.003285	.0022778
fa	.2243502	.4019112	-.1775609	.4775638
lqdfsize	.034163	.0277779	.0063851	.0052506
levfsize	-.0000559	.0002699	-.0003258	.0002852
fafsize	-.0962719	-.0702939	-.0259781	.044037

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 14.28
Prob>chi2 = 0.0064

Cross-sectional Dependence Test

Pesaran's test of cross-sectional independence = 1.005, Pr = 0.3151

Average absolute value of the off diagonal elements = 0.329

S/n	company	year	ROA	LQD	LEV	FA	LQD*FSIZE	LEV*FSIZE	FA*FSIZE	FSIZE
1	Cadbury	2013	13.95	182.33	79.92	48	1392.18	610.26	366.50	7.64
1		2014	5.25	87.85	149.70	49	655.32	1116.65	365.51	7.46
1		2015	4.06	109.38	131.31	50	815.27	978.69	372.67	7.45
1		2016	-1.04	107.70	156.79	51	802.76	1168.63	380.12	7.45
1		2017	1.06	113.65	142.05	52	846.40	1057.85	387.25	7.45
1		2018	2.99	139.10	117.16	53	1034.83	871.62	394.28	7.44
1		2019	3.72	153.25	112.39	54	1143.16	838.35	402.81	7.46
1		2020	2.81	140.82	145.11	55	1059.16	1091.39	413.66	7.52
1		2021	1.03	139.10	220.38	56	1062.76	1683.82	427.87	7.64
1		2022	0.98	122.94	348.89	57	955.99	2712.93	443.23	7.78
2	Neatle Nigeria	2013	20.57	125.65	166.56	52	1009.36	1338.01	417.74	8.03
2		2014	20.96	84.78	195.11	53	680.36	1565.83	425.34	8.03
2		2015	19.91	81.56	213.67	54	658.61	1725.46	436.08	8.08
2		2016	4.67	80.75	449.21	55	664.62	3697.21	452.67	8.23
2		2017	22.97	94.55	227.12	56	772.26	1854.94	457.37	8.17
2		2018	26.49	89.81	223.24	57	737.33	1832.72	467.94	8.21
2		2019	23.62	85.26	324.46	58	706.47	2688.34	480.56	8.29
2		2020	15.93	91.25	740.31	59	765.67	6211.88	495.07	8.39
2		2021	12.91	104.30	1351.19	60	885.64	11473.44	509.48	8.49
2		2022	11.80	133.02	1270.18	61	1146.40	10947.13	525.73	8.62
3	PZ Cussion	2013	7.36	223.98	58.62	114	1760.32	460.68	895.94	7.86
3		2014	7.16	217.23	63.73	115	1705.52	500.39	902.89	7.85
3		2015	6.78	215.56	62.63	116	1687.55	490.29	908.12	7.83
3		2016	2.86	176.87	71.49	117	1392.28	562.71	920.97	7.87
3		2017	4.09	142.94	99.58	118	1137.02	792.16	938.66	7.95
3		2018	2.17	144.47	96.45	119	1148.18	766.53	945.74	7.95
3		2019	1.45	161.06	74.72	120	1272.81	590.45	948.31	7.90
3		2020	-9.23	129.49	127.00	121	1022.28	1002.65	955.28	7.89
3		2021	1.94	132.02	152.77	122	1048.37	1213.12	968.80	7.94
3		2022	6.12	135.89	190.07	123	1092.19	1527.69	988.60	8.04

	Unilever	2013	10.99	65.35	353.90	90	499.36	2704.28	687.73	7.64
4										
4		2014	5.27	58.30	511.54	91	446.54	3918.39	697.05	7.66
4		2015	2.38	60.55	526.90	92	466.24	4057.51	708.46	7.70
4		2016	4.24	77.63	520.12	93	610.20	4088.29	731.01	7.86
4		2017	6.15	245.15	59.51	94	1981.50	481.04	759.78	8.08
4		2018	6.93	234.69	59.25	95	1905.85	481.15	771.45	8.12
4		2019	-7.16	205.29	55.84	96	1645.85	447.67	769.64	8.02
4		2020	-4.33	230.15	47.30	97	1832.35	376.59	772.26	7.96
4		2021	0.64	213.61	64.67	98	1716.01	519.51	787.28	8.03
4		2022	3.56	187.62	733.88	99	1519.11	5942.14	801.59	8.10
5	VitafoamNIG.Plc.	2013	4.12	108.23	220.29	51	757.46	1541.64	356.91	7.00
5		2014	3.64	101.58	295.53	52	719.08	2092.13	368.12	7.08
5		2015	1.72	108.96	212.74	53	780.29	1523.52	379.55	7.16
5		2016	-0.24	92.76	280.38	54	660.81	1997.40	384.69	7.12
5		2017	-0.95	90.80	297.52	55	647.14	2120.45	391.99	7.13
5		2018	3.75	115.09	313.01	56	829.10	2254.96	403.43	7.20
5		2019	17.83	155.24	131.53	57	1108.43	939.10	406.97	7.14
5		2020	18.10	183.80	139.32	58	1348.09	1021.86	425.40	7.33
5		2021	14.46	151.90	145.75	59	1139.62	1093.49	442.64	7.50
5		2022	11.47	149.50	151.70	60	1135.51	1152.21	455.73	7.60
6	Champion Brewery	2013	-12.89	7.40	-298.28	39	51.50	-2076.31	271.47	6.96
6		2014	-7.87	43.00	63.40	40	300.23	442.67	279.28	6.98
6		2015	0.75	75.65	45.04	41	530.55	315.85	287.53	7.01
6		2016	5.32	98.10	29.86	42	685.24	208.56	293.37	6.99
6		2017	5.13	132.83	24.01	43	930.36	168.18	301.19	7.00
6		2018	-2.52	89.12	32.15	44	625.70	225.75	308.93	7.02
6		2019	1.53	91.15	36.72	45	641.83	258.59	316.86	7.04
6		2020	1.40	80.27	41.35	46	566.44	291.78	324.62	7.06
6		2021	7.30	118.35	46.28	47	843.91	330.02	335.13	7.13
6		2022	10.26	159.63	38.98	48	1147.82	280.27	345.14	7.19
7	Guiness Plc.	2013	9.80	62.87	162.95	51	508.20	1317.10	412.22	8.08
7		2014	7.23	92.30	193.66	52	749.51	1572.63	422.27	8.12
7		2015	6.38	72.69	152.88	53	587.82	1236.26	428.58	8.09
7		2016	-1.47	71.33	228.83	54	580.40	1861.92	439.38	8.14
7		2017	1.32	89.81	240.07	55	733.24	1960.05	449.04	8.16
7		2018	4.38	127.45	74.97	56	1043.17	613.62	458.34	8.18
7		2019	3.41	121.47	80.54	57	996.86	661.00	467.79	8.21
7		2020	-8.73	89.07	97.36	58	726.64	794.27	473.19	8.16
7		2021	0.74	90.09	128.04	59	741.23	1053.54	485.45	8.23
7		2022	7.26	103.40	139.68	60	861.79	1164.13	500.07	8.33
8	International Brew.	2013	10.88	84.34	145.59	42	620.87	1071.79	309.19	7.36
8		2014	8.64	84.41	116.24	43	623.60	858.74	317.66	7.39
8		2015	6.45	73.48	147.95	44	549.62	1106.69	329.12	7.48
8		2016	7.92	50.71	139.20	45	381.59	1047.51	338.63	7.53
8		2017	2.30	45.83	223.97	46	350.72	1713.99	352.03	7.65
8		2018	-1.25	55.14	782.45	47	468.18	6644.10	399.09	8.49
8		2019	-7.61	39.97	4792.30	48	342.25	41033.06	410.99	8.56
8		2020	-3.32	42.53	145.59	49	364.58	1247.97	420.01	8.57
8		2021	-3.76	57.89	247.33	50	498.39	2129.42	430.48	8.61
8		2022	-4.47	85.53	312.72	51	742.79	2715.97	442.93	8.68
9	Nigeria Brew.	2013	17.04	45.15	124.96	67	379.42	1050.03	563.01	8.40
9		2014	12.18	46.24	103.08	68	395.00	880.61	580.91	8.54

9		2015	10.68	38.05	106.72	69	325.41	912.59	590.05	8.55
9		2016	7.74	51.69	121.29	70	442.67	1038.79	599.53	8.56
9		2017	8.65	56.07	114.38	71	481.16	981.58	609.33	8.58
9		2018	5.01	61.77	132.73	72	530.50	1140.01	618.40	8.59
9		2019	4.21	51.98	128.18	73	446.17	1100.22	626.57	8.58
9		2020	1.65	44.28	176.62	74	382.99	1527.67	640.05	8.65
9		2021	2.61	44.09	182.42	75	383.02	1584.65	651.50	8.69
9		2022	2.13	38.12	244.55	76	335.18	2150.16	668.22	8.79
10	Dangote Sugar	2013	13.04	134.21	77.02	13	1062.94	610.00	102.96	7.92
10		2014	12.54	108.55	80.50	14	864.91	641.38	111.55	7.97
10		2015	11.24	107.57	76.49	15	861.90	612.87	120.19	8.01
10		2016	8.07	111.75	169.65	16	922.02	1399.72	132.01	8.25
10		2017	20.39	134.31	110.36	17	1113.44	914.90	140.93	8.29
10		2018	12.55	149.38	76.93	18	1231.31	634.14	148.37	8.24
10		2019	11.54	129.31	79.13	19	1071.71	655.82	157.47	8.29
10		2020	10.71	124.11	122.94	20	1048.00	1038.11	168.88	8.44
10		2021	6.13	98.30	179.49	21	834.14	1523.07	178.20	8.49
10		2022	11.12	108.86	187.59	22	946.19	1630.55	191.22	8.69
11	Flour Mill	2013	2.76	95.15	234.05	53	803.72	1977.06	447.70	8.45
11		2014	1.81	78.38	255.73	54	664.10	2166.77	457.53	8.47
11		2015	2.47	68.97	306.45	55	588.68	2615.63	469.44	8.54
11		2016	4.18	68.12	260.62	56	581.59	2225.11	478.12	8.54
11		2017	1.83	82.89	370.63	57	719.81	3218.52	494.98	8.68
11		2018	3.33	87.22	171.12	58	750.98	1473.43	499.42	8.61
11		2019	0.96	97.64	176.09	59	841.66	1517.93	508.59	8.62
11		2020	2.63	127.54	177.56	60	1101.40	1533.28	518.13	8.64
11		2021	4.72	145.93	211.96	61	1274.88	1851.80	532.92	8.74
11		2022	4.20	140.37	240.48	62	1238.67	2122.01	547.10	8.82
12	Honeywell Flour	2013	5.13	74.36	198.80	41	575.84	1539.45	317.48	7.74
12		2014	5.25	98.84	209.78	42	771.40	1637.28	327.80	7.80
12		2015	1.65	58.46	234.44	43	457.82	1836.07	336.77	7.83
12		2016	-3.98	50.34	364.76	44	396.73	2874.59	346.76	7.88
12		2017	3.80	49.44	116.21	45	398.14	935.83	362.39	8.05
12		2018	3.55	76.62	121.37	46	620.35	982.73	372.46	8.10
12		2019	0.05	72.92	142.65	47	593.56	1161.16	382.57	8.14
12		2020	0.46	68.94	148.34	48	562.00	1209.28	391.31	8.15
12		2021	0.76	74.16	154.27	49	605.71	1259.94	400.20	8.17
12		2022	-0.66	78.33	165.59	50	640.40	1353.84	408.80	8.18
13	McNichols Plc.	2013	7.29	136.02	69.42	9	749.02	382.27	49.56	5.51
13		2014	10.72	93.47	70.43	10	521.36	392.86	55.78	5.58
13		2015	14.36	114.34	61.31	11	643.00	344.79	61.86	5.62
13		2016	12.17	92.55	57.56	12	525.41	326.73	68.12	5.68
13		2017	7.09	89.54	65.52	13	513.21	375.56	74.51	5.73
13		2018	4.75	283.74	147.84	14	1678.86	874.75	82.84	5.92
13		2019	2.37	304.29	108.57	15	1782.77	636.08	87.88	5.86
13		2020	2.27	359.24	101.27	16	2102.26	592.63	93.63	5.85
13		2021	2.06	310.45	92.82	17	1813.19	542.09	99.29	5.84
13		2022	3.02	343.17	71.83	18	1995.69	417.74	104.68	5.82
14	Nascon Allied Ind.	2013	23.62	149.27	65.85	40	1053.35	464.67	282.28	7.06
14		2014	14.87	105.18	99.07	41	746.79	703.43	291.12	7.10
14		2015	12.92	118.03	129.89	42	851.28	936.76	302.91	7.21
14		2016	9.82	120.36	205.77	43	889.54	1520.86	317.81	7.39

