The Impact of Internal and External Factors on Financial Performance During Periods of Economic Instability: An Empirical Study of non-Financial Firms Listed in Egypt

أثر العوامل الداخلية والخارجية على الأداء المالي خلال فترات عدم الاستقرار الاقتصادي: دراسة تطبيقية على الشركات غير المالية المدرجة في البورصة المصرية

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Abstract

This paper investigates how internal and external factors influenced the financial performance of nonfinancial firms in Egypt during the period of economic instability from 2012-2022. Using data from 53 firms listed on Egyptian stock exchange, the study focuses on Return on Assets (ROA) and Return on Equity (ROE) as financial performance indicators. The independent

variables analyzed include firm capital structure, firm size, assets tangibility, firm liquidity, operational efficiency, and major external events like the Egyptian revolution, currency devaluation, and the COVID-19 pandemic. Additionally, macroeconomic factors such as GDP growth and interest rate are considered. Key findings show that in the ROA model, factors such as debt ratio and assets tangibility negatively affected the financial performance, while firm size, operational efficiency, and interest rate had a positive impact. In contrast, in the ROE model, assets tangibility, operational efficiency, and interest rate had a positive impact. Interestingly, the economic challenges have no significant impact on either model. This paper thus contributes to the debate on the effects of economic challenges, offering a comprehensive approach by considering a wide range of factors influencing firm's financial performance.

Keywords: Firm Financial Performance, Determinants of Financial Performance, Economic Instability, Egyptian non-financial listed firms.

ملخص البحث

يقدم البحث دراسة تفصيلية لكيفية تأثير العوامل الداخلية والخارجية على الأداء المالي للشركات غير المالية في مصر خلال فترة عدم الاستقرار الاقتصادي من ٢٠١٢-٢٠٢٢. يتم ذلك باستخدام بيانات من ٥٣ شركة مدرجة في البورصة المصرية، وتركز الدراسة على العائد على الأصول (ROA) والعائد على حقوق المساهمين (ROE) كمؤشرات للأداء المالي. كما تشمل المتغيرات المستقلة التي تم تحليلها هيكل رأس المال الثابت، وحجم الشركة، والأصول الملموسة، والسيولة الثابتة، والكفاءة التشغيلية، والأحداث الخارجية

الكبرى مثل الثورة المصرية، وتخفيض قيمة العملة، وجائحة COVID-١٩. بالإضافة إلى ذلك، تم اخذ اثر عوامل الاقتصاد الكلي مثل نمو الناتج المحلي الإجمالي وسعر الفائدة في الاعتبار لما لهم من تأثير كبير علي الأداء المالي للشركات. وتظهر النتائج الرئيسية أنه في نموذج العائد على الأصول أثرت عوامل مثل نسبة الدين والأصول الملموسة سلبا على الأداء المالي، في حين كان لحجم الشركة والكفاءة التشغيلية وسعر الفائدة تأثير إيجابي. في المقابل، في نموذج العائد على حقوق المساهمين، كان للأصول الملموسة والكفاءة التشغيلية وسعر الفائدة تأثير إيجابي. ومن المثير للاهتمام أن التحديات الاقتصادية التي ظهرت في العقد الأخير نتيجة للأحداث المختلفة ظهر ان ليس لها تأثير كبير على أي من النموذجين. وبالتالي يساهم هذا البحث في تقديم إضافة تطبيقية وعلمية هامة في محاولة للوصول لنتائج اكيدة فيما يخص الجدل القائم حول آثار التحديات الاقتصادية. كما يقدم البحث نموذج شامل لتحليل الأداء المالي في خلال فترة بها العديد من التحديات وذلك من خلال النظر في مجموعة متعددة من العوامل التي تؤثر على الأداء المالي للشركات.

الكلمات المفتاحية: الأداء المالي للشركات، محددات الأداء المالي، عدم الاستقرار الاقتصادي، الشركات المصرية غير المالية المدرجة في البورصة.

1. Introduction

Financial performance is a measure of how well a firm can use its assets to generate revenue and profits over a certain period. It is typically evaluated through metrics such as return on assets and return on equity (Magdi, 2020). A firm financial performance is a critical as it reflects its overall health and its ability to sustain growth, attract investments, and deliver value to shareholders. The last decade, Egypt faces major challenges that cause the economic volatility like, 2011Revolution, the currency devaluation and COVID-19. Key determinants of financial performance include both internal and external factors.

Internally, financial performance is influenced by aspects like a company's capital structure, operational efficiency, assets management, and liquidity (El-Sherbiny & Sviatschi, 2019). For instance, a well- optimized capital structure can reduce financing costs and improve profitability (Magdi,2020). Additionally, operational efficiency, which refers to the ability to manage costs and maintain high productivity, directly affects profitability and overall financial outcomes (Alazzawi & Hlasny, 2024). Externally, macroeconomic factors such as interest rate, inflation, exchange rate and overall economic growth play a significant role in shaping a firms performance. Events such as revolution, 2016 currency devaluation, and COVID-19 pandemic have shown that significant economic changes can influence firm's profitability, operational cost (El-Sherbiny & Sviatschi, 2019).

Therefore, understanding the internal and external factors affecting the financial performance is essential for firms to adapt to changing environments and to leverage their strengths effectively. Furthermore, given a shortage of studies examining the effects of both external and internal factors—such as the 2011 revolution, currency devaluation, the COVID-19 pandemic, and macroeconomic variables like GDP growth and interest rates—as well as the inconsistent findings in the literature review, more research is required to examine these mechanisms and their implementation for the integrity of financial reporting. Therefore, by analyzing the effects of internal and external factors on the

financial performance of Egyptian firms during a period of economic volatility, the main objective of this research is to investigate the theoretical frameworks and empirical evidence that currently exist in order to provide a comprehensive understanding of the dynamics involved.

