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The Effect of Financial Distress on Financial Performance: An Empirical Study on The Egyptian Companies

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ABSTRACT

Many companies have financial distress, especially in COVID-19, that's why this research needs to provide an early warning for the companies to know whether they are in financial distress or not. The sample includes 11 companies which are (TMG, Juhayna, EZZ Steel, GB auto, Integrated Diagnostics Holding (IDH), MM Group for industry and international trade, Telecom Egypt, Sixth of October Development and Investment (SODIC), ElSewedy Electric, EFG-Hermes holding, and Fawry for electronic payment) according to the common between of them as the magazine (the Forbes Middle East) list from "The 50 Most Powerful Companies in Egypt for 2022" as they include the most profitable and highest companies in terms of market value and assets. The results show that During the COVID-19 pandemic, several companies experienced varying impacts on their operations as TMG, SODIC, Juhayna, EZZ Steel, and GB Auto faced challenges due to shortages in raw materials, coupled with disruptions in supply chains. These obstacles delayed productivity, which had a negative financial impact on the Financial Performance of the companies. On the other hand, companies such as Fawry, Telecom, and IDH thrived during this period. Fawry capitalized on the increased demand for digital payment solutions, while Telecom benefited from heightened reliance on communication services Additionally, IDH experienced positive growth as a result of the surge in demand for healthcare products and services.

KEYWORDS

Financial Distress, Financial Performance, COVID-19, Liquidity, Profitability, Return on Asset, Corporate Governance

1- INTRODUCTION

Financial distress is a pressing issue in nearly all markets worldwide. It is a well-known topic among students of corporate finance globally, especially in developing countries. The concept of financial distress, or the failure of companies, has been prominent since the 1930s, particularly in the United States of America (Kawshala, 2018). Predicting financial distress is crucial for companies in today's era of globalization, as it could lead to bankruptcy if not addressed promptly. Shum Way (2001) defines financial distress as a situation in which a company is unable to meet its financial obligations, both short-term and long-term liabilities (Affandi, 2015).

Financial issues are a common occurrence within companies. Continuous financial problems can exacerbate a company's condition, leading to financial distress. In such cases, management may struggle to monitor the company's financial health, thereby increasing business risk. Financial distress typically begins with liquidity pressures that intensify over time, followed by declining assets, ultimately rendering the company unable to fulfill its financial obligations and pushing it toward bankruptcy (Liahmad, 2021). Addressing financial distress has become imperative, as it impacts not only the employees of the company but also shareholders, lenders, and other stakeholders. It significantly affects job security for managers and employees, as well as the equity position of stakeholders and the claims of lenders, which are often left unsecured (Bum, 2007; Kawshala, 2018).

The remainder of the paper is structured as follows: Section 2 presents the literature review and hypotheses development, Section 3 outlines the empirical methodology employed, including the sample, data collection, and measurement of variables. The results of the empirical analysis are reported in Section 4, while Section 5 concludes the paper.

2- THEORETICAL BACKGROUND

Various theories can delineate the attributes of a financially distressed firm, select predictors, and rationalize the relationship between these predictors. These theories, including Liquid Asset Theory, Liquidity and Profitability Theory, Balance Sheet Decomposition Measure, Cash Management Theory, and Credit Risk Theory, have been notably utilized by Altman and Hotchkiss (2006).

Liquid Asset Theory contends that financial distress is contextualized within cash flow dynamics. It asserts that net cash flows relative to current liabilities serve as the primary criterion for describing a firm's financial distress state. Firms with positive cash flows can augment capital and access capital markets for borrowing, whereas those with negative or insufficient cash inflows face default risks due to borrowing constraints. This theory suggests that a firm might face bankruptcy if its current year's profit or net cash flow is negative or falls short of its debt obligations, a condition termed technical insolvency. Technical insolvency arises when a firm cannot meet its immediate financial commitments, indicating liquidity deficiency (Altman & Hotchkiss, 2006; Isayas, 2021).