14		2017	17.74	124.60	161.14	44	931.81	1205.11	329.06	7.48
14		2018	14.60	115.39	154.51	45	863.30	1155.98	336.66	7.48
14		2019	4.77	105.93	248.70	46	803.79	1887.09	349.03	7.59
14		2020	6.07	93.69	248.35	47	716.37	1898.95	359.38	7.65
14		2021	7.33	111.88	176.96	48	851.12	1346.23	365.16	7.61
14		2022	9.85	128.46	191.62	49	994.84	1483.94	379.47	7.74
15	Northern Nig.Flour	2013	6.21	169.25	125.66	38	1110.13	824.20	249.25	6.56
15		2014	7.15	216.97	84.15	39	1413.33	548.15	254.05	6.51
15		2015	-4.85	54.29	20.29	40	359.11	134.20	264.57	6.61
15		2016	-5.01	288.08	16.51	41	1899.87	108.88	270.39	6.59
15		2017	-0.37	76.90	249.91	42	510.42	1658.73	278.76	6.64
15		2018	-1.03	110.12	403.95	43	745.74	2735.58	291.20	6.77
15		2019	-0.63	104.02	333.90	44	800.79	2570.46	338.73	7.70
15		2020	0.76	99.35	206.68	45	688.40	1432.10	311.81	6.93
15		2021	0.95	98.77	164.20	46	678.31	1127.59	315.89	6.87
15		2022	0.61	96.58	366.47	47	688.10	2610.83	334.84	7.12
16	Nig.Enamelware	2013	3.36	154.47	86.11	53	979.85	546.18	336.18	6.34
16		2014	2.79	130.30	148.39	54	845.55	962.95	350.41	6.49
16		2015	1.48	116.46	284.69	55	780.40	1907.70	368.55	6.70
16		2016	2.94	124.59	221.83	56	829.41	1476.76	372.79	6.66
16		2017	0.77	117.37	308.28	57	794.05	2085.62	385.63	6.77
16		2018	-0.07	124.83	221.41	58	831.41	1474.67	386.31	6.66
16		2019	-5.51	117.99	270.65	59	783.63	1797.56	391.86	6.64
16		2020	-7.03	1587.13	499.97	60	10630.46	3348.76	401.87	6.70
16		2021	-18.28	90.29	171.15	61	557.85	1057.36	376.87	6.18
16		2022	-9.78	89.04	2945.91	62	591.61	19573.59	411.95	6.64

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Financial Crises and the Success of Global Portfolio Management: A Study of the Middle East and North Africa

By Fatma Khalfallah

Abstract- Our principal objective is to implement a conditional CAPM that, in addition to the global market risk, specifies the level of market integration, evaluates exchange rate risk, and accounts for local market risk. To investigate the potential for portfolio diversification for foreign investors in this region by examining the impact of financial crises on the evolution of national markets in the MENA region's financial integration with the global market as well as with the three selected developed markets, namely France, Great Britain, and the United State. In order to test a conditional version of De Santis and Gerard's ICAPM by admitting a specification of a multivariate GARCH process, this line of research has used a particular methodology (MGARCH).

Keywords: financial crisis, ICAPM, international diversification, financial integration.

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I. Introduction

In modern portfolio theory and with the famous Markowitz theory (52), international diversification is an integral feature of international financial markets.

Any investor will certainly prefer investment opportunities that offer the most attractive prospects all else being equal, the rate of return taken in isolation is not sufficient to characterize an investment opportunity. It is also necessary to consider possible deviations of the rate of return from its expected value, which brings us back to the concept of uncertainty or risk.

Thus, several potential benefits have encouraged investors to internationalize their portfolios; risk reduction, performance improvement. However, these benefits are directly related to the nature of the financial market structures of the countries involved (Hasan and Simaan 2000).

In addition, several factors present an obstacle to the gains of international diversification. Thus, previous works have shown that the exchange rate risk and the political risk present major limits to the benefits resulting from the strategy of international diversification (Eun and Resnik (1987), Cosset and Suret (1995)).

Over time, and depending on the events that have occurred in the financial markets, particularly the incidence of financial crises, the debate has focused on the significant impact of these crises on international portfolio diversification strategies.

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Indeed, the strong financial integration between financial markets constitutes a major concern for the investor in search of international portfolio diversification. Since, the direct consequence of financial inter-dependencies is the propagation of volatility on stock markets.

This transmission of volatility manifests itself in the instability of financial markets in the prices and returns of financial assets and in the levels of stock market indices.

In this context, the international investor is confronted with this risk, which presents a threat that prevents them from achieving their objectives in international diversification strategies.

This observation opens up a rich field of research, and several empirical works have taken into consideration the intensity of the changes that have hit the global financial system since the 1987 crisis.

The first line of research was conducted by Roll (1988) and Miniskey (1992) on this crash. Then other works examined the crises of emerging countries "the Asian crisis, the Mexican crisis" such as Karyoli and Stulz (1996), Schwebach et al (2002), they underlined the stake of the strategy of international diversification in a context revived by rather strong financial disturbances.

As a result, the second line of research studied the effectiveness of this strategy and evaluated the expected gains from international diversification.

Thus, the research focused on developed markets and especially on the emerging markets of East Asia, Latin America and Central Europe with studies by, (Middleton et al (2008), Robert G. Bowman, Kam Fong Chan and Matthew R. Comer (2010), Jacek Niklewski and Timothy Rodgers (2011) and Robert Vermeulen (2013).

The conclusion drawn from this strand of research is that with the growth of comovements between developed and emerging markets and the frequent emergence of financial crises that characterize East Asia, Latin America, and Eastern Europe, the investor should target other emerging markets that provide advantages in managing their portfolio.

Recently, the MENA region has been under the scrutiny of some works in order to measure the potential profit of diversification that it can offer to foreign investors, such as Abraham et al (2001), Simon Neaime

(2005,2012), Lagoarde-Segot et al (2007), Cheng et al (2010), Dağli, H et al (2012) and Balcılar, M et al (2015).

In our turn, in our empirical investigation, we are interested in eight MENA countries (Tunisia, Morocco, Egypt, Turkey, Jordan, Saudi Arabia, United Arab Emirates), three developed countries (United States, Great Britain and France) and the world market, with the objective of measuring the degree of integration of each MENA country in our sample with the world market and to answer the following question: For a foreign investor, are the MENA stock markets advantageous in terms of diversification gain in a context revived by crises?

To achieve this objective, a literature review on international diversification during financial crises will be presented in a first section, as well as an empirical study of the impact of the subprime crisis on MENA stock markets in terms of portfolio management performance which will be the subject of a second section.

II. Literature Review

Roll (88) showed that during the crash 87 all stock prices of 23 global financial markets studied have sharp declines around 20% per month, similarly the correlations between countries are mainly positive but moderate in size.

Minskey (1992) examined the same crisis by finding that the crash can have a major impact on the architecture of financial markets, he indicated that the crisis has sown the seeds of structural changes across international financial markets.

As a result, the studies of Longin and Solnik (95), Solnik (97), Karolyi and Stulz (1996), Kronor and Ng (1998) Groslambert (2000) have highlighted the increase in correlations of stock market indices during periods of crisis marked by a strong movement of volatility.

Garnaut (1998) argued that the Asian crisis had a major structural impact on the financial architecture of the region through the increase in the degree of correlations.

Schwebach et al (2002) confirmed this result and indicated that correlations between countries increased from 0.18 to 0.274 during the first phase of the crisis and from 0.451 to 0.531 during the second phase, the same results are also affirmed by Bekaert et al (2005).

All these results call into question the effectiveness of international diversification strategy.

Thus, Wan-juin Paul chiou (2008) examined the comparative benefits of international diversification through the analysis of the indices of 21 developed countries and 13 developing countries over a period from January 1988 until December 2004.

To properly assess the gains of international diversification, two simple measures are used, the increase in the risk-adjusted premium by investing in the maximum risk-adjusted return portfolio and the reduction in volatility by investing the minimum variance portfolio on efficient international frontiers.

The empirical results suggest that investors in less developed countries, particularly East Asia and Latin America, benefit from regional and international diversification more than those in developed countries. The study found that the absolute values of the gains are reduced over time due to the integration and financial crises of the international financial market.

However, (Middleton et al (2008) they showed that the opportunities to invest in emerging markets of Central Europe are still significant, even in times of financial crisis.

Lagoarde-Segot, T et al (2009) tested the contagion between the G7 markets through the study of stock market linkages in order to identify the benefits of international diversification, their results show that during periods of turmoil the interdependence is increased but despite this context the benefit is still there for fund managers in these markets, it seems to be robust to strong changes in volatility

Robert G. Bowman, Kam Fong Chan, and Matthew R. Comer (2010) examined the response of global equity markets to the 1997 Asian crisis. The study included 39 countries a portfolio of 17 emerging countries, and a portfolio of 22 developed countries.

They showed that the correlations of returns in the countries during the Asian crisis was increased dramatically. This indicates that the benefits of international diversification were significantly reduced, but not necessarily eliminated, during the crisis. Following the crisis, they found that correlations declined, but not to the pre-crisis level, so the benefits of international diversification are available, but they are diminished.

Jacek Niklewski and Timothy Rodgers (2011) sought to answer the crucial question of whether the changes in financial market architectures caused by the global financial crisis have had a permanent impact on international diversification? As such, they sought to examine the conditional correlations between U.S. equity markets and a number of developed, emerging and frontier markets.

They pointed out that the increase in correlation during and after the crisis has a direct impact on international diversification, such that investing in emerging and frontier markets has become less attractive to international portfolio managers.

Vermeulen Robert (2013) empirically examined during the period of 2001 to 2009, the portfolios of international investors before and during the global financial crisis for 22 countries. The results indicate that during the crisis international investors rebalanced their portfolios towards the less correlated markets.

Moreover, the author emphasized that the most important thing here is not the diversification in silk but

the diversification where investors manage to hang less correlated stocks when the market situation is very volatile.

However, the question of expected gains from international diversification remains understudied for certain regions such as the Middle East and North Africa: MENA.

Some works have explored this area in order to identify for the international investor the existing opportunities to diversify his portfolio on these markets.

Indeed, Ali F. Darrat et al (2000) examined the degree of integration of three stock markets: Morocco, Jordan and Egypt, using the causality tests of Granger (69) and the cointegration tests of Johnson (88).

They showed that these emerging countries are globally segmented and regionally integrated which means that these studied MENA markets offer diversification potential for international investors.

Abraham et al (2001) selected three oil-producing markets in the Gulf region for a period from 1993 to 1998, with the aim of assessing the substantial benefits of diversification in these markets.

Indeed, using the mean-variance paradigm of Markowitz (59), they highlighted a low correlation of returns between these markets studied and the They indicated that the allocation of funds can be extended up to (20-30%) into the U.S. equity markets, which offers an important opportunity for investors to integrate securities from these markets into their portfolios to enhance returns and reduce risk.

They indicated that the allocation of funds can be extended up to (20-30%) in the stock markets.

In (2003), Assaf selected six Middle Eastern stock markets: Bahrain, Kuwait, Oman, Saudi Arabia and the Emirates, similarly Hassan et al studied ten markets in this region and this was to examine the correlations between these markets.

They pointed out that the benefit of diversification is significant; some markets have low correlation with others and thus may be a better choice to reduce the risk of a regional investment portfolio.

Simon Neaime (2005) examined the integration of seven MENA markets with each other and with major global stock exchanges. Johnson's cointegration tests indicate that the GCC (Gulf Cooperation Council) stock exchanges still offer international investors potential for portfolio diversification.

Thomas et al (2005), using the cointegration method to examine the financial structure of the MENA region and their implication on international portfolio management, showed that the long-term correlation of these markets with the European as well as the US market is not stable. This indicates the existence of an opportunity to diversify the asset portfolio for the three categories of investors.

In (2007), the same authors examined the issue of international diversification this time on seven stock markets in the MENA region "Morocco, Tunisia, Egypt, Jordan, Lebanon, Turkey and Israel".

They constructed international portfolios in both dollars and local currencies for a period from 1998 to 2006, their results highlighted the presence of remarkable diversification benefits in the MENA region.

Cheng et al (2010) studied the return behavior of nine stock markets in the MENA region namely "Bahrain, Egypt, Israel, Jordan, Kuwait, Morocco, Oman, Saudi Arabia, and Turkey" by using different variants of CAPM.

They conducted a comprehensive empirical analysis on the dynamics of returns and risk in the MENA region, overall they found that the markets of Turkey and Israel are the most integrated with the global market, their results suggest that investing in most of the Arab markets in the MENA region for the period of study provides uncorrelated returns with the global market, thus an opportunity of profit by exercising international diversification in these markets.

Mansourfour et al (2010) divided the MENA region into two groups "oil producing countries" and non-oil producing group, in order to examine the role of each group in the benefit presented to international investors in terms of international diversification.

The results of this study indicate that oil-producing countries offer more advantageous opportunities for international portfolio diversification than the countries in the second group

However, during the global financial crisis in 2008 the returns in these markets collapsed.

Neaime (2012) in this study the author analyzed the impact of the global financial crisis 2007-2008 on the emerging markets of the MENA region, through the examination of financial linkages between the markets of the MENA region and the most developed financial markets as well as the intra-regional linkages between the financial markets of the MENA countries among themselves.