2. Literature Review

Financial performance

Every business aims to reach a high-performance level by making efficient use of its resources, particularly in terms of money. Therefore, an organization's financial performance is the result of any of a wide range of activities it engages in (Thabit et al., 2017). Return on Assets and Return on Equity were commonly used accounting measures for financial performance (Domnick, 2018). Financial performance is significantly impacted by financial sector factors like size, tangibility, liquidity, and leverage. It has been suggested that adding more independent variables will expand the study's usefulness (Khan & Nouman, 2015). The efficiency is a financial indicator that assesses how well a company manages its resources and performs its operations (Santosuosso, 2014).

Capital structure

Abor (2005) described capital structure as a precise mix of debt and equity, which is normally used to finance the firm’s operations. Because capital structure is intended to promote

profitability, which is every company's goal, it is a critical issue companies need to pay attention to (Rahma.et.al, 2024). Different capital structure theories have been created by distinguished scholars to show how a company's capital structure impacts its profitability. More than one theory have been established since then about this topic like, the trade-off theory, the pecking order theory, and the agency theory (ALMuhtadi, 2019). For the first one, the ideal capital structure could serve as an example of the many costs and benefits of debt financing. Tax shields (savings), lower agency costs as a result of takeover threats, and the need to pay interest through generated cash flow are some of the benefits of debt financing (Akintoye, 2009). However, the second one stated that firms had two main sources of funding for their financial needs: internal and external. When choosing between various external financing sources, firms prefer to use debt leverage first, followed by the issuance of preferred stock and then common stock, to reduce the extra expenses associated with asymmetric information (Nassar,2016). On the other hand, Agency theory suggested that managers could use leverage to check their achievement of the company's goals rather than to maximize their own interests at the expense of the customers. As a result, costs are decreased, increasing efficiency and improving the performance of the company (Musah, 2017).

A study of Kakanda.et.al,2016 conducted on listed consumer goods companies on the Nigerian stock exchange from 2008-

2013 revealed that the capital structure of a company and its corporate financial performance were positively and significantly correlated. However a study examined how capital structure affects profitability of group of twenty (G-20) electrical industry companies from 2018-2022. The results showed negative relationship between the debt to assets ratio as a capital structure and profitability (Puspitasari, 2023).

Assets tangibility

Tangible assets have a theoretical worth as opposed to a transactional trade value. Tangible assets are actual physical objects whose value may decrease with time. Tangible assets are usually included as a long-term asset (fixed assets) on the balance sheet (Kenton, 2022).Pledged tangible assets with a high level of assurance are the main source of collateral for business loans. Therefore, a company with more tangible assets will probably have lower external borrowing costs, which will improve its financial performance (Iltas and Demirgunes,2020). A study examined the impact of asset tangibility on manufacturing sectors financial performance in Turkey from 1990-2016. The results showed that efficiency, financial leverage, liquidity and assets tangibility all significantly affect financial performance negatively (Iltas and Demirgunes, 2020). Another study investigated the impact of assets tangibility on financial performance of manufacturing firms listed on Nairobi securities exchange. The study applied Dynamic unbalanced

panel analysis techniques using secondary data for 10 years period from 2010-2019 with 9 listed firms. The results revealed that positive correlation between assets tangibility and financial performance (Oganda et al, 2023).

Firm size

The scale of a company's operations referred to as its "firm size," and it is frequently determined by elements like total assets, sales revenue, or staff size (SciSpace, 2024). The impact of size on firm performance is a topic of conflicting opinions in the literature. Some argue that larger firms are anticipated to have better management and more diversification, which is likely to enhance their performance (Domnick, 2018). A current study analyzed the distributors capital structure and company size and the impact of these variables on the profitability of the health category companies from 2017-2021. The results showed that company size positively and significantly affected profitability (Dandi.et.al, 2024). Additionally, a study looked at the moderating role of firm size in the relationship between capital structure and business profitability. The study employed secondary data sourced from the publicly available annual financial statements of 156 manufacturing firms that were listed on the Tehran Stock Exchange (TSE) between 2011 and 2019. The findings demonstrated a positive correlation between profitability and firm size (Ahmed et al, 2023). However, a study analyzed the variables of company size, debt policy, and

profitability as moderators for firm value. The study focused on a manufacturing companies listed on the Indonesia stock exchange between 2019-2021, The results revealed that both company size and debt policy, while the firm size was not always positive, particularly when profitability was measured by ROA.(Putri and Pernamasari, 2023).

Liquidity

Liquidity is the ability of a company to quickly repay its debt. This will release up funds so that a company may operate without difficulty (Thabit, 2019). Dabi, 2023 emphasized the importance of liquidity to the profitability, self-sufficiency, and financial sustainability of MFIs. A study examined the relationship between the capital structure and the profitability of 53 construction companies of Albania from 2016-2019.The results showed that current liabilities ratio had a negative relationship with ROA and that noncurrent and total liabilities had positive relationship with ROE (Perri and Cela, 2022). However, a study aimed to investigate the relation between capital structure and firm performance, with a focus on companies listed on the Amman Stock Exchange (ASE) from 2013-2017.The results revealed that liquidity and Long Term Debt to Total Assets had a statistically negligible relationship with company performance (Alfawareh.et.al, 2022).