Liquidity and Profitability Theory, according to Hashi (1997), asserts that firms exhibiting favorable liquidity and profitability indicators are deemed healthy, while those with poor indicators are considered unhealthy and prone to bankruptcy. High and positive levels of these indicators suggest a lower bankruptcy risk. However, even if a firm demonstrates good profitability, it can still face failure if its growth rate substantially exceeds its internal rate of return,

resulting in insufficient cash flow to cover expenses and obligations, particularly if heavily indebted. The firm's profitability should surpass its growth rate (Isayas, 2021).

Balance Sheet Decomposition Measure theory (BSDM) suggests that identifying financially distressed firms involves scrutinizing significant changes in their balance sheets (Aziz & Dar, 2006). Substantial shifts in asset and liability composition over time indicate an inability to maintain balance, forewarning impending financial distress (Monti & Moriano, 2010).

Cash Management Theory emphasizes the criticality of cash balance management for every firm. Accurately predicting cash flows, particularly inflows, poses challenges, often leading to mismatches between cash inflows and outflows. Continual imbalances between these flows can precipitate financial distress due to cash management failures, ultimately resulting in business collapse. Effective fund utilization is crucial for firms to evade distress situations (Aziz & Dar, 2006; Vincent, 2019; Isayas, 2021).

Credit Risk Theory elucidates why firms experience financial distress, attributing it to inadequate credit risk management. Credit risk pertains to the likelihood of counterparties failing to meet obligations, directly imperiling the organization's survival. Sound credit risk management, including robust credit risk policies, is vital to identify, assess, and mitigate credit risk. High credit risk often foreshadows financial distress (Ikpesu, 2019).

Liquidity Risk Theory, as posited by Westgaard and Wijst (2001), defines liquidity risk as the likelihood of a borrower defaulting on repayment to a bank. Liquidity Risk closely tracks business cycles, with economic downturns exacerbating downgrades and defaults. Macroeconomic variables such as unemployment rates, interest rates, growth rates, government expenditures, foreign exchange rates, and aggregate savings influence a firm's default probability. Liquidity Risk denotes investors' exposure to losses from borrowers failing to meet contractual obligations (Nyunja, 2011; Isayas, 2021).

Financial Theory suggests that financial distress causative factors can be endogenous (internal) or exogenous (external). Internal factors, such as fraud and ineffective resource allocation, affect specific firms or industries, whereas external factors, such as pandemics and global recessions, impact all market players. Internal risks, like inefficient communication among management levels, may precipitate financial distress, whereas external risks, like economic downturns, are beyond firms' control (Binti & Ameer, 2010; Karugu et al., 2018; EL Deeb, 2020).

According to Tradeoff Theory, firms must devise operational strategies to minimize financial distress costs or reduce its likelihood. Financial distress incurs direct costs, such as legal fees, and indirect costs, like decreased operational efficiency. While direct costs are relatively minor, indirect costs are significant, including revenue declines and loss of market share. Given its severe consequences, firms prioritize strategies to mitigate financial distress, including embracing social responsibility initiatives to bolster morale and potentially avert distress (Farooq, 2022; Zheng, 2019).

3- LITERATURE REVIEW

When a company faces financial distress, several warning signs emerge, many of which are discernible in its financial statements. Prolonged periods of negative cash flows, where outflows surpass inflows, often indicate financial trouble. Another reliable indicator is the debt-to-equity ratio, which compares a company's debt to its shareholders' equity, offering insight into debt default risk. Audits of financial statements frequently reveal these warning signs. Additionally, changes in business strategy or management, such as deviating from traditional models or sudden key personnel departures, can also be red flags (MCCLURE, 2021).

Financial distress becomes apparent when a company consistently experiences losses, breaches loan agreements, and struggles to fulfill obligations. Chow et al. (2011) suggest that inadequate operating cash flows to meet current commitments prompt actions like mergers, acquisitions, capital issuance, and restructuring. Almilia and Herdiningtyas (2005) and Darmawan (2018) define financial distress as failure to meet creditor obligations due to insufficient funds, with assets less than liabilities, and an inability to achieve profitability objectives. This scenario leads to financial pressures, such as poor performance and recurring losses, hindering debt repayment. Distressed firms often witness declining equity due to continuous losses and cash shortages allocated to operating expenses (Campbell et al., 2011; Handoko, 2020).