Thus, through a detailed examination of financial integration in seven stock markets in the MENA region namely: Egypt, Jordan, Morocco, Tunisia, Kuwait, Saudi Arabia, and the Emirates with France, Great Britain, and the United States, while taking into consideration the volatility in these markets as well as the phenomenon of contagion during the period of the financial crisis, Simon Neaime showed that the stock market of Saudi Arabia is the market least affected by the global financial shock and still offers opportunities for portfolio diversification, while the markets of non-oil producing countries offer less opportunities for diversification.

Michael et al (2013) took by study the stock market comovements of the MENA region; "Egypt, Jordan, Saudi Arabia, Kuwait, Quater, Emirates" with the US market and between them for a period of 9 years from 2002 to 2010.

The results show that there is a modest degree of correlation between the MENA region and the U.S. market which implies opportunities for diversification in the near term.

Houseyin et al (2013) conducted an empirical study on emerging markets in Europe, the Middle East and Africa to identify the benefits of international diversification among the markets of the Czech Republic, Egypt, Hungary, Morocco, Poland, Russia, South Africa and Turkey.

Using, Johansen's (1988) cointegration tests for a period from 1994 until 2010, they showed the existence of cointegration relationships between most of these markets with a finding that the benefits of portfolio diversification in these markets are limited for investors.

Mehmet Balcilar et all (2015) examined the opportunities for international diversification in the stock markets of GCC countries, some countries show segmentation with the global market during periods of disruption and thus can offer diversification opportunities despite the crisis environment.

Mouna Boujelbene et all (2015) conducted an empirical investigation on developed and emerging Islamic stock markets "European, Asian, North American, MENA and Latin American markets, with the aim of examining the benefits of international diversification during quiet and disruptive periods.

Their study using the multivariate cointegration test highlights that Islamic stock market movements are partially segmented, in addition the level of integration between markets tends to change over time especially during periods characterized by financial crises.

Their results suggest that Islamic Shariah-compliant assets may offer potential diversification benefits, a finding that has important implications for the design of investment strategies for investors who wish to diversify their portfolios especially during periods of crisis.

In sum, the works that are interested in the study of the dynamics of the gains expected from international diversification as a function of integration, they have ignored the exchange rate risk, in other words, they have assumed that investors do not hedge their exposure to exchange rate risk, so that the price of exchange rate risk is equal to zero, as is the price of local market risk "Giovannini and Jorion (89), Harvey (91), Chan et al.

The same approach was adopted by the works that considered the effect of financial crises "Roll (88), Rahm and Yung (94), Hamao et al (90), Arrouri and Jawadi (2011), Kenourgios et al (2011).

In addition, according to the literature review presented on the issue of international diversification for stock markets in the MENA region, we can see that the period of study is always short, the results of work are heterogeneous and fail to decide between the existence or nonexistence of opportunities for international diversification on the MENA region.

Also, the basic model; "the model of De Santis and Gerard (97)" which was adopted by the majority of previous works to identify the gains of international diversification is based on the assumption of perfect financial integration, however the reality on the financial markets that they are in a situation of partial segmentation, and this after the previous works of Bekaert and Harvey (95,97), Karolyi and Stulz (2002), Dumas et al (2003), Bar and Pristley (2004).

III. Methodology

Our contribution at this stage consists in applying a conditional CAPM that takes into account in addition to the global market risk; the specification of the degree of integration of the studied markets, the assessment of the exchange rate risk as well as the local market risk. In order to study the effect of financial crises on the evolution of financial integration of national markets in the MENA region with the global market as well as with the three selected developed markets namely France, Great Britain and the United States and thus to examine the possibilities of portfolio diversification for international investors in this region.

So the methodology adopted for this line of research consists in testing a conditional version of MEDAFI of De Santis and Gerard (97), by admitting a specification of a multivariate GARCH process (MGARCH).

a) The Dynamic Version of CAPM

In a context of perfect financial integration in the financial markets and with the PPP hypothesis verified, the international extension of the CAPM of Sharpe (64) and Linter (65) presented by Adler and Dumas (83), Solnik (77), Stulz (81), De Santis and Gerard (97) and others, can be written as follows

$$E(R_{it} / \Psi_{t-1}) - R_{ft} = \beta_{im,t-1}\left[E(R_{mt} / \Psi_{t-1}) - R_{ft}\right] ; \forall_i \quad (1)$$

$$\text{With } \beta_{im,t-1} \equiv \frac{\text{cov}(R_{it}, R_{mt} / \Psi_{t-1})}{\text{var}(R_m / \Psi_{t-1})} \quad (2)$$

This is the variable sensitivity of security i to the market portfolio m..

R_{it} : The variable profitability of security i between (t-1) and t

R_{ft} : The return on the risk-free asset between (t-1) and t..

R_{wt} : The return on the global market portfolio between (t-1) and t.

All expectations are made conditional on the information vector available at time t-1.
Equation (1) can be rewritten as follows:

$$E(R_{it} / \Psi_{t-1}) - R_{ft} = \delta_{m,t-1} \operatorname{cov}(R_{it}, R_{mt} / \Psi_{t-1}) \ \forall_i \quad (3)$$

$$\text{With} \quad \delta_{t-1} \equiv \frac{E(R_{mt} / \Psi_{t-1}) - R_{ft}}{\operatorname{var}(R_m / \Psi_{t-1})}$$

This is the world market covariance risk price over time.

Relationship (3) is the most widely used formulation in empirical asset pricing work, and implicitly assumes that financial markets are integrated in a way that the market risk price equals zero; investors are not exposed to currency risk.
Implications for international portfolio diversification.

In what follows, we will examine the implications of relationship (3) for international portfolio diversification.

Thus, let us consider two portfolios that present the same risk, the first one is internationally diversified noted I and the other one is purely domestic noted i. The CAPMT relationship described in equation (3) allows us to calculate the expected return on each of these portfolios.

The difference between the two expected returns can be interpreted as the ex-ante gain from international portfolio diversification (the benefit generated by holding international stocks).
This gain can be expressed as follows:

$$E(R_{It} - R_{it} / \Psi_{t-1}) \quad (4)$$

According to Black's (1972) separation theorem, portfolio profitability can be written as a form of a linear combination between the risk-free asset and the market portfolio $R_I = \theta_{t-1} R_{mt} + (1 - \theta_{t-1}) R_{ft}$, where θ is the measure of risk aversion

Thus, the excess return of the portfolio I is expressed as follows:

$$E(R_{It} / \Psi_{t-1}) - R_{ft} = \delta_{m,t-1} \operatorname{cov}(\theta_{t-1} R_{mt}, R_{mt} / \Psi_{t-1}) = \delta_{m,t-1} \theta_{t-1} \operatorname{var}(R_{mt}, / \Psi_{t-1}) \quad (5)$$

The excess return of portfolio i is expressed as follows:

$$E(R_{it} / \Psi_{t-1}) - R_{ft} = \delta_{m,t-1} \operatorname{cov}(R_{it}, R_{mt} / \Psi_{t-1}) \quad (6)$$

Since both portfolios have the same risk, the positive coefficient can be deduced from the following system.

$$\operatorname{var}(R_{it} / \Psi_{t-1}) = \operatorname{var}(R_{It} / \Psi_{t-1}) \quad (7)$$

$$\operatorname{var}(R_{It} / \Psi_{t-1}) = \theta_{t-1}^2 \operatorname{var}(R_{mt} / \Psi_{t-1}) \quad (8)$$

$$\text{Let} \ \theta_{t-1}^2 = \frac{\operatorname{var}(R_{it} / \Psi_{t-1})}{\operatorname{var}(R_{mt} / \Psi_{t-1})} \quad (9)$$

According to equations (5) and (6), the gain of international diversification for a domestic investor according to the conditional version of the CAPM is given by the following relation:

$$E(R_{It} - R_{it} / \Psi_{t-1}) = \delta_{m,t-1} \left[\theta_{t-1} \operatorname{var}(R_{mt} / \Psi_{t-1}) - \operatorname{cov}(R_{it}, R_{mt} / \Psi_{t-1} \right] \quad (10)$$

A first intuition can be drawn from equation (10) by taking the particular case $\theta = 1$

$$E(R_{It} - R_{it} / \Psi_{t-1}) = \delta_{m,t-1} \left[\operatorname{var}(R_{mt} / \Psi_{t-1}) - \operatorname{cov}(R_{it}, R_{mt} / \Psi_{t-1} \right] \quad (11)$$

Relation (11) presents the measure of portfolio diversification gains developed by De Santis and Gérard (97) for the case of the American investor, which is a special case of (10), according to their relation market i has the same portfolio risk of the world market at each point in time.

According to the relation (10), the expected gains from portfolio diversification are an increasing function of the price of the world market risk and the quantity of the specific risk considered.

However, our contribution at this level of research consists in developing a conditional version of the FEM which allows on the one hand to measure the expected gains from international diversification and on the other hand it must take into account other factors in addition to the global market risk.

The factors that are ignored by previous studies precisely in this topic, namely: the exchange rate risk, the local market risk and the specification of the degree of integration.

In this regard, the use model developed by Fatma Khalfallah (2023) is appropriate at this level.

Thus, our version of conditional CAPM presents a mixed relationship between the price of market risk, exchange risk and domestic market risk and a measure of degree of financial integration is as follows:

$$E(R_{it}/\Psi_{t-1}) - R_{ft} = \phi^{i}_{t-1}\left[\delta_{m,t-1}\operatorname{cov}(R_{it}, R_{mt}/\Psi_{t-1}) + \sum_{c=1}^{L}\delta_{c,t-1}\operatorname{cov}(R_{it}, R_{ct}/\Psi_{t-1})\right] + \left(1-\phi^{i}_{t-1}\right)\left[\delta_{i,t-1}\operatorname{var}(R_{it}/\Psi_{t-1})\right] \quad (12)$$

Thus the model application of equation (12) for equations (5) and (6) is as follows.

For equation (5), the excess return on the portfolio I that is internationally diversified is written as a function of market risk and currency risk:

$$E(R_{It}/\Psi_{t-1}) - R_{ft} = \left[\delta_{m,t-1}\operatorname{cov}(\theta_{t-1}R_{mt}, R_{mt}/\Psi_{t-1}) + \sum_{c=1}^{L}\delta_{c,t-1}\operatorname{cov}(R_{mt}, R_{ct}/\Psi_{t-1})\right]$$

$$= \delta_{m,t-1}\theta_{t-1}\operatorname{var}(R_{mt}/\Psi_{t-1}) + \sum_{c\ 1=}^{L}\delta_{c,t-1}\operatorname{cov}(R_{mt}, R_{ct}/\Psi_{t-1} \quad (13)$$

For equation (6), the excess return of portfolio i that is purely domestic is written as a function of market risk and local market risk and a measure of degree of integration:

$$E(R_{it}/\Psi_{t-1}) - R_{ft} = \phi^{i}_{t-1}\left[\delta_{m,t-1}\operatorname{cov}(R_{it}, R_{mt}/\Psi_{t-1}) + \left(1-\phi^{i}_{t-1}\right)\left[\delta_{i,t-1}\operatorname{var}(R_{it}/\Psi_{t-1})\right]\right] \quad (14)$$

Thus, according to equations (13) and (14), the gain from international diversification according to the conditional version of the CAPM is given by the relation (15)

$$E(R_{It} - R_{it}/\Psi_{t-1}) = \delta_{m,t-1}\left[\theta_{t-1}\operatorname{var}(R_{mt}/\Psi_{t-1}) - \phi^{i}_{t-1}\operatorname{cov}(R_{it}, R_{mt}/\Psi_{t-1})\right] +$$

$$\left[\sum_{c=1}^{L}\delta_{c,t-1}\operatorname{cov}(R_{mt}, R_{ct}/\Psi_{t-1} - \left(1-\phi^{i}_{t-1}\right)\delta_{i,t-1}\operatorname{var}(R_{it}/\Psi_{t-1})\right] \quad (15)$$

Then, relation (15) shows that the expected gain from international diversification strategies is determined as a function of the price of market risk, the amount of country-specific risk considered with a measure of the degree of integration

$$\operatorname{var}(R_{mt}/\Psi_{t-1}) - \phi^{i}_{t-1}\operatorname{cov}(R_{it}, R_{mt}/\Psi_{t-1})$$

the price of exchange rate risk $\delta_{c,t-1}$ and local market risk $\delta_{i,t-1}$

b) The Data

Our study focuses on the economies of the MENA region, with data for the following countries: Tunisia, Morocco, Egypt, Turkey, Jordan, Saudi Arabia, the United Arab Emirates United Arab Emirates, France, Great Britain, the United States, and the global market. Then, four groups of data are considered: the monthly return series market as well as the world market, the series of real exchange rates expressed in US dollars exchange rate series expressed in U.S. dollars, the financial and macroeconomic variables used to macroeconomic variables used to condition the estimates of risk prices and the instrumental variables related to the degree of related to the degree of integration.

c) The Yield Series

The observations used are monthly end-of-period prices from January 1995 to December 2013 for Morocco, Egypt, Turkey and Jordan, and from May 2005 to December 2013 for Tunisia, Saudi Arabia and the United Arab Emirates.

Market prices are taken from Morgan Stanley Capital International.