Efficiency

In the world of finance, an efficiency ratio is a metric that evaluates how well a business uses its resources to produce income or profit. Turnover ratios, sometimes referred to as efficiency or activity ratios are useful indicators of how rapidly assets are turned into sales. (Santosuosso,2014). According to Du Pont's theory, the company's ROE is influenced by efficiency, effectiveness and financial leverage (Reinhard and Abdi,2023). A study examines operational efficiency as a financial distress factor and makes conclusions about how it relates to financial performance as determined by return on equity (ROE) and return on assets (ROA) from 2005-2015. The findings demonstrated a statistically significant positive correlation between financial performance and operational efficiency (Sporta,2018**).** However, A study investigated how financial leverage, efficacy, and efficiency affected public company performance of all publicly traded companies operating in the automotive subsector between 2016 and 2020. The study's findings showed that operational efficiency significantly and negatively affects a company's performance (Reinhard and Abdi,2023). On the other hand a study aimed to determine the impact of operational efficiency on the company's financial performance in Indonesia revealed that efficiency doesn't directly affect the financial performance but has an indirect effect through profitability (Kurniasih &Akhmadi , 2024).

External events

The period from 2012 to 2022 witnessed significant economic fluctuations in Egypt, largely influenced by three major events: the aftermath of the 2011 revolution, the devaluation of the Egyptian currency, and the COVID-19 pandemic. These events had a profound impact on the country's economic landscape, shaping its trajectory over this decade.

1.1.1. 2011 revolution

The 2011 revolution in Egypt was part of the Arab spring, a wave of armed uprisings, protests, and anti-government demonstrations that overtook most of the Arab world in the early 2010s. Surprisingly, the 2011 Egyptian revolution brought with it a difficult transition period that lasted until 2014. Low foreign direct investment, a large debt load, a high unemployment rate, a high rate of poverty, a high budget deficit, and a low standard of living were among the problems that started this phase (Ali et al, 2024). A study of El-Sayed et.al, 2014 investigated the impact of political instability on stock market volatility in Egypt explored that the direct negative effect of the political instability on Egypt's stock exchange market and firm performance especially in the first two years following the revolution. However, Osman, 2021 study found that, firms in essential sectors such as pharmacy, food and essential services did not experience significant declines in profitability during 2011, as their products were not as sensitive to economic and political fluctuations.

1.1.2. Currency devaluation

In response to clear changes in the Egyptian pound's exchange rate following the revolution of January 25, 2011, the Egyptian government floated the currency in an effort to encourage investment and stabilize the foreign exchange market (Elbagory, 2017). A study was conducted the impact of the Egyptian pound flotation on factors influencing capital structure for Egyptian companies that were listed between 2014 and 2018 in Egypt. The profitability, tangibility, size, and liquidity of the company showed a weak impact from EGP flotation (Hussien and Bakry, 2022). Another study analyzed the Economic impact of currency devaluation on Emerging market in Egypt. The results revealed a negative impact of the devaluation on the Egyptian economy and businesses rely on import. The devaluation impact positively on the profitability of certain sectors, especially those involved in exports. The devaluation made goods and services cheaper on the international market, posting exports and the earnings of export- oriented companies (Abdou & Zaazou, 2017).

1.1.3. COVID 19

COVID 19 is an infectious illness brought on Egypt by the virus SARS-CoV-2 on March 2020.there are various impacts, not only on public health but also on economic conditions in Egypt. The majority of virus-infected individuals will recover from mild to moderate respiratory infection without the need for additional

care. Similar to other economies in the region, the Egyptian economy is impacted, but not as much. This was made possible by the beneficial standby structural programs and reforms that were implemented through strategic and efficient market and sector intervention (Emara, 2021). However, A study analyzed the impact of COVID 19 on stock returns in Egypt and other MENA countries, finding that the pandemic negatively affected stock returns (Basuony et al, 2021). Additionally, a study investigated the impact of COVID-19 on Indian company performance in Various industries. The results showed that Covid-19 had a negative impact on the performance in some sectors like communication services, consumer discretionary, financial, industrial, material, real estate, and information technology. However, the healthcare and energy industries both had positively influenced by the COVID19 (Khurana et al, 2024).

Macroeconomic factors

Every company operating in the economy needs to be aware of the macroeconomic variables. The macroeconomic factors occurring at the time have an impact on firms' performance when it comes to financing and investment decisions (Mitra et al, 2023).

1.1.4. The real growth domestic product (GDP)

GDP measures the monetary worth of finished goods and services, or those purchased by the end user, produced in a nation within a specific time frame, such as a quarter or a year. It includes all output produced inside a nation's boundaries. GDP is made up of market-driven products and services as well as certain nonmarket production, such government-supplied goods and services for defense and education international monetary fund (IMF). A study examined the impact of capital structure on 51 Ghanaian microfinance institutions' sustainability and financial performance. The results show that GDP growth has a significant and negative impact on return on assets (Dabi.2023). However, a study looked at how macroeconomic variables affect Indian manufacturing companies' performance from the fiscal year 2004- 2022. The empirical results demonstrate a favorable association between macroeconomic conditions and corporate performance (Mitra et al, 2023).

1.1.5. The interest rate

Strategists closely monitor interest rates in economies to inform their activities and maximize efficiency. Inflation and interest rates are deeply related to businesses because of how they affect factors like buying power loss, changes in prices and production costs, and market fluctuations in borrowing rates (Tarkom & Ujah, 2023). A study investigated the effect of interest rate on profitability in Indonesia from 2018-2020 found a significant negative

relationship between investment decision due to the higher interest rate and the profitability. This is largely attributed to the increased cost of borrowing which adversely affects firms financial performance (Suteja et al., 2023). Another research highlighted that many businesses reported lower profits when rising interest rates and high input costs. While some firms experienced revenue declines, expectations for future revenue were mixed, reflecting a cautious outlook despite ongoing hiring demands. This suggests that rising interest rates can create immediate financial pressure on companies, affecting profitability more significantly than revenues (Chinander, July 2023).