According to Baldwin & P. Mason (1983), a firm enters financial distress when it can't fulfill its financial obligations due to business deterioration. Early signs include covenant violations and reduced or omitted dividends. Conversely, Pindado (2005) and Ward (1997) found financially distressed firms typically incur consecutive years of negative earnings, leading to cumulative losses and weakened performance. Karugu et al. (2018) note that financial distress is common in developing economies due to insolvency, low liquidity, and cash flow problems, often stemming from high leverage and lack of recovery plans. Even in developed economies, financial distress can arise from preferential debt financing over equity. The repercussions include inadequate cash flow to cover liabilities and high debt levels (EL Deeb, 2020).

Financial distress is evident in firms experiencing years of negative net operating income, suspending dividends, restructuring, or conducting significant layoffs (Platt & Platt 2002; Ufo, 2015). Symptoms may manifest before financial distress, according to Elloumi and Gueyié (2001) and Guilherme Freitas Cardoso (2019). Studies identify internal and external factors contributing to financial distress, including poor management, overtrading, inadequate working capital management, market demand shifts, excessive leverage, competition, commodity price fluctuations, and loss of confidence from stakeholders (Vincent, 2019). Brigham and Daves (2004) attribute financial distress to operational errors, managerial decisions, and management-related weaknesses. High debt levels, operational losses, and cash flow issues are internal causes, leading to the disappearance of non-debt tax shields (Liahmad, 2021). Idrees and Qayyum (2018) and Lee et al. (2017) cite high leverage and poor industry performance as primary causes, exacerbated by insufficient cash flow and window dressing activities (EL Deeb, 2020).

Indicators such as sales decline due to reduced consumer demand, distressed companies measured by asset turnover, working capital, net income-to-assets, and base lending rates signify financial distress (Darmawan, 2018). Debt ratio and times interest earned ratios are also telling. Ratios exceeding 1 or less than 1 respectively signal cash flow challenges and potential insolvency (Hu & Ansell, 2005; Fallahpour et al., 2017; EL Deeb, 2020). Leverage ratios, reflecting external and internal financing, indicate asset units financed by capital units. While high leverage may boost profits, it heightens the risk of financial distress (Zeli, 2014).

Financial performance evaluation relies on ratios like liquidity, profitability, asset return, solvency, and capital turnover. Models such as the Altman Z-score or five-factor model gauge their collective impact on financial health and distress diagnosis (Affandi, 2015). Earnings per share are commonly used and strongly influence market value (Graham et al., 2005). Studies confirm a negative correlation between financial distress and performance, with highly leveraged firms exhibiting poor performance (Affandi, 2015).

4- HYPOTHESES DEVELOPMENT

Research examining the impact of financial distress on profitability remains limited. Financial distress at each stage can affect a firm's profitability significantly. It plays a crucial role in a firm's operations and profitability by influencing cost implications, including administrative and legal costs associated with the bankruptcy process (both direct and indirect financial distress costs) (Betker, 1997; Beaver, 1966). Financial distress often leads to reduced profitability and cash shortages. It's crucial to analyze financial distress not only through balance sheet ratios but also by assessing profit and loss and cash flow statements (Pranowo et al., 2010). Additionally, liquidity, indicating a firm's ability to meet short-term obligations, has been identified as a critical determinant of corporate financial distress in various studies. Nahar's (2006) study revealed that increased liquidity decreases corporate financial distress, while Thim et al. (2011) found a negative relationship between liquidity and financial distress. However, conflicting results were reported by Gathecha (2016) and Kristanti et al. (2016), indicating a positive association between liquidity and financial distress (Isayas, 2021).

Based on previous studies, several hypotheses can be proposed:
H1: There is no statistically significant impact of liquidity on the financial performance of companies.

Financial distress may exacerbate profitability issues in firms due to deteriorating cash flow and declining revenue or operating income over time. Financial distress is expected to impact operating income, leading to short-term insolvency and hindering the firm's capabilities by limiting working capital and increasing debt. Furthermore, improving profitability, such as through increasing the gross profit to total sales ratio, enhances the firm's solvency, thereby reducing the risk of financial distress. Conversely, a low gross profit to total sales ratio signals a higher likelihood of financial distress, indicating firms on the brink of financial trouble. Thus, for various reasons, financial distress diminishes a firm's profitability. Improving debt service coverage enhances a firm's profitability, reducing the likelihood of financial distress (Ufo, 2015).