(MSCI), and the market portfolio is approximated by the MSCI world index 25, these market returns are expressed in dollars and adjusted by dividends.

d) Real Exchange Rate Series

The monthly real exchange rates are expressed in terms of the U.S. dollar 27, and are taken from Interntaional Financial are extracted from Interntaional financial statictic (IFS) and obtained by subtracting nominal exchange rates exchange rates by the consumer price indexes (CPI).

e) Global and Local Instrumental Variables

The instrumental variables are used to condition estimating the prices of market risk, currency risk and risk local, like Hardouvelis et all (2006) and Carrieri and All (2007) we retain the following factors to condition estimating the prices of market risk and foreign risk:

- The monthly change in dividend yield (dividend to price ratio) of the world market portfolio (MSCI world index) over the 30-day eurodollar interest rate (DRMDV)
- The monthly change in the premium term, it's the difference between a long interest rate (10 years us treasury notes) and short rate (3 months us treasury bills) (DEPTERM)
- The monthly change in the short term interest rate (3 months us treasury bills) (DSHORT).
- The monthly change in the S&P's 500 stock market index (RSP)
- A constant term

All these information variables are extracted from the international datastream database and are used with a lag behind the series of excess returns.

For the risk of the local market of each country, we use the following set of information variables is determined by previous studies like Bekaert and Harvey, 1995; Gerard et al., 2003)

- A constant term
- The monthly change in the excess stock returns of each country (DRD)
- The monthly change in 1-month interest rate (DSHORT)
- The monthly change in the regional inflation rate (VIR)
- 4- the instrumentals variables of financial integration

The degree of financial integration for each country is affected by some economic financial and sociopolitical factors at the local and international level. It is, therefore, necessary to identify the determinants of the degree of financial integration. To this end, we use the following variables information

- *DGDP:* Each country's Gross domestic product (GDP) in volume, which is considered the most appropriate instrument to identify the level of integration by Carrieri et al. (2007) and Bhattacharya and Daouk (2002).
- *INRD:* The interest rate differential between the US market and the local market, this variable reflects the convergence of these emerging markets to the global market
- *INFD:* The differential between the rate of inflation in each local market and the US, this variable highlights the volatility of exchange rates of the local currency and provides information on the investment costs and consequently the advantage of diversification

Table 1: Anticipated Gains from International Diversification of MENA Markets for the Period 05-2005 to 12-2013 (%)

	With the World Market	With the French Market	With the British Market	With the American Market
Egypt	1.561 (1.2795)	1.9299* (1.2909)	1.8199* (1.1794)	2.009* (1.1905)
Emirates	2.4695* (0,2876)	2.8905* (0,3806)	2.155* (0,1887)	2.305* (0,1437)
Jordan	3.8351* (0,1117)	4.491* (0,2117)	3.9075* (0,1001)	4.101** (0,123)
Morocco	3.8479** (0,1776)	3.201** (0,2228)	3.9978** (0,1476)	6.001** (0,0869)
Saudi Arabia	3.607* (0,6223)	4.5071*** (0,7023)	4.0171* (0,4988)	3.9891* (0,7117)
Tunisia	5.021*** (0,0889)	6.331** (0,0569)	5.906*** (0,0780)	7.122*** (0.033)
Turkey	1.132 (2,3441)	2.0021 (2,0441)	1.977 (2,2911)	2.881 (2,0001)

** Significant at the 10% level, ** Significant at the 5% Level, *** Significant at the 1% level, (.) Standard Deviation is Reported in Parentheses.*

According to Table 1, the results show a statistically and economically significant advantage of international diversification for all the markets studied with the global market, the French market, the British market and the American market except for Turkey.

Indeed, over the period of study, Egypt the most correlated with the global market with an average correlation of 62% has the lowest average annual profits 1.56%, the same finding with the French market, British and American; the strongest correlation with a low potential diversification that does not exceed 2%.

On the other hand, Tunisia the least correlated market with the global market, the French market, the British market and the U.S. market with respective average correlations (32%, 31%, 32%, 31%) and presents the highest profits of diversification (5%, 6.33%, 5.9%, 7.12%) .

Morocco presents a diversification gain for the American investor of 6% and around 4% with the world, French and British markets with an average correlation of 40% with all these markets. The same result is also found for Jordan with very close values for the correlation as well as the gains of international diversification.

For the Gulf countries, Emirates and Saudi Arabia have a correlation at the turn of 50% and 40% with the world market as well as with the other developed markets, they present significant diversification gains on average of 2.5% for Emirates and at the turn of 4% for Saudi Arabia.

The results reported in this table of the evolution of diversification gains, indicate that the estimated gains of international portfolio management have significantly decreased during the crisis phase, contrary to the opinion among financial experts and academics.

Indeed, the anticipated gain of Egypt's diversification with the world market and developed markets presents oscillations with positive and negative values that explains the low potential of diversification, a sharp drop is recorded twice; (-25%) during the crisis phase 2007-2009 and (-28%) during the revolution period 2010-2011.

For Morocco, the profit values are more important before the crisis period, at the time of shock the gains noted a considerable fall (-13%), this result valid with the world market, French, British and especially with the American market the gains remained slightly weak until the end of the period of study and this compared to the period before the crisis.

For Jordan, the graph shows a sharp drop of (-23%) between 2008 and 2009 with the world market and the developed markets in our sample. These same findings are also valid for the Saudi and UAE markets with falls of 20% and 27% during the crisis phase.

For Tunisia, the subprime crisis has also affected the gains on this market with a drop in value (-12%) as well as during the period of revolution 2010-2011, this collapse is recorded with the global market, French, British and American.

f) Financial Integration

i. *The Degree of Financial Integration*

Table 2: Estimation of Dynamic Financial Integration

	EGYPT	EMIRATES	JORDAN	MOROCCO	SAUDI ARABIA	TUNISIA	TURKEY
Panel A: Estimation Results of the Degree Of Integration as a Function of The Instrumental Variables							
Cons	-0.099***	-0.0152*	0.022***	-0.0062	-0.106*	0.23	0.0098**
DGDP	-0.0037	0.002	6.7E-04	0.001	0.002	-0.0019	4.8E-04
INRD	0.004	-0.0153*	-0.0065*	0.001	-0.0066	-0.0076	-3.1E-04*
IFRND	0.0756	0.0018	-0.0029**	-0.0045	0.0019	9E-04	2E-04
Panel B: Financial Integration Measurement Statistics							
$\emptyset_{min}$	0.116	0.103	0.098	0.116	0.098	0.003	0.075
$\emptyset_{max}$	0.889	0.913	0.977	0.903	0.9	0.901	0.9
$\emptyset_{moy}$	0.663^{+++}	0.651^{+++}	0.578^{+++}	0.633^{+++}	0.601^{+++}	0.457^{+++}	0.448^{+++}
Std.dev	0.7868	0.00674	0.0089	0.0104	0.00747	0.0011	0.00015

****, **, *: significant degree at 1%, 5% and 10%.*

$^{+++}$, Indicates that the degree of integration is significantly different from zero according to a Student's t test with two degrees of freedom.

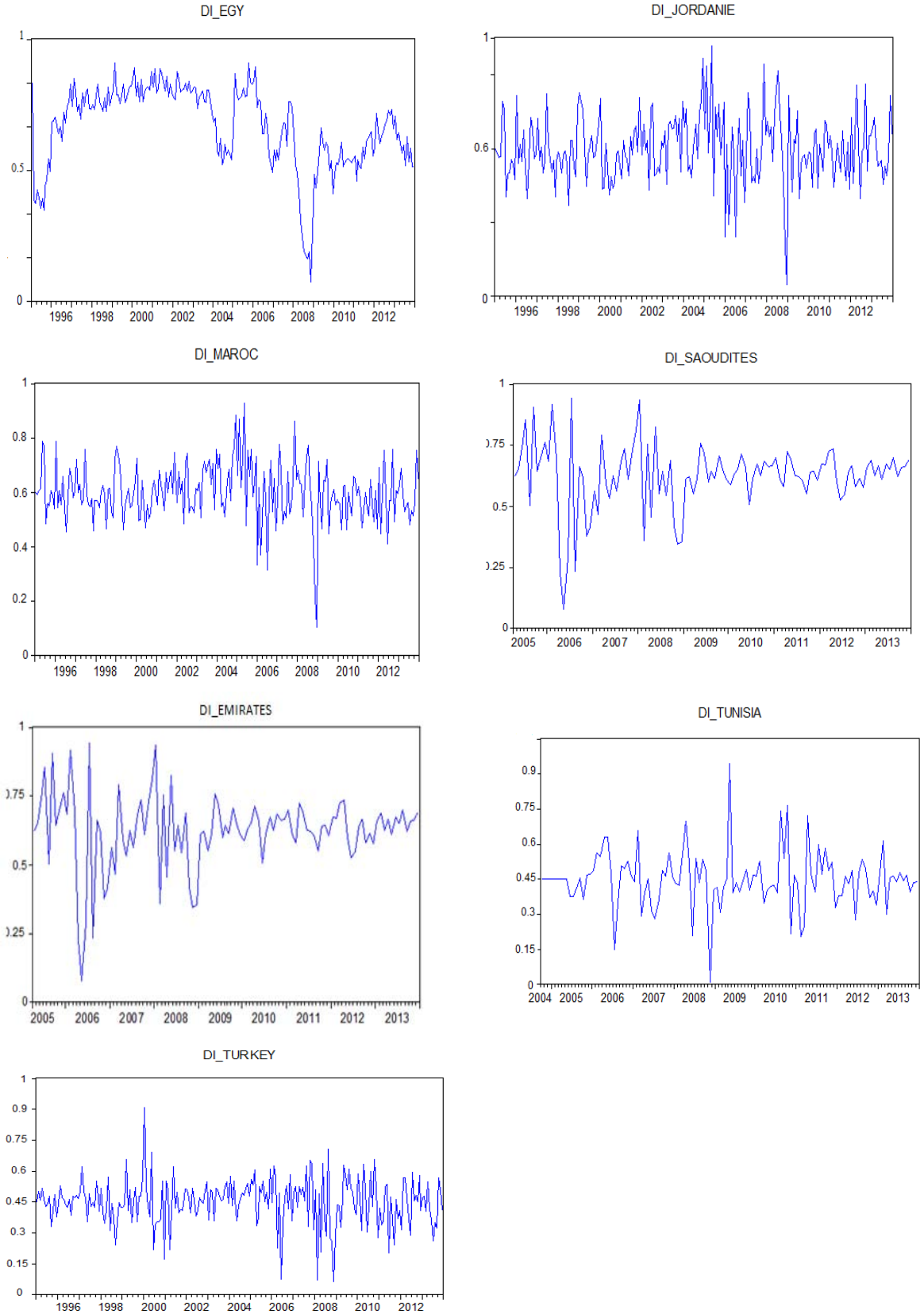
This table reports the estimation results for the financial integration metrics.. $\emptyset_{min}$, $\emptyset_{max}$, and $\emptyset_{moy}$ show the maximum, minimum and average degree of integration respectively. The robust standard deviations are indicated by the Std.dev.

According to the estimation results reported in Table 1 panel A, the dynamics of financial integration in our sample is explained especially by the differential between the local interest rate and that of the US and the differential between the local inflation rate and that of the US.

According to the statistics (panel B), Turkey and Tunisia have the lowest degree of integration with values of 0.448 and 0.457 respectively. They are the least integrated countries in the world market as well as the Jordanian market with a level equal to 0.578.

In contrast, Egypt has the highest average level of financial integration with a value of 0.663. After that, we find the Gulf countries Emirates (0.651) and Saudi (0.601) and Morocco with a value of 0.633.

Our results at this stage are close to the results of Khaled Guesmi et al (2014) who studied the financial integration process of 4 countries in the MENA region (Turkey, Israel, Jordan and Egypt), they also found that Egypt the most integrated market and Jordan is the most segmented.



Graphic 1: The Evolution of the Level of Financial Integration

Graphic 1 traces the evolution of the level of financial integration of seven MENA markets with the global market and shows that this integration is not homogeneous. According to the chart, Egypt is the most integrated market with a threshold of 85% during the period 1998-2000, after which the level dropped to around 70% for the rest of the period.

For the Emirates, their degree of integration with the global market has experienced two peaks during the year 2005 and the year 2010 with a level of 90%. The same thing for Saudi Arabia has experienced a financial integration rate between 2006 and the end of 2007 with a value that reaches a threshold of 85%.

This upward trend can be explained by the increase in investment capital flows to these countries.

Turkey, Tunisia and Jordan show the lowest level of integration with an average rate of 50% during the study period. However, all of the markets studied experienced a considerable drop during the 2007-2008 period.

This decline is due to the impact of the subprime crisis on these markets and on the global market in general.

In sum, an upward trend then is recorded when examining the dynamics of financial integration in MENA markets. In what follows, we will conduct a comparative analysis between financial integration and conditional correlation in order to confirm these results.

ii. *Measure of Integration Versus Conditional Correlation*

Table 3: Statistics of Conditional Correlations

	EGYPT	EMIRATES	JORDAN	MOROCCO	SAUDI ARABIA	TUNISIA	TURKEY
ρ_{min}	0.786	0.397	0.298	0.3	0.177	0.477	0.455
ρ_{max}	0.813	0.925	0.901	0.887	0.947	0.937	0.803
ρ_{moy}	0.801***	0.831***	0.723***	0.697***	0.733***	0.788***	0.701***

ρ max., ρ min. and ρ moyenne mean are the maximum, minimum and mean correlation coefficients, which are obtained from the multiple bivariate DCC-GARCH processes.
**** indicates that the coefficient in question is significantly different from zero.*

The purpose of correlation estimation is to provide conditional investors with a complete picture of the actual financial and economic situation in each market.