3. Methodology

Sampling and Data Collection

This study investigates whether capital structure, assets tangibility, firm size, liquidity, efficiency, External events during the periods of economic instability and macroeconomic factors have an impact on financial performance of 53 companies in the Egyptian stock market due to the data available during the period 2012 to 2022 . The study is based on secondary sources using quantitative data for the purpose of data collection. Financial data are gathered from the company's balance sheet, income statement and other relevant manuals and publications. The capital structure, assets tangibility, liquidity, efficiency and financial performance variables are measured through ratios. Additionally, the external events occurred

during this period, which is due to the period of 2011 revolution, Currency devaluation and COVID-19 pandemic. To consider the impact of these economic challenges, dummy variables were included for 2011 revolution (2012-2104), the currency devaluation (2017- 2019), and the COVID-19 pandemic (2020-2022), the remaining years (2015 &2016) considered periods of relative stability. Moreover, the macroeconomic factors like GDP growth and interest rate is considered. The dependent variable in this research is the financial performance, while the independent variables are capital structure, firm size, assets tangibility, liquidity and efficiency as internal factors indicators, while the external factors include the 2011 revolution, currency devaluation, COVID-19, GDP growth and interest rate. The next section will detail dependent and independent variables and their measures.

Dependent variable

Most of the empirical research that has been done so far focuses on the relationship between Internal, external factors and financial performance as determined by ROA and ROE, two well-known accounting-based performance indicators. **(**Dasuki,2016 ; Sadiq &Sher,2016 ; Domnick, 2018 ; ALMuhtadi,2019**;** Singh&Bagga,2019 ; Sakr and Bedeir,2019 ; Nathan,Elhadidi,2020 ; Tesema,2024; Babbar and Singh , 2024).

- ***Return on Equity*** is the revenue received expressed as a proportion of equity owned by shareholders. Return on Equity (ROE) measures the profitability that companies

earned in previous accounting periods and serves as an indicator of present business performance in most of the previous studies as (Dinh&Pham,2020; Domnick,2018; Hussein,2020; Ebaid,2009; Sakr and Bedeir,2019; Eladly,2021 and Patel et al. , 2023).

ROE = Net Income / Total Equity.

- ***Return on Assets*** shows how much money a business can make from its assets. Return on Assets (ROA) measure the effectiveness of a company's management in turning a profit from all of its assets as shown on its balance sheet in most of the previous studies as (Singh &Bagga, 2019; Nathan & Elhadidi, 2020; Tesema, 2024; AL-Muhtadi, 2019; Ayalew, 2021; Alfawareh et al, 2022 and Patel et al., 2023) .

ROA = Net Income / Total Assets.

Independent Variable

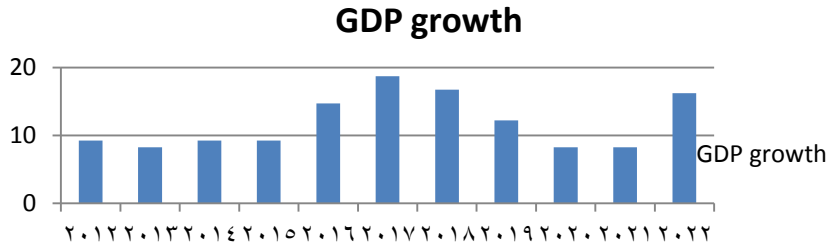
- ***Capital structure*****:** A ratio was commonly applied **Total debt ratio (TDR)** to measure the financial leverage, The financial leverage is the size of debt in the company's capital structure and the capital structure is the mix between long term sources of funds used by the company to run its business activity. This measure is used as indicator to the capital structure and consistent with the studies (Ebaid, 2009; Dasuki, 2016; Domnick, 2018; Singh & Bagga, 2019; Perri and Cela, 2022; Dabi, 2023; Arike,2023and Memameno and Sheefeni , 2024).

- ***Total debt ratio (TDR)*** measures the financial leverage that shows the percentage of total assets financed by debt, liabilities, and creditors and TDR is an indicator to the capital structure in most of previous studies. TDR is measured as the short-term debt and long-term debt as (total debt) divided by total assets (Arike, 2023).
- ***Assets tangibility*** is measured as the ratio of tangible fixed assets to total assets in most of the previous studies as the study of (Vatavua, 2015; Ullah et al., 2020; Memameno and Sheefeni, 2024and Tesema, 2024).
- ***Firm Size*** is measured by the total company's assets in most of the previous studies as the study of each of (ALMuhtadi, 2019; Nathan&Elhadidi, 2020; Dinh&Pham, 2020; Domnick, 2018; Tesema, 2024; Samour et al., 2024 and Oktavia and Ramadhan, 2024).
- ***Liquidity*** is measured by adding inventory to receivable, subtracting accounts payable, and then dividing by total assets, as a study of Hamed et al., 2024
- ***Efficiency*** is the production function of the company that is computed with the ratio of outputs to inputs. According to Kakanda et al., 2016 is measured by total asset turnover (sales divided by total assets).
- ***2011 Revolution:*** This study uses the 2011revolution as a dummy variable equals to 1 for years 2012 and 2014, and 0 otherwise.