Campbell et al. (2005) examined the determinants of corporate failure and the pricing of financially distressed stocks using the dynamic logit model. Their findings suggest that lower profitability increases the likelihood of financial distress, leading to a higher probability of bankruptcy. Therefore, it implies a negative relationship between profitability and financial distress. Return on assets (ROA) is commonly used to measure profitability (Ohlson, 1980; Lo, 1986; Gombola et al., 1987) and indicates a firm's ability to generate profits. Low profitability suggests the firm's inability to convert revenue into profits efficiently. Higher profitability is associated with a lower probability of financial distress (Lian et al., 2011; Zeli, 2014).

Proposed hypotheses based on previous studies:
H2: There is no statistically significant impact of profitability on the financial performance of companies.
H3: There is no statistically significant impact of return on assets on the financial performance of companies.

The impact of leverage on financial distress is substantial. Leverage affects financial distress through two main pathways: operational risk and financial risk (Shim and Siegel, 1998). High leverage may exacerbate financial distress in firms by impeding debt repayment, increasing insolvency, and potentially leading to bankruptcy. Ogawa (2003) suggests that corporate debt can hinder investment by creating debt overhang. A firm's leverage is a critical factor that negatively influences the level of financial distress (Andrade and Kaplan, 1998). Increasing leverage heightens a firm's financial distress (Lee et al., 2010; Outecheva, 2007). Financial distress is often seen as an intermediate state between solvency and insolvency, occurring when a firm misses interest payments or violates debt covenants (Purnanandam, 2005). While leveraging may offer tax benefits initially, beyond a certain point, increased leverage raises the firm's risk of financial distress, with associated costs outweighing benefits (Opler and Titman, 1994; Ufo, 2015).

Based on previous studies, the following hypothesis can be derived:
H4: There is no statistically significant impact of solvency on the financial performance of companies.

Studies examining the effect of financial distress on efficiency are crucial, as a firm's efficiency or turnover ratios gauge its productive use of assets, significantly impacted by financial distress (Brealey et al., 2000). Firm efficiency, measured by EBITD/TA (Altman, 1983), indicates the firm's ability to swiftly utilize its assets within a year, influencing its financial distress. A firm's capital intensity affects financial distress by mitigating its severity, as higher capital intensity implies more fixed assets that could serve as collateral during financial distress (Charalambakis, Espenlaub & Garrett, 2008). Financial distress can impair a firm's efficiency by reducing the productivity of its assets. Assets that generate lower returns contribute to lower profitability ratios and decrease the EBITDA/TA ratio, leading to financial distress. A firm's inefficiency due to financial distress lowers its asset performance and efficiency. Improving efficiency, such as by increasing the EBITD/TA ratio, enhances a firm's productivity, thereby reducing the likelihood of financial distress. A low EBITDA/TA ratio signals a higher probability of financial distress, indicating firms in a precarious financial position. Therefore, for various reasons, financial distress reduces a firm's efficiency.

Enhancing debt service coverage improves a firm's efficiency, minimizing the incidence of financial distress (Ufo, 2015).

Based on previous studies, the following hypothesis can be proposed:
H5: There is no statistically significant impact of capital turnover on the financial performance of companies.

5- RESEARCH METHODOLOGY

5.1 Target Sample

The target sample is companies in Egypt from 2017 to 2022. The sample include 11 companies which are (TMG, Juhayna, EZZ Steel, GB auto, Integrated Diagnostics Holding (IDH), MM Group for industry and international trade, Telecom Egypt, Sixth of October Development and Investment (SODIC), ElSewedy Electric, EFG-Hermes holding, and Fawry for electronic payment) according to the common between of them as the magazine (the Forbes Middle East) list from "The 50 Most Powerful Companies in Egypt for 2022" as they include the most profitable and highest companies in terms of market value and assets.