Since the correlations approach is a technique for measuring financial integration that has been applied by previous works "Longin and Solnik (1995), Kroly and Stulz (1996), Manuel and Croci (2004). However, the appeal to the simple calculation of conditional correlations does not allow us to affirm this purpose, which justifies the use of instrumental variables of financial integration "Dumas et al (2006), Carrieri et al (2007) ".

The examination of this observation is presented in Table 6, which compares the integration index of each local market to its conditional correlation with the world market. Then the analysis of the statistics shows us that the conditional correlations in sum are more important in terms of values compared to the financial integration index.

Egypt has an average correlation coefficient of 0.801 against an average degree of integration 0.663. Similarly, for Emirates, Jordan, Saudi Arabia, Tunisia and Turkey.

However, an almost small gap is observed for Morocco 0.697 against 0.633.

To summarize, the dynamics of conditional correlations show an overestimation of the degree of integration of the markets studied, so our results confirm the questioning of the relevance of the correlation technique as an index of financial integration.

IV. Conclusion

The conclusions drawn from the literature indicate that the framework of financial crises, which is characterized by strong interdependence between financial markets and high volatility, is a major concern for the investor seeking international portfolio diversification.

Thus, with the growth of co-movements between developed and emerging markets and the frequent emergence of financial crises that characterize East Asia, Latin America and Eastern Europe, the investor should target other emerging markets such as MENA countries.

The appreciable profits realized by the strategy of international portfolio diversification have been detected by the works of Markowitz (52), Grubel (1968),

Levy and Sarnat (1972), Solnik (1974) and Hilliard (1979).

In addition to these classic works, a group of studies have explored the benefits of portfolio diversification among developed markets as well as emerging countries such as Harvey (91), Campbell and Hamao (1992), Odier and Solnik (93), Solnik (95) Gerke et al (2005), Markellos and Siriopoulos (1997), Rezayat and Yavas (2006), Chiou (2008), Chonghui jiang et al (2010).

During periods of financial crisis the results found by several studies question the effectiveness of international diversification strategy. Garnant (1998) Schwebach et al (2002) Middleton et al (2008), Robert G. Bowmana, Kam Fong Chan and Matthew R. Comer (2010) RG Bowman et al (2010) Robert vermenh (2011).

For the MENA region the axis of work that has been conducted is oriented towards the objective of seeking opportunities of international diversification for the international investor in these markets following the example of Darrat et al (2000) Abraham et al (2001) 2003), Assaf Simon Neaime (2005) Thomas et al (2005 (2007), Cheng et al (2010 Mansourfour et al (2010) S. Neaime (2012) Graham et al (2013) Houseyin et al (2013), Mehmet Balcilar et al (2015).

However, the classical and recent works on this topic there in times of crisis and non-crisis have carried some limitations in their basic strategies. Indeed, the assumption of the absence of hedging to international investment has made ignore the exchange rate risk in the modeling as well as the local risk.

In addition, most of the works have adopted only the assumption of perfect financial integration in the financial markets when studying the expected gains from international diversification.

In this regard, our contribution to the literature has sought to test a conditional version of CAPMFI that includes both in addition to global market risk, foreign exchange risk and local market risk in order to identify the potential of diversification that offers MENA countries for investors and their significance in times of crisis with a consideration of the specification of degree of integration of markets studied.

Then, our results indicated that the anticipated gains from diversification sought in MENA markets are present and significant during the study period with temporary absence during the mortgage crisis phase for all the studied markets and during any period of political disturbance, the case of revolution for Egypt and Tunisia.

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The Impact of Solvency Risk and Asset Quality Risk on the Asset Size of Commercial Banks (An Applied Study on Samples of Commercial Banks Registered on the Iraqi Stock Exchange 2011-2020)

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Abstract- Assets are economic resources owned by a bank, in the form of tangible or intangible properties that are suitable for repaying debts. In other words, assets are those that can be easily converted into cash within a specific time period. Bank assets must be hedged against numerous risks. This study aims to investigate the impact of solvency risks and asset quality risks on the assets of commercial banks by measuring and analyzing the identified study variables. This study addresses the problem of asset loss in commercial banks, whether fixed or liquid, and offers solutions towards attracting prospective investors and retaining current ones via asset preservation and increment. Researchers can also benefit from this study in terms of variable measurements and key concept identification. The study samples entailed the Commercial Bank of Iraq (BCOI) and the National Investment Bank (BNOI) over the study period from 2011 to 2020.

Keywords: risk solvency, asset quality risk, and commercial banks.

GJMBR-D Classification: UDC: 336.71, 336.713, 336.717

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Mustafa Razzaq Flayyih [α], Mohamed Hassan Wadi [σ] & Hasanain Salim Rasheed [ρ]

Abstract- Assets are economic resources owned by a bank, in the form of tangible or intangible properties that are suitable for repaying debts. In other words, assets are those that can be easily converted into cash within a specific time period. Bank assets must be hedged against numerous risks. This study aims to investigate the impact of solvency risks and asset quality risks on the assets of commercial banks by measuring and analyzing the identified study variables. This study addresses the problem of asset loss in commercial banks, whether fixed or liquid, and offers solutions towards attracting prospective investors and retaining current ones via asset preservation and increment. Researchers can also benefit from this study in terms of variable measurements and key concept identification. The study samples entailed the Commercial Bank of Iraq (BCOI) and the National Investment Bank (BNOI) over the study period from 2011 to 2020. The study employed the descriptive analytical method in describing, measuring and analyzing the data derived from actual financial data available in search for sample pools. The data analysis was subsequently carried out using the SPSS version 26 program. This study reached the conclusion that solvency risks generally have a negative association with the size of assets, while asset quality risks have a positive and direct relationship with the size of assets. The study then offered several recommendations, including that commercial banks should prevent violations and reduce non-performing loans, as well as ensure on-time loan repayments with benefits, thus raising their rating. In addition, commercial banks should work to obtain the expected returns or benefits on an ongoing basis, and increase the size of their assets. Addressing customer inquiries in a timely manner would also ensure customer satisfaction.

Keywords: risk solvency, asset quality risk, and commercial banks.

I. Introduction

Banks are closely linked to economic growth, accelerating it through the mediating role of the financial services they provide. Therefore, the stability of the banking sector is a precondition for economic growth and firmness. The sector's stability depends on the size of its assets which in turn is determined by profitability and capital adequacy as employed in its secured loans, thus leading to greater investments (Ekinci & Poyraz, 2019).

The financial stability of the economy depends to a large extent on the stability and flexibility of the banking system. To achieve banking stability, banks have to maintain high-quality banking assets that help in the achievement of a similar volume of assets. Failure to ensure bank stability can cause financial fragility and may lead to crisis scenarios in the event of market illiquidity and/or bank contagion (Velliscig et al., 2021).

The banking sector is considered one of the most important economic sectors and the most sensitive to changes, which in turn exposes it to various risks due to its dynamic structure and the complex nature of the economic environment. The risks faced by banks can be classified into several categories including solvency risks, asset quality risks, and others (Larya & et al., 2016). The main source of income for the banking sector generally consists of loans granted by commercial companies and banks, which come along with solvency risks and asset quality risks. The Basel identifies the asset quality risks of the Banking Supervision Committee, including the possibility of partial or total loss of the loan outstanding due to failure to repay in a timely manner. An increase in asset quality risk increases the marginal cost of debt and equity, and subsequently the cost of bank financing. As the bank's exposure to asset quality risks increases, the tendency for it to experience financial crisis also heightens (Afriyie & Akotey, 201).

The most prominent of these risks are those related to financial solvency and asset quality owing to the internal banking system which can be controlled and of which can increase or decrease the bank's asset size. This study hence focuses on the impact of these risks on the asset size of commercial banks over the 2011-2020 period. Accordingly, the theoretical underpinning of this study incorporates the most important concepts of the study variables. Related mathematical equations and the SBSS program output were used to determine the impact of those risks on the banks' asset size so as

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to address the research problem and achieve the research objective. More specifically, these were achieved by measuring the relationship between the independent and dependent variables, testing the hypotheses, and drawing the key conclusions and recommendations.

II. Review of Literature

a) Solvency Risk

i. *The Concept of Solvency Risk*

Financial solvency refers to the ability and durability of the bank capital in facing the failure of investment operations and the absorption of risks, including non-payment risk and investment value depreciation risk (Gatzert, 2018: 3). Solvency in finance generally refers to the ability the bank's revenues, including its return on investment, to cover various costs (Topak et al., 2017: 576). It also entails the bank's ability to fulfill various obligations without resulting in default and bankruptcy. To do so, the banks need to have sufficient assets which is represented by their ability to pay off due obligations. A bank is deemed to be financially insolvent when its usage exceeds the size of its obligations, leading to its inability to fulfill those obligations (Mehrara et al., 2014: 29). This occurs when the market value of the bank's assets falls to a level lower than the market value of its liabilities, i.e., even after liquidating all of its assets, it is still not able to meet all its liabilities thus leading to the loss of its depositors (Odekin et al., 2019: 109).

b) Asset Quality Risk

i. *Asset Quality Concept*

The quality of assets is determined by the assessment of credit risks such as those related to investment portfolios and loans (Boateng, 2019: 44). The extent to which the management is effective in monitoring credit risk can influence the credit rating. Many factors are taken into consideration when evaluating the quality of assets, including whether the portfolio is adequately diversified, the established rules and regulations to reduce credit risk, the operational efficiency, and so on (Alamirew, 2015: 15).

c) Asset Size

i. *The Concept of Asset Size*

Assets entail the money and resources owned by the bank at a specific time. Most banks rely on assets for the purpose of obtaining internal revenues in the future (Alnakee et al., 2022: 147). This includes the commercial banks' use of their resources (Gibson, 2014: 228) including loans and financial investments. In general, these are expected to result in economic benefits, owned or controlled by the corporation as a result of various events (Clark et al., 2012: 8). The main hypothesis of this research is that "there is no significant relationship between solvency risk and asset quality risk with asset size". This hypothesis is further divided into two sub-hypotheses as follows:

H1: There is no significant relationship between solvency risk and the asset size of commercial banks.

H2: There is no significant relationship between asset quality risks and the asset size of commercial banks.

III. Research Methodology

The study sample consists of two commercial banks listed on the Iraqi Stock Exchange namely the Commercial Bank of Iraq and the National Investment Bank. The study period was between 2011 and 2020. Data collection was conducted using the deductive method, focusing on journals and periodicals. The inductive method was also employed focusing on the final accounts of the sampled banks, involving the usage of mathematical equations for measuring the independent variable (credit risk) and dependent variable (profit quality). Next, statistical analysis was employed to determine the relationship between the variables, followed by the hypotheses testing.

IV. Measuring Variables

a) Measuring Solvency Risk

The financial solvency of a bank is linked to its capital adequacy, as the capital adequacy ratio is one of the most important financial and technical indicators for the financial sector and of which serves as a safety valve for protecting the depositors' money and enhancing investor confidence (Mashkour & Fullyh, 2020: 5028). A higher capital adequacy enables the bank to better maintain its solvency, protect its depositors, and increase the confidence of creditors, depositors and supervisory authorities (Psorn, 2013: 20). The capital adequacy ratio is used to determine the solvency of banks (Aspal et al., 2019: 170). It is calculated in accordance with the requirements of the Basel Committee (III) using the following equation (Mashkour & Fullyh, 2020: 5028):

$$CA = = \frac{TC}{RWA\ (CR+MR+OR)} \times 100\% = 8\%$$

Since:

Abbreviation	Full English Term
CA	Capital Adequacy Ratio
TC	Total Capital
RWA	Risks Weighted Assets
MR	Market Risk
CR	Credit Risk
OR	Operational Risk

The total capital can be calculated by summing both the base capital and the auxiliary capital according to the following equation (Agyapong et al., 2019: 4):

$$TC = CCT1 + SCT2$$

Since:

Abbreviation	Full English Term
TC	Total Capital
CCT1	Tier Capital Core1
SCT2	Supplementary Capital Tier 2

Assets weighted with credit risks is calculated by gathering the assets weighted with credit risks inside and outside the balance sheet, according to the following equation (Salgotra et al., 2015: 57):

$$RWA\ (CR) = WBCRWA + OBCRWA$$

Since:

Abbreviation	Full English Term
CR (RWA)	Risk Weighted Assets
WBCRWA	Within-Balance Credit Risk Weighted Assets
OBCRWA	Off-Balance Credit Risk Weighted Assets

In keeping with the international standards for banking regulation, the Central Bank of Iraq has developed a mechanism for calculating solvency risks. Banks operating in the Iraqi banking sector, except for foreign bank branches, must maintain a percentage of solvency risk not less than 10%. This ratio represents the relationship between the capital base and the assets weighted with specific weights to offset credit risk and risk laborer and market risks (Central Bank of Iraq, 2018: 3).

b) Measuring the Quality of Assets

Credit risk can be interpreted in its broadest sense as the risk of financial loss due to the borrower's failure to cover his obligations. Among the bank's activities in providing credit and others are trading activities and capital markets (Mashkour & Fullyh, 2020: 5031). In most cases, the ratio of loan loss provisions to total loans is used as a variable substitute for measuring credit risk (Alnakee et al., 2022: 147).