- ***The currency devaluation:*** This study uses the currency devaluation as a dummy variable equals to 1 for years 2017 and 2019, and 0 otherwise.
- ***Covid 19 Pandemic:*** This study control the COVID-19 pandemic as a dummy variable equals to 1 for years 2020, 2021 and 2022, and 0 otherwise.

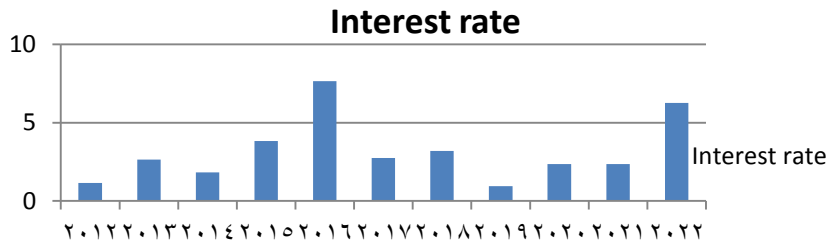
- ***Real Growth GDP:*** The real GDP growth in Egypt from 2011-2022

  The Egyptian GDP fluctuated during this period with peaks in 2017 and 2022



- ***Interest rate*:** The interest rate in Egypt from 2012-2022

  Interest rate in Egypt fluctuated during this period with a significant spike in 2016 and 2022



Regression Models Specifications

The following regression model will investigate the impact of capital structure, firm size, assets tangibility, liquidity and efficiency, the external factors(the 2011 revolution; currency devaluation; COVID-19), GDP growth, and interest rate on the financial performance (ROA and ROE):

$$ROA_{it} = a_{it} + \beta_1 TDR_{it} + \beta_2 ATNG_{it} + \beta_3 FS_{it} + \beta_4 LIQ_{it} + \beta_5 EFF_{it} + \beta_6 REV_{it} + \beta_7 DV_{it} + \beta_8 C19_{it} + \beta_9 GDPG_{it} + \beta_{10} IR_{it} + \varepsilon_i$$

$$ROE_{it} = a_{it} + \beta_1 LDR_{it} + \beta_2 ATNG_{it} + \beta_3 FS_{it} + \beta_4 LIQ_{it} + \beta_5 EFF_{it} + \beta_6 REV_{it} + \beta_7 DV_{it} + \beta_8 C19_{it} + \beta_9 GDPG_{it} + \beta_{10} IR_{it} + \varepsilon_i$$

Where, Return on assets (ROA) Ratio of net income to total assets, Return on equity (ROE) Ratio of net income to total equity, Total-term debt (TDR) Ratio of total-term debt to total assets, Asset tangibility (ATNG) Ratio of net fixed assets to total assets, Firm size (FS) Natural logarithm of total assets, Liquidity(LIQ) Ratio of current liability to current assets, Efficiency (EFF) Ratio of sales to total assets, 2011 Revolution (

REV) ,Currency devaluation (CD), Covid-19 (C19), The real GDP Growth (GDPG), The interest rate (IT), **ε:** is the error term.

Hypothesis development:

- H1: There is a significant relationship between TDR and the financial performance.
- H2: There is a significant relationship between ATNG and the financial performance.
- H3: There is a significant relationship between Firm size and the financial performance.
- H4: There is a significant relationship between liquidity and the financial performance.
- H5: There is a significant relationship between Efficiency and the financial performance.
- H6: There is a significant relationship between 2011 revolution and the financial performance.
- H7: There is a significant relationship between devaluation and the financial performance.
- H8: There is a significant relationship between COVID-19 and the financial performance.
- H9: There is a significant relationship between theGDP growth and the financial performance.
- H10: There is a significant relationship between the interest rate and the financial performance.

Findings and Analysis

Analyses of this research are performed using the Stata program. Starting with descriptive statistics, after which correlation analysis will follow, then the regression analysis to test the hypothesis.

1.1.6. Descriptive Statistics

Descriptive analysis uses summary statistics like mean, median, and standard deviation to describe and summarize data of the independent and dependent variables as shown in Table.1

Table .1 .Descriptive Analyses

Variables		Mean	Median	Max	Min	SD
Dependent Variables	ROE	0.133248	0.107739	0.9976817	-0.901342	0.1944059
	ROA	0.0619363	0.051804	0.4828376	-1.445189	0.1248439
Independent Variables	TDR	0.4700245	0.457858	3.390789	0	0.2903242
	ATNG	0.2822337	0.24553	0.98757	0.00012	0.240946
	FS	| 8.35	2.05	1.63	1.57	1.83
	LIQ	0.297077	0.287648	0.987554	-0.312029	0.222148
	EFF	0.667595	0.531688	4.48555	0.000028	0.66886
	GDP G	3.93455	4.45	7.7	-1.7	2.3448
	IR	11.932	9.25	18.75	8.25	3.8008

The previous table shows variations, mean, standard deviation, minimum and maximum values of the dependent, independent and control variables. Where the average of the **return on assets** as a dependent variable is 6%, the median is 5%, the maximum is 48%, the minimum is -144% which is a very low results represented the loss of Cairo oils and soap in 2021 and respectively the standard deviation is 12.5%, which means the variability of the return on assets from 2012-202 is 12.5% ,The

average of the **return on equity** as a dependent variable is 13%, the median is 10%, the maximum is 99%, the minimum is -90% and the standard deviation is 19%, the results shows a significant variation in their values. As a result, these differences reveal that there has been a notable difference in Egyptian companies' performance throughout this time. The average of ROA and ROE are similar to the results of Nathan and Elhadidi, 2020.