5.2 Data Collection

Data collection is defined as the procedure for collecting, measuring, and analyzing accurate insights for research using approved standard techniques. The researcher can evaluate the information in the assistant work system that is developed. The most important objective of data collection is to ensure that informative and reliable data are collected for statistical analysis so that data-based decisions can be made for the research. Our research data were collected from the financial statements of these companies: TMG, Juhayna, EZZ Steel, GB auto, Integrated Diagnostics Holding (IDH), Telecom Egypt, Sixth of October Development and Investment (SODIC), and Fawry for electronic payment.

5.3 Analytical Model

The Z-score model was developed by American finance professor Edward Altman in 1968 to measure the financial stability of companies. Altman used a combination of five different ratios in his classic model to measure the financial health of the companies, which are liquidity, profitability, solvency, capital turnover, and return on assets.
The study utilized regression analysis with an equation of the form:
$Y= a+ b1X1 + b2X2 + b3X3 + b4X4 + b5X5$

5.4 Research Variables

	Empirical Proxy	Formula/Method
X1	Liquidity	Working Capital/Total Assets
X2	Profitability	Retained Earnings/Total Assets
X3	Return On Assets	EBIT/Total Assets
X4	Solvency	Market value of Equity/Total Liabilities
X5	Capital Turnover	Net Sales/Total Assets

5.5 Data Analysis

The data used in this research consists of a sample of 11 companies listed in Egypt. Yearly data is collected for the variables of the research, which are liquidity, profitability, return on assets, solvency, and capital turnover. These variables were collected from EViews, an econometric tool. They serve as proxies for measuring financial distress. The data covers the period from 2017 to 2022.

The companies involved in the analysis are as follows:

- Juhayna company: A leading Egypt-based manufacturer specialized in the production, processing, and packaging of dairy, juice, and cooking products.
- Integrated Diagnostics Holding company: A leading consumer healthcare company in the Middle East and Africa with operations in Egypt, Jordan, Sudan, and Nigeria, proudly woman-led.
- Ezz Steel company: The Middle East's leading steel producer and a major player in the global steel marketplace. Ezz Steel has the capacity to produce 7 million tons of long and flat steel products per year at four state-of-the-art steelmaking plants across Egypt.
- Telecom company: Committed to being the best source of total communication solutions, while dedicating its resources to building a better tomorrow for its employees and community through responsive services and honest business practices.
- GB auto company (Ghabbour Auto): With over 8 decades of experience in the automotive industry, GB Auto is now a market leader famous for its reputable service offerings.
- SODIC company: A customer-focused mixed-use developer.
- TMG company (Talaat Moustafa Group Holding): A leading conglomerate with special emphasis on developing integrated communities, including but not limited to mixed-use real estate and hospitality projects across Egypt's key cities, with a land bank of 53 million square meters.
- Fawry for Electronic Payment company: A vision to bring electronic bill payment to a country where traffic congestion and complex procedures were daily challenges plaguing consumers.

In order to assess the impact of financial distress on these companies, a correlation analysis and a multiple regression model are performed. The variables were used as the dependent variable, while EPS (earnings per share) were used as the independent variables.

The multiple regression equation can be written as:

$$\hat{\mathbf{y}} = \boldsymbol{b_0} + \boldsymbol{b_1 x_1} + \boldsymbol{b_2 x_2}$$

Where:

$\hat{\boldsymbol{y}}$ earnings per share

$\boldsymbol{x_1}$ liquidity

$\boldsymbol{x_2}$ profitability

X3 return on assets

X4 solvency

X5 capital turnover

At first, a descriptive analysis is performed for the variables before building the regression model to gain a deeper understanding of the variables at hand. In addition, a correlation analysis is done to examine the linear relationship between the variables and assess its statistical significance.

The overall regression model is tested for significance once the regression coefficients are estimated using the ANOVA (F-test), and the coefficients of the regression model that are estimated are tested using the t-test. The adjusted coefficient of determination (R-square) is used in assessing the model fit and accuracy.

A regression model is built in which the variable (y) earnings per share, and the variable (x) is the measure for the financial distress they are the liquidity, profitability, capital turnover, solvency and return on assets. The result of the regression model estimation if there is a relationship between the variables.