Several studies had measured the quality of assets by dividing the provision for loan losses by the total loans, which represents the ability of banks to bear losses from bad loans (Mashkour & Fullyh, 2020: 5031). This study measures the quality of assets by using the following equation (Ekinci et al., 2019: 981):

$$NPLLR = \frac{NPL}{L} \times 100\%$$

Since:

Abbreviation	Full English Term
NPLLR	Ratio Non-Performing Loans to Loans
NPL	Non-Performing Loans to Total Loans
L	Laws

A high ratio signifies a decrease in the quality of assets, which is reflected in the asset size of the bank, due to the increase in the volume of loans subject to non-payment. A low ratio indicates high quality assets; in short, a lower ratio is better for the banks and the banking establishment (Sufian, 2011: 49).

c) Measurement of Asset Size

The assets are arranged in the balance sheet according to the degree of their liquidity. The result for the cycle is determined by the difference between the assets and liabilities in the balance sheet. In the case of dividing the assets from the liabilities at the end of the period, additional assets are realized with the same primary resources. This addition expresses the profits and is recorded positively under liability. To balance it out, it is recorded under negative assets. When the opposite happens, it indicates that the company has the same requirements priority finance less than the assets. This difference expresses the loss, as it is recorded under assets as positive and under liabilities as negative. The size of the assets can be measured according to the equation below (Lucy et al., 2018: 22):

$$AS = L + PR$$

Since:

Abbreviation	Full English Term
AS	Asset Size
L	Liabilities
PR	Property Rights

V. Results and Discussion

a) Quantitative Analysis of the Research Variables

i. *The Results of Measuring Solvency Risk (Capital Adequacy)*

Capital Adequacy Ratio (CAR) is calculated by dividing the total capital in the banks by the total risk-weighted assets using the following equation:

$$CAR = TC/RWA \times \%100$$

Since:

TC= Total Capital

RWA= Total risk weighted assets

Table 1 clarifies the calculation of the capital adequacy ratio for banks, based on the equation above:

Table 1: Comparison of the Capital Adequacy Ratio (CA) Measurement Results (million dinars)

T	Value / Year	TC (1)	RWA (2)	CA (3) = (1/2)
A	Commercial Bank of Iraq			
1	2011	116695	949447072.984	0.012
2	2012	158239	1794987.864	0.088
3	2013	173680	730223.91	0.238
4	2014	232816	76423421.25	0.003
5	2015	322841	3679027.76	0.009
6	2016	309150	2176314.534	0.142
7	2017	292404	180731.682	0.618
8	2018	302004	540572.994	1,789
9	2019	293419	645867.324	2.183
10	2020	281900	776343.312	2.753
Average				0.7835%
B	Al Ahly Investment Bank			
1	2011	52914	164429.46	0.322
2	2012	105417	137403.108	0.767
3	2013	154660	110544.044	1.400
-4	2014	168541	486905.94	0.346
5	2015	286242	155885	1.836
6	2016	294108	149002	1.974
7	2017	306172	153412	1.995
8	2018	312819	165866	1.9
9	2019	269050	90813	2.964
10	2020	274295	189152	1.5
Average				1.5004%

Source: Prepared by the Researcher based on the Final Accounts of the Sampled Banks

As illustrated in Table 1, the capital adequacy ratio (CAR) for the sampled banks varies from year to year, due to the variance in the total capital and the increase or decrease in the risk-weighted assets in relation to the total capital. This ratio shows the extent to which the banks are able to use the total capital in facing losses that may occur as a result of dealing with risky assets; this ratio is called the margin of safety ratio (security margin). The decrease in this ratio indicates a rise in banking risks and vice versa, i.e., an inverse relationship. In addition, there is a direct relationship between the increase in capital adequacy and the increase in total capital. The capital adequacy ratio for the Commercial Bank of Iraq and the Al-Ahly Bank for Investment for the entire research period is greater than the minimum permissible percentage (i.e., 8%) under the Basel Committee Requirements (III). As noted, the ratios increased significantly in the sampled banks, indicating that the banks maintain their financial resources as a result of the risks involved in their investment activities, which prompted them to significantly increase the size of their capital relative to the risk-weighted assets. In short, there is an inverse relationship between the capital adequacy ratio and the risk-weighted assets, whereby an increase in risk-weighted assets indicates a decrease in the capital adequacy ratio and vice versa.

Table 1 shows that the capital adequacy ratio for the Commercial Bank of Iraq reached a higher limit with a percentage of (2.753) in year 2020, at a minimum of (0.003) in year 2014 and an annual average of (0.7835). The increase in the adequacy rate was due to two main reasons: 1) the continuous growth in capital, and 2) the investment policy of the bank, i.e., avoiding

risky investments and directing most of its financial resources to invest in risk-free treasury transfers. As for the National Bank for Investment, the capital adequacy ratio varied in growth for the period between 2011 and 2020. This is due to the continuous growth in total capital for the mentioned period, as the capital adequacy ratio reached a higher limit by (2.964) in year 2019 with a minimum of (0.322) in year 2011 and an annual average of (1.5004). The high adequacy ratio was due to two main reasons: 1) the continuous growth in capital, and 2) the investment policy of the bank, i.e., by avoiding risky investments and directing most of its financial resources to invest in balances in the absolute account with the Central Bank, which is free of risks.

In order to assess the capital adequacy of the sampled banks, the general average of the capital adequacy ratio in the Commercial Bank of Iraq during the research period was (0.7835). This ratio is detrimental as a result of the inverse relationship between the capital adequacy ratio and the financial risks. The Al-Ahly Bank for Investment had the highest average percentage during the research period (1.5004). This increase in capital adequacy ratio above the minimum limits set by the Basel Committee (III) requirements indicates that the banks should follow a conservative investment and credit policy in terms of employing their financial resources. In addition, it expresses the strength of the financial position of the sampled banks in terms of the ability of their capital in facing the risks that they may be exposed to, as well as their ability to cover the possible losses.

ii. *Assets Quality Analysis of the Sampled Banks*

This percentage indicates the poor quality of the assets of the bank and vice versa, that is, when the ratio of non-performing loans to the total loans decreases, the quality of the assets of the bank is good, as calculated using the following equation:

$$AQ = NPL/TL^* \%100$$

Since:

NPL= bad loans

T= total loans

Table 2 below shows the calculation for the asset quality of the sampled banks using the above equation:

Table 2: Comparison of the Asset Quality Risk Calculation Results (million dinars)

T	Value / Year	NPL (1)	T (2)	AQ (3)= (1÷2)
A	Commercial Bank of Iraq			
1	2011	13485	35965	0.37
2	2012	12060	82914	0.15
3	2013	428	2311	0.19
4	2014	1004	3956	0.25
5	2015	2525	7154	0.35
6	2016	8632	9102	0.95
7	2017	19468	29,245	0.665
8	2018	20314	30932	0.65
9	2019	13950	31242	0.44
10	2020	6707	11447	0.59
Average				0.4605%
B	Al-Ahiyinvestment Bank			
1	2011	11910	36973	0.322
2	2012	8828	49054	0.248
3	2013	9129	67493	0.186
4	2014	79,593	115538	0.689
5	2015	176467	165327	1.067
6	2016	81611	184042k	0.443
7	2017	5040	124683	0.04
8	2018	5057	134356	0.037
9	2019	4018	76828	0.052
10	2020	7585	168965	0.045
Average				0.3129%

Source: Prepared by the Researcher based on the Final Accounts of The sampled Banks

It is clear from the table above that the quality of the assets in the sampled banks varies from year to year. This is due to the increase in non-performing loans in addition to the decrease in total loans relative to the non-performing loans. The ratio of non-performing loans to total loans shows the quality of the bank's assets, and subsequently the ability of banks in managing their financial assets. The high ratio of non-performing loans to total loans is evidence of the high percentage of amounts at risk and the failure to collect them. Meanwhile, the decrease in this percentage indicates that the loans had been collected according to their maturity dates. Hence, it is clear that there is an inverse relationship with the quality of assets and a positive relationship with non-performing loans. This means that the ratio of non-performing loans to total loans rises as a result of the rise in non-performing loans, while the rise in the ratio of non-performing loans to total loans is due to the bank's low asset quality. Table 3 indicates the classification of each of the sampled banks:

Table 3: Asset Quality Classification of the Sampled Banks

Bank	Quality of Realized Assets %	Asset Quality Ratio for Rating Arbitration	Overall Rating Percentage	Rating Score
Al-Ahly Investment Bank	4.34%	Less than 5	Less than 20	Strong
		From 5 to 15	From 50 to 20	Patients
Baghdad Bank	34.25%	From 35 to 15	From 80 to 50	Good
Commercial Bank	54%	From 60 to 35	From 100 to 80	Borderline
		More than 60	More than 100	Unsatisfactory

It is clear from the table that the ratio of the quality of assets is different for the Commercial Bank of Iraq. The quality of the assets reached (0.665%) in year 2017, which is unsatisfactory, with a minimum of (0.15) in year 2012 and an annual average of (0.4605%). The increase in this ratio during the research period indicates the low asset quality of the bank. It is noted that the ratio of non-performing loans to total loans had exceeded the set threshold of 60%. This indicates a bad loan, which leads to large losses in the bank's capital. Therefore, there is a need to reduce the volume of non-performing loans. As for the National Investment Bank, it reached the highest percentage of (0.689) in year 2015. The lowest level of (0.04) was recorded in year 2018, with an average of (0.3129). This indicates an unsatisfactory loan, thus requiring the bank to reduce its volume of non-performing loans. The risk quality of the sampled banks' assets was evaluated by comparing the general average. The general average for the Commercial Bank of Iraq is (0.4605), followed by the National Investment Bank at (0.3129), and the Bank of Baghdad at (0.235) which is the lowest degree of non-payment risk.

iii. *Analysis of Asset Size for the Sampled Banks*

The size of a bank is often measured by the amount of assets that it owns. As an increase in the commercial banks' volume of assets increases their ability to invest, the increase in the volume of the banks' assets is typically expected to result in an increase in their profitability. In the event that the size of the commercial banks is measured with the property rights they own (paid capital, reserves and undistributed profits), the banks with larger property rights have greater funds available to them hence increasing their ability to invest. In addition, the increase in property rights increases the confidence of investors, which may be reflected in the volume of customer deposits. Thus, by increasing the financial leverage, the rate of return on equity can be maximized. The following equation was adopted to measure the size of the commercial banks' assets:

$$AS = L + PR$$

Since:

Abbreviation	Full English Term
AS	Asset Size
L	Liabilities
PR	Property Rights

Table 4 presents the results of the basic capital measurements of the sampled banks:

Table 4: Comparison of the Asset Size Measurements (million dinars)

T	Value / Year	L (1)	PR (2)	AS (3) 1)=+2)
A	Commercial Bank of Iraq			
1	2011	109624945	94538893	204163838
2	2012	112261767	135184629	247446396
3	2013	160236268	143200259	303436527
4	2014	138264072	196579178	334843250
5	2015	164887327	284385241	449272568
6	2016	140687855	274201298	414889153
7	2017	141878	281941	423819
8	2018	168808	291809	460617
9	2019	159987	283958	443945
10	2020	177848	271929	449777
Average				195582989%
B	Al-AhlyInvestment Bank			
1	2011	546448	529135	1075583
2	2012	792475	105417	.897892
3	2013	182588	154660	337248
4	2014	542237446	168480	542405926
5	2015	614971643	263429	615235072
6	2016	534745388	260539	535005927
7	2017	291008	287839	578847
8	2018	317509	285705	603214
9	2019	267182	257766	524948
10	2020	276161	256642	532803
Average				169719746%

Source: Prepared by the Researcher based on the Final Accounts of the Sampled Banks

It is clear from the tables above that the sampled banks' size of assets as measured by the total liabilities and the right of ownership varies in proportion from year to year (449272568). The highest ratio is recorded in year 2015, with a minimum of (423819) in year 2017 and an annual average of (195582989). The highest limit was recorded by the National Investment Bank (615235072) in year 2015, with a minimum of (524948) in year 2019 and an annual average of (169719746).For the purpose of evaluating the volume of assets in the sampled banks during the research period, the general average of the sampled banks was used. The general average for the Commercial Bank of Iraq is (195582989), followed by the National Investment Bank at (169719746) which is the lowest percentage.

b) Statistical Analysis of the Baath Sample Variables

i. *Statistical Analysis of the Commercial Banks*

General Statistics

With the goal of identifying the general characteristics of the studied data, Table 5 presents the general statistics depicting the lowest and highest values, the arithmetic mean, and the standard deviation for all the studied variables:

Table 5: General Statistics for the Variables

Descriptive Statistics					
	N	Minimum	Maximum	Meaning	Std. Deviation
x1	10	0.003	2.753	0.78350	1.047378
x2	10	0.150	0.950	0.46050	0.251401
Y1	10	423819	449272568	195582989	182135146.6

Based on the table above, the variable of Solvency Risk x1 recorded a minimum value of (0.003) and a maximum value of (2.753). Its arithmetic mean recorded a value of (0.78350) and standard deviation of

(1.047378). Meanwhile, Asset Quality Risk X2 recorded a minimum value of (0.150) and maximum value of (0.950). Its arithmetic mean is (0.46050) with a standard deviation of (0.2514010). Asset Size recorded a minimum value of (423819) and maximum value of (449272568). Its arithmetic mean is (195582989) with a standard deviation of (182135146.6).

ii. *Relationships between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2, and y1)*

The correlations between the independent variables and the dependent variable are henceforth discussed:

1. Correlations between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2 and y1)

The researcher developed null and alternative hypotheses for the purpose of testing the significance of the association between the variables, as follows:

The First Null Hypothesis:

H0: There is no significant correlation between Solvency Risk and Asset Size (x1 and y1).