While the average of the total debt ratio as an independent variable is 0.47, the median is 0.46, the maximum is 3.391, the minimum is zero and respectively the standard deviation is 29%, which means that the proportion of total assets financed with 47% of debt. The average of the assets tangibility as an independent variable is 0.28 which means the fixed assets is 0. 28of the total assets, the median is 0.25, the maximum is 0.988, the minimum is 0 and the standard deviation is 24%, the average of Firm size as an independent variable is 8.35, the median is 2.05, maximum of 1.63, minimum of 1.57 and standard deviation of 183%. The liquidity as an independent variable has a mean of 0.30, for the median, it is 0.29, the maximum is 0.988, the minimum is -0.312 and the standard deviation is 22%. The efficiency as an independent variable has a mean of 67% that means the sales are 0.67 of the total assets, the median is 0.53, the maximum is 4.48555, the minimum is 0 and the standard deviation is 67%. Finally, the real GDP growth has a mean of 3.93, a median of 4.45, the maximum is 18.75, the minimum is

8.25 and the standard deviation is 3.8 and the interest rate has a mean of 11.93, a median of 9.25, a maximum of 18.75, a minimum of 8.25 and a standard deviation of 3.8. The results demonstrate a great spread in the the values of GDP growth and interest rate. Consequently, these wide ranges indicate the economic instability in Egypt during this period.

1.1.7. Correlation and Multicollinearity Analysis

In order to find any possible problems associated with multicollinearity, correlation analysis looks into the relationships that exist between independent variables and both dependent and independent variables. When hypotheses do not identify a specific direction of link between the independent and dependent variables, correlations should be two-tailed. Because there are no designated directional hypotheses, the correlations in this study are therefore two-tailed, meaning that the statistical analysis takes into account the possibility of both a positive correlation, and a negative correlation. It is essential to add that the Pearson's correlation matrix is used to evaluate the level of correlation between the independent variables, with a perfect positive relationship being represented by a value of (+1) and a perfect negative relationship by a value of (-1). When it is advised that in order to show that there are no problems with multicollinearity among the variables, Pearson's correlations between the independent variables should not be greater than 0.8.

Table .2 Correlation Matrix

Variables	ROE	ROA	TDR	FS	ATNG	EFF	LIQ	GDPG	IR
ROE	1.0000								
ROA	0.5685*	1.0000							
TDR	-0.0259	-0.5672*	1.0000						
FS	-0.0005	-0.0169	0.0794	1.0000					
ATNG	-0.253*	-0.2453*	0.0062	-0.0626	1.0000				
EFF	0.2214*	0.1880*	0.0515	-0.0941*	-0.0365	1.0000			
LIQ	0.1260*	-0.0488	0.2885*	0.1055*	-0.3988*	0.1341*	1.000		
GDP G	0.0761	0.0194	0.0190	0.0184	-0.0158	0.0065	0.0061	1.000	
IR	0.1692*	0.1157*	0.0146	0.0706	-0.0393	0.0107	-0.0065	0.2944*	1.000

***p<0.01, **p<0.05, *p<0.1.

Table.2 shows , The highest correlation among exploratory variables is between the return on assets “ROA” and the total debt ratio "TDR" variable with an amount of - 57%* which means there is a medium significant negative correlation between ROA and TDR , the result support Ebaid, 2009, Dasuki ,2016, Singh & Bagga ,2019 and Sakr & Bedir, 2019 and differ from Ayalew, 2021 and Rahma et al ,2024 . Also there is a weak significant negative correlation between both ROA and ROE variable and ATNG with an amount of -25% which means the lower assets tangibility affects slightly increase of ROA & ROE or vice versa so we will make the regression analysis to verify the relation and know which one affect the other. While there is a

weak significant positive correlation between the efficiency and the financial performance by 22% for ROE and 19% for ROA, for the liquidity, there is also a weak significant positive correlation between the ROE and the liquidity by13%. Similarly, there is a weak significant positive correlation between the Interest rate and the financial performance by 17% for ROE and 12 % for ROA. The results suggest that higher ROA is associated with the lower TDR , lower ATNG , higher efficiency and interest rate or vice versa so and, the higher ROE is associated with lower the ATNG, higher liquidity, efficiency and interest rate. We will verify that by the regression analysis. However, no multicollinearity problem as it is not exceeding (0.8) and we will make sure by the Variance Inflation Factors (VIF).

Regression analysis Results

The results of regression analysis explain the impact of total debt ratio, assets tangibility, firm size, liquidity, efficiency, 2011 revolution, Egyptian pound devaluation, COVID 19, GDP growth and interest rate as independent variables on the financial performance (ROA and ROE) as dependent variables. This research used F- test to determine whether fixed or pooled OLS model is appropriate, it was found that fixed effect model is appropriate, and then LM test to determine whether random or pooled OLS model is appropriate. finally, Hausman test is applied to test whether the fixed effects or random effects model is appropriate where result revealed that fixed effects model is

appropriate for ROA and random effects model is appropriate for ROE. Table.3 shows the final ROA fixed effects regression model and the ROE random effects regression model.