Integrated Diagnostic Holding Company

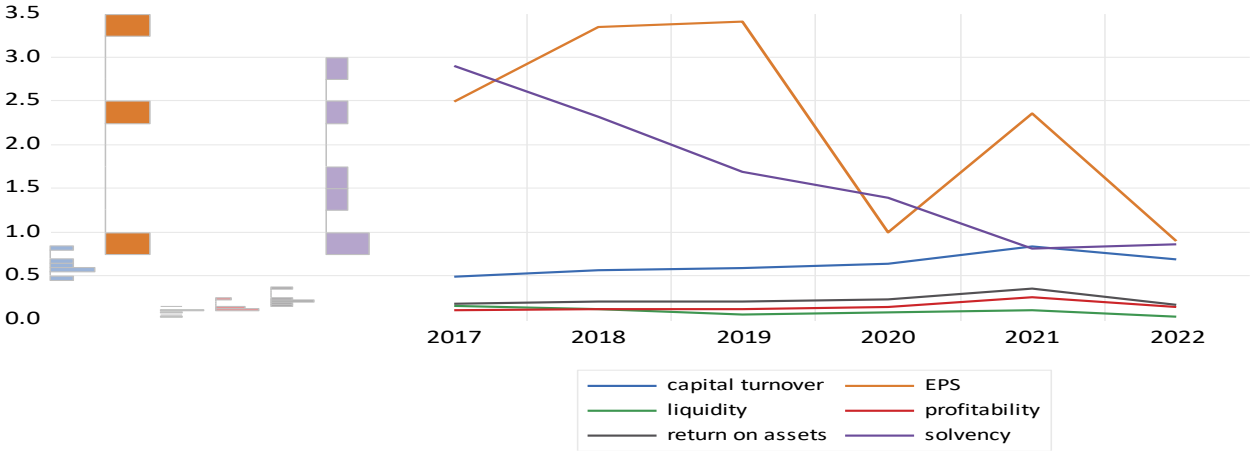
Table 1: Descriptive Statistics of IDH

	CT	EPS	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	0.632235	2.248333	0.092113	0.146604	0.223563	1.662101
Median	0.614360	2.420000	0.097622	0.133012	0.205395	1.538700
Maximum	0.837818	3.410000	0.158867	0.248710	0.357968	2.900865
Minimum	0.486616	0.900000	0.030255	0.101502	0.161181	0.811905
Std. Dev.	0.120549	1.098479	0.045704	0.053022	0.070225	0.826741
Skewness	0.659079	-0.251879	0.064069	1.362646	1.320114	0.401845
Kurtosis	2.581712	1.501607	2.009924	3.466310	3.409959	1.793412
Jarque-Bera	0.478126	0.624738	0.249168	1.911165	1.784718	0.525443
Probability	0.787365	0.731711	0.882864	0.384588	0.409688	0.768956
Sum	3.793412	13.49000	0.552679	0.879623	1.341376	9.972604
Sum Sq. Dev.	0.072661	6.033283	0.010444	0.014057	0.024657	3.417500
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of Capital Turnover is 0.486616, the maximum amount is 0.837818, which means that the average of capital turnover is 0.632235, Furthermore The minimum amount of EPS is 0.900000, the maximum amount is 3.410000, which means that the average of EPS is 2.248333, Furthermore The minimum amount of Liquidity is 0.030255, the maximum amount is 0.158867, which means that the average of Liquidity is 0.092113, Furthermore The minimum amount of Profitability is 0.101502, the maximum amount is 0.248710, which means that the average of Profitability is 0.146604, Moreover the minimum amount of ROA is 0.161181, the maximum amount is 0.357968, which means that the average of ROA is 0.223563, Moreover the minimum amount of Solvency is 0.811905, the maximum amount is 2.900865, which means that the average of Solvency is 1.662101.

Figure 1: Histogram Axis of IDH



Done by researchers using the EViews software

The histogram indicates that earning per share (Y) increases from 2017 to 2019, but due to pandemic COVID-19 decreases from 2019 to 2020, then increases from 2020 to 2021, then decreases from 2021 to 2022.

The solvency was relatively high but suddenly decreased till 2022 and that happened because of COVID-19.