Against the Alternative Hypothesis:

H1: There is a significant correlation between Solvency Risk and Asset Size (x1 and y1).

The Second Null Hypothesis:

H0: There is no significant correlation between Asset Quality Risk and Asset Size (x2 and y2).

Against the alternative hypothesis:

H1: There is a significant correlation between Asset Quality Risk and Asset Size (x2 and y1).

For the purpose of verifying and testing the above hypotheses, the researcher used the statistical program SPSS version 26 to obtain the correlation values and their statistical significance, as shown in Table 6 below:

Table 6: Correlation between the Two Independent Variables and Variable y1

Correlations			
		X1	X2
Y1	Pearson Correlation	- 0.797**	- 0.229
	Sig. (2-tailed)	006 0	.525 0
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

The table above shows that Solvency Risk (x1) and Asset Size (y1) have a significant inverse correlation (-0.797) below the significance level of 5%. Meanwhile, Asset Quality Risk (x2) and Asset Size (y1) have a non-significant correlation (-0.229) below the significance level of 5%. From the foregoing, it appears that Asset Size has a higher correlation with Solvency Risk than with Asset Quality Risk.

2. The Effect and Significance of the Relationship between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2, and y1)

The researcher investigated the effect of the independent variables on the dependent variable based on the null hypotheses developed:

The First Null Hypothesis:

H0: Solvency Risk (x1) has no statistically significant effect on Asset Size (y1).

Against the Alternative Hypothesis:

H1: Solvency Risk (x1) has a statistically significant effect on Asset Size (y1).

The Second Null Hypothesis:

Asset Quality Risk (x2) has no statistically significant effect on Asset Size (y1).

Against the Alternative Hypothesis:

H1: Asset Quality Risk has a statistically significant effect on Asset Size (y1).

The hypotheses testing was conducted using the SPSS program. The results are summarized in Table 7 below:

Table 7: The Effect of the Independent Variables (x1 and x2) on the Dependent Variable (y1)

Dependent Variable	Independent Variable	The Coefficient of Determinatior	Corrected Determinatio n Coefficient	Test Value	Morale Test	Impact Parameter Value	Test Value	Moralizing t test	Moral of the Variable
Y1	X1	.64 0	.59 0	13.949	006 0	- 0.797	-3.735	006 0	The variable is inverse
	X2	.05 0	.05 0	0.441	.525 0	- 0.229	-0.664	.525 0	The variable is not significant

From the table above, the coefficient determination for Solvency Risk (x1) is 0.64 with a corrected determination coefficient of 0.59. This value indicates that the regression model used by the researcher explains 64% of the total differences. Meanwhile, the value of the test F is 13.949 moral value sig. equal to 0.006, below the significance level of 5%. This indicates the significance of the model to trace Solvency Risk (x1) on Asset Size (y1). Additionally, the effect parameter value of -0.80 is equal to -3.735, indicating an inverse moral significance, since the value of the moral sig. is below the significance level of 5%. Thus, it can be concluded that a one-unit increase in Solvency Risk (x1) leads to a decrease in Asset Size (y1) by 0.80. The moral value sig. to trace Asset Quality Risk (x2) on Asset Size (y1) is greater than the significance level of 5%. This means that Asset Quality Risk (x2) has no statistically significant effect on Asset Size (y1).

iii. *Statistical Analysis for Al-Ahly Investment Bank General Statistics*

The general characteristics of the studied data are presented in Table 8 below, detailing the lowest and highest values, the arithmetic mean, and the standard deviation for all the studied variables:

Table 8: General Statistics for the Variables

Descriptive Statistics					
	N	Minimum	Maximum	Meaning	Std. Deviation
X1	10	0.322	2.964	1.50040	0.826813
X2	10	0.037	1.067	0.31290	0.339587
Y1	10	337248	615235072	169719746	273029330.5

It can be seen from the table above that Solvency Risk (x1) has a minimum value of (0.322) and maximum value of (2.964). Its arithmetic mean is (1.50040) with a standard deviation of (0.826813). Meanwhile, Asset Quality Risk (x2) has a minimum value of (0.037) and maximum value of (1.067). Its arithmetic mean is (0.31290) with a standard deviation of (0.339587). As for Asset Size (y1), it has minimum value of (337248) and maximum value of (615235072). Its arithmetic mean is (169719746) with a standard deviation of (273029330.5).

iv. *Relationships between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2, and y1)*

The correlations between the independent variables and the dependent variable are henceforth discussed:

1. Correlations between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2, and y1)

The researcher developed null and alternative hypotheses for the purpose of testing the significance of the association between the variables, as follows:

The First Null Hypothesis:

H0: There is no significant correlation between Solvency Risk and Asset Size (x1 and y1).

Against The Alternative Hypothesis:

H1: There is a significant correlation between Solvency Risk and Asset Size (x1 and y1).

The Second Null Hypothesis:

H0: There is no significant correlation between Asset Quality Risk and Asset Size (x2 and y1).

Against the Alternative Hypothesis:

H1: There is a significant correlation between Asset Quality Risk and Asset Size (x2 and y1).

For the purpose of verifying and testing the above hypotheses, the researcher used SPSS version 26 to obtain the correlation values and their statistical significance, as shown in Table 9 below:

Table 9: Correlations between the Independent and Dependent Variables

Correlations			
		X1	X2
Y1	Pearson Correlation	-0.082	.883** 0
	Sig. (2-tailed)	0.821	.001 0
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

The table above shows that Solvency Risk (x1) and Asset Size (y1) have a significant and inverse relationship (-0.082) with a significance level below 5%. Meanwhile, Asset Quality Risk (x2) and Asset Size (y1) has a significant direct correlation (0.883) with a level of significance below 5%.

From the foregoing, it appears that Asset Size (y1) has a higher correlation with Asset Quality Risk (x2) than with Solvency Risk (x1).

2. The Effect and Significance of the Correlation between Solvency Risk, Asset Quality Risk, and Asset Size (x1, x2, and y1)

The researcher investigated the effect of the independent variables on the dependent variable asset size based on the developed null hypotheses below:

The first null hypothesis:

H0: Solvency Risk (x1) has no statistically significant effect on Asset Size (y1).

Against the Alternative Hypothesis:

H1: Solvency Risk (x1) has a statistically significant effect on Asset Size (y1).

The second null hypothesis:

H0: Asset Quality Risk (x2) has no statistically significant effect on Asset Size (y1).

Against the Alternative Hypothesis:

H1: Asset Quality Risk (x2) has a statistically significant effect on Asset Size (y1).

The hypotheses testing was conducted using the SPSS program. The results are summarized in Table 10 below:

Table 10: The Effect of the Independent Variables on the Dependent Variable

Dependent Variable	Independent Variable	Coefficient of Determination	Corrected Determination Coefficient	Test Value F	Morale Test F	Impact Parameter Value	Test Value t	Morale sig. t test	Moral of the Variable
Y1	X1	0.007	-0.117	0.054	0.821	-0.082	-0.233	0.821	The variable is not significant
	X2	0.780	0.752	28,323	0.001	0.883	5.322	0.001	The variable is insignificant

It is clear from the results that the value of the moral sig. to trace Solvency Risk (x1) on Asset Size (y1) is greater than the significance level of 5%. This means that Solvency Risk (x1) has no statistically significant effect on Asset Size (y1).

Meanwhile, the coefficient of determination for Asset Quality Risk (x2) is 0.78 with a corrected determination coefficient of 0.75. This indicates that the regression model explains 78% of the total differences. The value of the test F is 28,323 with a moral value sig. equal to 0.001, which is below the significance level of 5%. This indicates the significance of the model for tracing Asset Quality Risk (x2) on Asset Size (y1). The value of the effect parameter is 0.88, while the test value is equal to 5.322. This value indicates direct moral significance, since the value of the morality sig. is below the significance level of 5%. From this, it can be concluded that a one-unit increase in the value of Asset Quality Risk (x2) would result in an increase in Asset Size (y1) by 0.88.

VI. Conclusions and Recommendations

a) Conclusions

Through the results and analysis, a set of conclusions was reached as follows:

1. In the commercial banks, Asset Quality Risk and Asset Size have a non-significant and inverse correlation with a significance level below 5%. While in the National Bank, Solvency Risk and Asset Size have a non-significant correlation below the significance level of 5%, whilst Asset Quality Risk and Asset Size have a morale value below the significance level of 5%.
2. In the commercial banks, Asset Size has the highest correlation with Solvency Risk followed by Asset Quality Risk. While in the National Bank, Asset Size has the highest correlation with Asset Quality Risk followed by Solvency Risk.

b) Recommendations

This study proposes the following recommendations:

1. Commercial banks need to work on eliminating and reducing bad loans. They need to guarantee timely loan repayments along with benefits, which would raise their ratings and increase the size of their assets.
2. Commercial banks should work on increasing their capital and reducing potential asset risks. They need to increase their investments and reduce risks in order to make continuous profits and increases the size of their assets.
3. Commercial banks should have high quality assets to be able to enjoy high ratings and thus increase the size of their assets.

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On Recognition of Contract Asset and Contract Liability in the Financial Statements

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Abstract- With the publication of the International Financial Reporting Standard (IFRS) 15 "Revenue from Contracts with Customers", approaches to recognition and methods of measurement of the revenues have changed fundamentally.

The standard considers a contract liability as a reference point for accounting coordinates, for transferring control over an asset (goods or services) and determining the moment of recognition of revenue to the seller.

In the fulfillment of the performance obligations in the contract with the customer, assets or liabilities may arise that are directly related to the performance of the terms of the contract by any of the parties to the contract.

Depending on the situation in terms of the fulfillment of the obligation by the entity and payment by the customer, the entity must reflect this contract in the statement of financial condition in the form of a contract asset or a contract liability

Keywords: contracts; financial reporting; revenue from contracts with customers; contract asset; contract liability.

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On Recognition of Contract Asset and Contract Liability in the Financial Statements

Levan Sabauri [α], Mariam Vardiashvili [σ] & Marina Maisuradze [ρ]

Abstract- With the publication of the International Financial Reporting Standard (IFRS) 15 "Revenue from Contracts with Customers", approaches to recognition and methods of measurement of the revenues have changed fundamentally.

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The article discusses the terms of reflection of a contract asset and a contract obligation in the financial statements, and the difference from such traditional objects of accounting as trade requirements and trade obligations.

The study of a contract asset or contract obligation is important because it improves general purpose financial statements, providing financial information to the users of financial statements that will be useful for making decisions about the supply of resources to a given entity.

The article deals with the opinions and views of various researchers related to this issue.

Methodology: ISSB discussions, guide-recommendation materials of international audit companies ("Big Four"); scientific articles; analysis, systematization and comparison methods.

Keywords: contracts; financial reporting; revenue from contracts with customers; contract asset; contract liability.

I. Introduction

With the publication of the International Financial Reporting Standard (IFRS) 15 "Revenue from Contracts with Customers", approaches to recognition and methods of measurement of the revenues have changed fundamentally.

The objective of this Standard is to establish the principles that an entity shall apply to report useful information to users of financial statements about total revenue of the entity.

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"By introducing universal criteria for various contracts, IFRS 15 considers more broadly and specifies all possible options for recognizing and evaluating revenue", which is more accurate and consistent than existing standards. (Vardiashvili, M., Maisuradze, M., 2017)

The published standard not only reflects a new approach to the recognition and measurement of revenues, but also considers as an object of accounting a contract with a customer, which generates rights and obligations with a legal force, the protection of which is provided by the legislation. Depending on the situation in terms of the fulfillment of the obligation by the entity and payment by the customer, the entity must reflect this contract in the statement of financial condition in the form of a contract asset or a contract liability. This in turn requires the introduction of new accounts - "Contract asset" and "Contract liability" into the account plan.

We have studied numerous works of foreign and Georgian scientists in the field of practical application of IFRS 15. In the process of working on this article, from a theoretical, methodological and practical point of view, we relied on available internet sources that deal with the reflection of new elements - Contract liabilities and Contract assets in the financial statements. In addition to certain aspects of scientific justification, we used manual-recommendation materials of international audit companies ("Big Four").

When drawing conclusions, we used methods of induction, deduction, analysis and synthesis.