Table.3 Final results of the Regression Model

Variables	ROA			ROE		
	Coef	P-value	Sig	Coef	P-value	Sig
Total debt ratio	-0.30	0.002	**	0.006	0.954	
Assets tangibility	-0.15	0.012	*	0.20	0.009	**
Firm size	1.1	0.001	**	9.65	0.134	
Liquidity	0.003	0.934		-0.02	0.775	
Efficiency	0.04	0.017	*	0.06	0.002	**
GDP growth	-0.001	0.537		0.002	0.514	
Interest rate	0.004	0.000	***	0.01	0.000	***
Dummy 1(revolution)	-0.02	0.119		-0.03	0.200	
Dummy2(devaluation)	-0.02	0.082		-0.03	0.248	
Dummy 3(Covid19)	-0.003	0.722		0.008	0.687	
R- squared	0.43			0.13		
Observations	579			565		
NO. of companies	53			53		

Table.3 shows that the ROA fixed effects regression model revealed R-squared of 0.43 with 579 numbers of observations and 53 numbers of groups, which means that 43% of the variance in the dependent variable represented by ROA is explained by the independent variables. The ROE random effects regression model revealed R-squared of 0.13 with number of observations of 565 and 53 number of groups, which means 13% of the variance in the dependent variable represented by ROE is explained by the independent variables. The independent variables TDR, ATNG, FS, EFF, and IR have a significant

impact on the dependent variable financial performance represented by ROA .While the independent variables liquidity (LIQ), real GDP growth (GDP G), 2011 revolution (Dummy 1), Egyptian pound devaluation (Dummy 2), and COVID-19 (Dummy 3) have an insignificant impact on ROA. For ROE, the independent variables ATNG, EFF, and IR have a significant impact on the ROE and all the other independent variables have no impact on the ROE financial performance indicator.

The regression model shows that total debt ratio has a negative significant impact on ROA (p-value=0.002) and insignificant impact on ROE (p-value=0.954). This could indicate that institution with high levels of debt relative to total assets may lead to inefficiencies in assets utilization. In contrast, the lack of a significant impact of the total debt ratio on ROE indicates that while debt may increase financial risk, it does not necessarily decrease the equity returns. the overall impact on ROE may be neutral. In general, the capital structure has weak to no relationship with the financial performance. Therefore H1: There is a significant relationship between TDR and the financial performance is rejected. This results is consistent with Ebaid, 2009; Oktavia and Ramadhan, 2024; Alfawareh, Almashaqhabeh, Al-Kofahi and Ananzeh, 2022.

Assets tangibility has a negative significant impact on both ROA (p-value=0.012) while a positive significant impact on ROE (p-value=0.009). This relation could indicate that, an increase in

assets tangibility, which refers to the proportion of physical assets in a company's total assets base, can lead to a decrease in ROA because tangible assets such as machinery and real estate typically generate lower returns compared to intangible assets, like patents and trademarks. Conversely, higher ATNG can increase ROE as it often signifies a more stable and secure asset base, enhancing the firm's ability to leverage its equity, especially if the returns from these tangible assets are efficiently managed, resulting in higher profits for shareholders. Therefore H2: There is a significant relationship between ATNG and the financial performance is accepted. The result is consistent with Zeitun & Tian,2007; Vatavu,2015; Singah& Bagga,2019; Vukovic et al,2020 and Vukovic, Milutinovic, Krsmanovic and Jaksic,2022.

Firm size has a significant positive relationship with the ROA of the Egyptian companies (p-value=0.001) ,this result is consistent with Zeitun and tian,2007; Vukovic, Milutinovic, Krsmanovic and Jaksic,2022; Dabi,2023: Tesema,2024 and Dandi , Aminus and Rahayu ,2024.While, firm size has an insignificant impact on ROE (p-value=0.134).This result indicates that Egyptian larger firms often benefit from economies of scale and greater operational efficiency, enabling them to generate higher returns on their assets base, ROE can remain consistent regardless of firm size. Therefore, H3: There is a significant relationship between firm size and the financial performance is rejected.

Liquidity has an insignificant impact on the financial performance represented by ROA and ROE (p-value=0.934,0.775) .The result suggests that firms with varying liquidly levels can still achieve similar ROA and ROE, indicating that profitability metrics may be influenced more by operational efficiency and other factors than by liquidity alone. Therefore H4: There is a significant relationship between liquidity and the financial performance is rejected. This result is consistent with Oktavia and Ramadhan, 2024 and Alfawareh, Almashaqhabeh, Al-Kofahi and Ananzeh, 2022.

Operational efficiency of the Egyptian firms has a significant positive impact on the financial performance represented by ROA and ROE (0.017,0.002). As a result, the findings suggest that management should concentrate on, keep an eye on, and guarantee improved operational efficiency of the Egyptian firms. Therefore H5: There is a significant relationship between efficiency and the financial performance is accepted. This result is consistent with Kakanda, Bello &Abba, 2016; Musah.2017; Sporta, 2018 and Reinhard & Abdi,2023.

Interest rate has a strong positive significant impact on ROA and ROE (p- value=0.004,0.000).This result suggests that, as interest rate increase, certain firms may experience improvements in their financial performance as firms that hold significant cash reserves or engage in investments activities that benefit from higher yields may see improved returns. Therefore H10: There is a significant

relationship between the interest rate and the financial is accepted. This result is supported by Okise,2019; Ndegwa,2016 and Kiconco,2024. Finally, the external factors, 2011 revolution, currency devaluation, COVID 19 and the GDP growth have weak to no impact on the financial performance of the Egyptian firms. The lack of impact of the economic challenges on the financial performance of the Egyptian firms could be attributed to their resilience and adaptability to frequent economic fluctuations.

Conclusion

This study analyzes the factors affecting the financial performance among 53 nonfinancial firms listed in Egyptian exchange market during a period of economic instability from 2012-2022, taking into account the impact of external events as well as 2011 revolution ;currency devaluation and COVID 19 and the Macroeconomic factors as the real GDP growth and interest rate. The study included the external events as Dummy variables for Revolution2011 (2012-2014), the devaluation (2017-2019), the COVID 19 (2020-2022) and, the remaining years (2015 &2016) considered stability periods. In addition the factors used as independent variables were Capital structure, Assets tangibility, Firm size , liquidity, efficiency, external factors(2011Revolution , devaluation and Covid19) and the macroeconomic factors (GDP growth and interest rate) that may affect the financial performance as a dependent variable represented by return on assets and return on equity.