The practical aspect of the research results is that the recommendations presented can be used by companies in the process of compiling financial accounting and reporting

II. Main Part

On the conceptual basis of financial statements, income is seen as an increase in assets, which is the result of the supply of goods and services. In these circumstances, accounting procedures are primarily aimed at determining the time and amount of income recognized in accordance with cost accounting. In other words, traditionally in accounting, to determine the time and amount of recognition of an asset, liabilities, income and expenses, a transaction actually completed was used. The process of distributing the results of

transactions made between periods was based on two principles (Mariam Vardiashvili, 2022):

- The principle of accrual, which reflects the effects of transactions and other events and circumstances on the economic resources of the accounting unit and the requirements for them in the same periods when this effect occurs, even if the received cash flows and payments are made in another period;
- The principle of prudence, according to which, if the probability of receiving income is low, a reserve is created for expected losses as soon as they become probable.

The moment of recognition and measurement of revenues received from contracts with customers, which is indicated in IFRS 15, is more accurate and unambiguous. "One of the main changes introduced by IFRS 15 is that the entity se must recognize the revenues when it fulfills the performance obligation by transferring the promised goods or services to the customer. The asset is considered transferable when the user gains control over the given asset". (Sabauri, L., Vardiashvili, M., Maisuradze, M., 2022).

This provision shifts the emphasis of revenue recognition from the transfer of title to the asset to the transfer of control over the assets.

This circumstance substantially changes the traditional concept of recognition of economically justified income.

Introduction of the criterion of control over the object of exchange transaction, for the recognition of income, is not only an economic, but a legal justification, as well.

The contract liability reflects the future transfer of ownership of goods or services (Sabauri, L., Vardiashvili, M., Maisuradze, M., 2022). It is the contract liability that must be ensured by the right to protection. Therefore, the contract liability arising from the terms of the contract must be reflected in the systematic accounting of the unit, it must be a reference point in the accounting coordinates for the transfer of control over the asset (goods or services) and determining the moment of recognition of revenue to the seller (VICTOR S. PLOTNIKOV;OLESYA V. PLOTNIKOVA; ANDREY I. SHEVCHUK, 2015).

Based on the foregoing, it can be said that IFRS 15 establishes the procedure for accounting for an individual contract concluded with a customer. However, if it is more convenient, the entity has the right to use this standard in relation to a portfolio of contracts with similar characteristics, if the entity reasonably assumes that, from the point of view of financial statements, the results of applying this standard to a portfolio will not be substantially different from the result of its application to a separate contracts comprising part of the portfolio.

A contract with a customer is an agreement between two or several parties, a legal document that generates certain rights and obligations in an exchange transaction. Legal protection of contract liabilities and contract rights is provided by the legislation. This is an accounting document containing information about contract liabilities, which reflects the right to receive a contract asset and the contract liability to pay for this asset. In this case, as a rule, the contract itself as a document has no measure of value and is not a commodity, except for financial instruments.

> *According to Point 9 of IFRS 15:* Contract is a legal document by which the parties to the agreement have assumed the obligation to fulfill the contractual conditions and which contains information about new accounting element - contract liabilities, which are subject to accounting, recognition and evaluation in case they meet the criteria provided for by the Standard. Therefore, the contract itself can serve as an object of accounting observation (VICTOR S. PLOTNIKOV; OLESYA V. PLOTNIKOVA; ANDREY I. SHEVCHUK, 2015).

By recognizing contract liability as an object of accounting, one must proceed from the fact that contract liability and contract law are inseparable. The buyer and seller enter the market, usually with the intention of concluding an asset purchase/sale contract. Only by executing (signing) the contract do they receive contractual obligations that determine the transfer of ownership of the asset.

In this case, the market acts as an "intermediary", a certain institutional environment in which the intentions of the seller and the buyer acquire a legal form, the content of which is filled with contract liabilities secured by legal protection, as reflected in sub-point "a" of Point 9 of IFRS 15:

1. "The parties to the contract have approved the contract (in writing, orally or in accordance with other customary business practices) and are committed to perform their respective obligations" (ISSB, 2023).
   Sub-points "b" and "c" of Point 9 of IFRS 15 can serve as further confirmation of the need to recognize contract liability as accounting object:
2. The entity can identify each party's rights regarding the goods or services to be transferred;
3. The entity can identify the payment terms for the goods or services to be transferred (ISSB, 2023);

In this case, we are talking about the contractual right to monetary compensation for the transferred goods or services and the contract liability to pay monetary compensation under certain conditions.

It is also worth to note that when it comes to contract liabilities, then, as a rule, this means that the exchange transaction will end in the future.

More clearly and accurately, the need to recognize contract liabilities obligations as accounting articles is indicated in Point 22 of IFRS 15:

At contract inception, an entity shall assess the goods or services promised in a contract with a customer and shall identify as a performance obligation each promise to transfer to the customer either:

1. A good or service (or a bundle of goods or services) that is distinct; or
2. A series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer (ISSB, 2023)

This part of the standard deals with the identification of the performance obligation, i. e. recognition and evaluation of goods or services promised in a contract with the consumer, which must be identified as a duty to be fulfilled, as a promise to transfer goods or services to the consumer (Nicole L. Cade; Lisa Koonce; Kim I. Mendoza, 2019).

According to Article 105 of IFRS 15: "When either party to a contract has performed, an entity shall present the contract in the statement of financial position as a contract asset or a contract liability, depending on the relationship between the entity's performance and the customer's payment. An entity shall present any unconditional rights to consideration separately as a receivable (ISSB, 2023). In fact, this article introduces the terms "Contract Asset" and "Contract Liability". By using these terms they were separated from traditional demands and obligations.

III. Contract Asset

As noted, the contractual asset is separated from the accounts receivable by IFRS 15. In the financial statements, accounts receivable shows the right to unconditional receipt of payment from the buyer, which arose as a result of the delivery of goods or the provision of services. Unconditional in the sense that only time should pass before making a payment (Nadezhda Kvatashidze, Zeinabi Gogrichiani, 2016).

Prior to the publication of IFRS 15, the term "receivables" was the only term used to refer to consumer debt for goods and services received.

Some contracts with the consumer, may contain two or more obligations to transfer goods or services to the consumer.

When fulfilling a single obligation to the buyer, the seller company does not receive an unconditional right to receive money, since it must first meet another obligation. For example, when the delivery of one product in accordance with the concluded contract is subject to payment only after the provision of additional services or only after the delivery of another product. In such cases, under IFRS 15, the seller must recognize the contract asset.

"Contract Asset is an entity's right to consideration in exchange for goods or services that the entity has transferred to a customer when that right is conditioned on something other than the passage of time (for example, the entity's future performance)" (ISSB, 2023)

In addition, contract assets and liabilities can arise from differences between the moments of creation of unconditional rights to recognition, receipts and compensation of income (Katja van der Kuij-Groenberg, Maarten Pronk, 2019).

For example, a company must build a building for a customer under a contract. The project, which has a total cost of 700,000 monetary units, lasts 9 months and includes two reporting periods. It starts on July 1 and should end at the end of March next year. Under the contract, the customer pays the compensation in full when the project is completed and transferred to the customer.

By the end of the first reporting year, the degree of commitment performance was estimated at 60% using the results method, e. Y. The company must recognize income for this period in the amount of 420,000 monetary units. But, not a demand, but a contractual asset will be recognized in the asset, as long as the company does not have the right to an unconditional demand for remuneration until the completion of the project.

Upon completion of the project, the company has the unconditional right to receive compensation at the total cost. Accordingly, in the accounting records, trade accounts receivable in the amount of 700,000 monetary units will be recorded in debit, and income - in credit, in amount of 280,000 monetary units and at the same time the contract asset in amount of 420,000 monetary units will be recognized.

A contract asset is not a financial instrument, so IFRS 9 is not used here, with only one exception - in in case of impairment (ISSB, 2023). An impairment of a contract asset shall be measured, presented and disclosed on the same basis as a financial asset that is within the scope of IFRS 9" (ISSB, 2023).

So, the entity must measure the contract asset for any impairment, determine the expected credit loss and recognize the loss reserve - exactly like any trade receivables.

The Standard uses the terms "Contract Asset" and "Contract Liability", but does not exclude the use of alternative names in the entity's financial statements. When an entity uses a different name instead of "Contract Asset" it must provide sufficient information for the financial statement user to distinguish between demands and contract assets.

IV. Contract Liability

IFRS 15 introduces the concept of Performance Obligations. Performance Obligations are each promise to be fulfilled to the consumer, a different good or service (or package of goods and services), which are mainly delivered to consumers according to one and the same scheme (Sabauri, L., Vardiashvili, M., Maisuradze, M., 2022).

Traditionally, liabilities (referring to trade accounts payable) were used to refer to debts arising from trade relations.

According to the conceptual foundations of financial reporting, "liability" is an ongoing duty to transfer economic resources to an enterprise that arises as a result of events that have occurred in the past (ISSB, 2023).

For a liability to exist, the following three criteria must be met:

1. The entity has a duty;
2. Duty is a transfer of an economic resource (see points 4.36-4.41); and
3. This duty is a current duty that exists as a result of past events.

"Contract Liability ty is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer) (ISSB, 2023).

For example, the company signed an equipment purchase contract on 28 December 2022. In accordance with the terms of the contract, the equipment must l be delivered from 10 February to 21 February 2023. The cost of equipment in the amount of 7 million monetary units must be paid within five working days after delivery (signing of the acceptance certificate). In such a situation, the company that entered into the contract for the purchase of equipment does not recognize the assets or liabilities associated with this contract in its financial statements as of 31 December 2022, since it was not responsible for the fulfillment of its obligations during the reporting period. The obligation to pay 7 million monetary units will be recognized once the equipment is delivered. However, it is important for the user of the financial statements to know the existence of such a contract on the purchase of fixed assets. This will allow him to assess future payments on investment activities, as well as learn about the company's intentions to acquire new fixed assets. Therefore, IAS 16 "Property, Plant and Equipment" fixed assets require disclosure of information about such contracts in financial statements (ISSB, 2023).

In some cases, payments are set by contract in stages. In many cases, the gradual payments received from the customer do not reflect the volume of work performed. Therefore, payments are not automatically recognized as revenue (Sabauri, L., Vardiashvili, M., Maisuradze, M., 2022).

According to Point 106 of IFRS 15, after receiving advance payment from the customer, the entity must recognize the contract liability in relation to its obligations related to the transfer of goods or services, or readiness for the transfer of goods or services in the future, in the amount of advance payment received. The entity shall terminate the recognition of such a contract liability (and recognize the revenues) when it transfers such goods or services and, therefore, fulfills the performance obligation

For example, entity "A" concludes contract with the customer for the manufacture and supply of 1,000 units of product for a total amount of 1 million monetary units. The contract specifies that the customer must pay 40% of the contract value in advance, within 30 days after signing the contract. After 30 days, an invoice is issued to the customer by Entity "A" in the amount of 40% of the value of the contract, as the payment deadline for reimbursement has come. On the basis of this invoice, the company reflects 400,000 monetary units, on the one hand as trade receivables and on the other hand as contract liability (Максим Лесовой, 2013).

Trade accounts receivable will be repaid by depositing the amount, and from the delivery of goods worth the remaining 600,000 monetary units, the unit will recognize income in the total amount, on which the following accounting records are composed:

Debit	Trade accounts receivable	600,000
Debit	Contract liability	400,000
Credit	Revenue	1000,000

In some entities, the customer pays a non-refundable advance payment to the unit, which entitles the customer to receive the goods or services in the future (and obliges the enterprise to be ready to deliver the goods or services), although this right may be left unused by the buyer. Such unused (unrealized) rights are often called "unclaimed rights or unclaimed amounts" (IFRS 15, B 45).

An entity shall recognize a liability (and not revenue) for any consideration received that is attributable to a customer's unexercised rights for which the entity is required to remit to another party (IFRS 15, B 47)

For example, shopping establishments often use gift cards that are not always fully cashed (or redeemed), and/or the tickets sold in advance by airlines are left unused by passengers. When a unit receives compensation attributable to an unrealized right of the customer, the unit must recognize the contract liability in the amount of advance payment

received from the customer. Income is usually recognized when the unit fulfills its obligation.

Thus, the contract liability is recognized and measured by the amount of the advance payment received or receivable.

V. Conclusion

Thus, IFRS 15 introduces the terms "Contract Assets" and "Contract Liabilities", although an entity may use different terms in its financial statements (ACCA, 2022). The contract liability is recognized when the customer pays the remuneration in advance or when, in accordance with the terms of the contract, the due date for payment of the remuneration has come. Recognition of a contract asset occurs when an entity has fulfilled an obligation, however, the entity cannot recognize receivables until other obligations envisaged under the contract are satisfied with the future activities of the entity.

While a contract asset is a right to reimbursement that depends on the subsequent fulfillment of the rest of the terms stipulated in the contract, receivables are - an unconditional right to reimbursement.

Impairment of both contract assets and accounts receivable shall be measured, reflected and disclosed on the same basis applicable to the impairment of financial assets within the scope of IFRS 9.

For the presentation purposes, contract assets and contract liabilities must be calculated at the contract level and presented separately from each other, jointly. Accounts receivable must be presented separately from contract assets and contract liabilities

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Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

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Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

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