This research contributes to the existing body of Knowledge by providing empirical evidence regarding the financial performance of the Egyptian firms during a period of economic instability. It challenges the conventional view that economic fluctuations uniformly negatively affect financial outcomes by demonstrating that many firms in Egypt exhibit resilience and adaptability. This study adds to the literature on emerging markets by highlighting the specific strategies that enable firms to thrive in volatile environments. Additionally, the findings can serve as basis for future research exploring the dynamic of financial performance in similar developing economies, thereby enriching the discourse on corporate resilience and adaptability.

In this research descriptive, correlation and regression analysis are conducted to find out the results. Moreover, testing for linearity, multicollinearity is conducted followed by F- test to determine whether fixed or pooled OLS model is appropriate, it was found that fixed effect model is appropriate then LM test to determine whether random or pooled OLS model is appropriate and finally, Hausman test is applied to test whether the fixed effects or random effects model is appropriate where result revealed that fixed effects model is appropriate for ROA and random effects model is appropriate for ROE. Tests for autocorrelation and heteroskedasticity were done, where, autocorrelation and heteroskedasticity problems occurred which were solved by using cluster-robust standard errors to come up

with the final regression model after solving for autocorrelation and heteroskedasticity problems. Findings of the regression analysis indicated the ROA fixed effects regression model revealed R-squared of 0.43 with number of dependent variables represented by ROA is explained by the independent variables. The ROE random effects regression model revealed R-squared of 0.13 with number of observations of 565 and 53 number of groups which means 13% of the variance in the dependent variable represented by ROE is explained by the independent variables. Findings of the regression analysis showed that assets tangibility has a positive significant relationship with Egyptian firms ROE and a negative significant relationship with ROA Therefore H2: There is a significant relationship between ATNG and the financial performance is accepted. This result suggests that the Egyptian firms might benefits from diversifying their asset structure to include a higher proportion of intangible assets, such as technology or intellectual property, which could offer greater potential for improving their financial performance. Understanding this relation is critical for corporate managers and policy makers in Egypt, as it provides insights into optimizing asset structures to enhance firm profitability in developing economy context. While operational efficiency of the Egyptian firms has a significant positive impact on the financial performance represented by ROA and ROE In the Egyptian market, where businesses often face challenges such as inflation,

economic volatility, and limited access to capital, improving asset efficiency becomes even more crucial for sustaining competitive advantage and financial performance. By doing so, they can generate more revenue per unit of asset, leading to improved profitability and higher revenue. This is particularly important in sectors that rely on capital- intensive operation, where maximizing the productivity of existing resources is essential. For decision makers and corporate leaders in Egypt, prioritizing initiatives that enhance asset utilization- such as technological upgrades, process improvements, and strategic management of resources- could lead to stronger financial outcomes and more resilient economy.

The external events, 2011 revolution, currency devaluation and COVID 19 have weak to no impact on the financial performance of the Egyptian firms. The lack of impact of external factors that caused the economic instability on the financial performance of the Egyptian firms could be attributed to their resilience and adaptability to frequent economic fluctuations. Many Egyptian firms have developed strategies to mitigate the effect of economic instability, such as diversifying their revenue streams, managing costs effectively, and adjusting their operations to the local market dynamics. Moreover, the reliance on domestic demand and the ability to adjust pricing strategies in response to inflation or currency fluctuations can help cushion the negative impacts of boarder economic challenges. As a result, even in

times of economic instability, these firms may manage to sustain their financial performance. The resilience highlights the importance of strong operational management and strategic flexibility in navigating the uncertainties of the Egyptian market. Further research could explore specific strategies employed by firms that allow them to withstand such instability without significant harm to their financial performance.

There is a positive relationship between the interest rate and financial performance in the context of the Egyptian market. Therefore, H10: there is a significant relationship between the interest rate and the financial performance is accepted. However, it is essential to recognize that this positive relationship might not be uniform across all industries; sectors with high debt levels could face increased borrowing costs, potentially offsetting the benefits seen in the financial institutions. The relationship between interest rates and financial performance in Egypt underscores the importance of industry- specific dynamics and the unique characteristics of the Egyptian economy. Understanding this relation can help policymakers, investors, and managers tailor their strategies to leverage the effects of interest rate fluctuations, contributing to more informed financial decision- making within the Egypt market.

Limitations and Recommendations for Future Studies

It is important to recognize the limitations of this research. Firstly, the sample used in this study is restricted to 53 non-financial enterprises registered in the EGX, rather than all listed firms due to data availability. Secondly, this study is limited to the Egyptian Stock Exchange and cannot be applied to other markets with different economic and regulatory contexts. Furthermore, while the paper covers external events (2011 revolution, COVID-19 pandemic, and currency devaluation), other global external variables or events might possibly have influenced financial performance. This study used 53-sample fall into 14 sectors that are available on the Egyptian Stock Exchange, while each sector has some factors that affect its financial performance and may not affect the other sectors. Moreover, this research considered only the accounting measure of financial performance, which are ROA and ROE and neglected the other measures. Further research should use more firms in the EGX or others to expand the sample could explore industry- specific variations and the role of other external factors such as the market conditions, inflation, and tax regulations and consider the global events that may affect the financial performance of the Egyptian firms. The sectors used in the future research could be classified into sub-sector to determine the variables that affect each sector.

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