Table 2: Multiple Regression of IDH

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 22:22
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	-27.05178	9.340877	-2.896064	0.2117
LIQUIDITY	-80.15682	23.57658	-3.399850	0.1821
PROFITABILITY	101.9137	44.06694	2.312701	0.2598
ROA	11.26213	10.43731	1.079026	0.4758
SOLVENCY	5.582471	1.579966	3.533284	0.1756

R-squared	0.958195	Mean dependent var	2.248333
Adjusted R-squared	0.790973	S.D. dependent var	1.098479
S.E. of regression	0.502218	Akaike info criterion	1.335344
Sum squared resid	0.252223	Schwarz criterion	1.161810
Log likelihood	0.993968	Hannan-Quinn criter.	0.640674
Durbin-Watson stat	2.823047		

Done by researchers using the EViews software

Capital turnover has a negative effect on the financial performance of Integrated diagnostic holding company, Furthermore Liquidity has a negative effect on the financial performance of Integrated diagnostic holding company, Furthermore Profitability has a positive effect on the financial performance of Integrated diagnostic holding company, moreover ROA has a positive effect on the financial performance of integrated diagnostic holding company, moreover Solvency has a positive effect on the financial performance of integrated diagnostic holding company.

Telecom Company

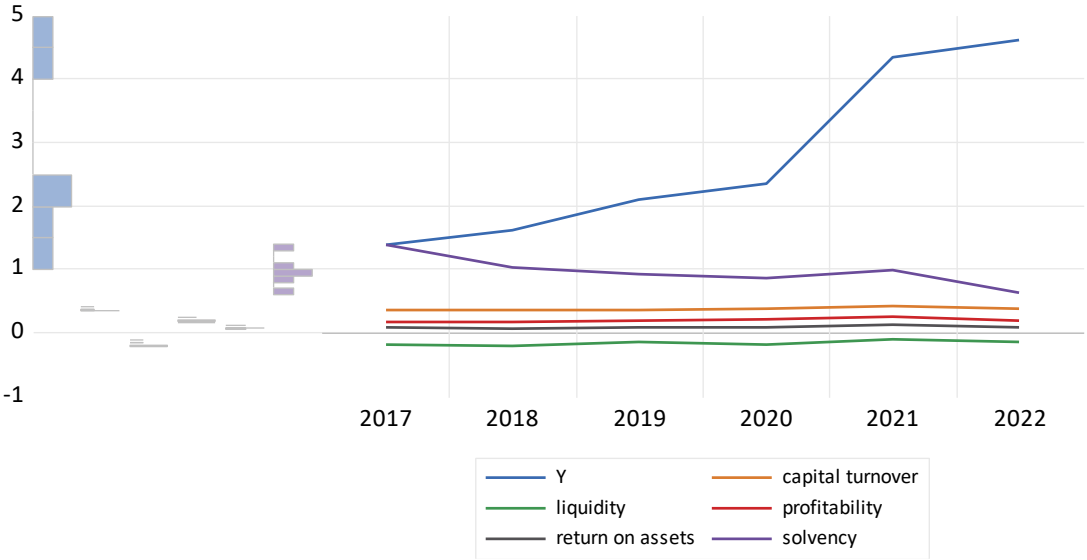
Table 3: Descriptive statistic of Telecom

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	2.731667	0.370190	-0.169036	0.191350	0.084387	0.964318
Median	2.225000	0.362790	-0.176141	0.188472	0.076745	0.949558
Maximum	4.610000	0.412593	-0.107798	0.246382	0.123771	1.376933
Minimum	1.380000	0.352281	-0.207177	0.162922	0.069615	0.628416
Std. Dev.	1.396043	0.023132	0.040195	0.030528	0.020507	0.246231
Skewness	0.531377	1.115080	0.429450	0.958359	1.379311	0.455436
Kurtosis	1.531624	2.907432	1.712530	2.854678	3.391420	2.737477
Jarque-Bera	0.821393	1.245546	0.598822	0.923731	1.940801	0.224652
Probability	0.663188	0.536455	0.741255	0.630107	0.378931	0.893753
Sum	16.39000	2.221139	-1.014216	1.148102	0.506324	5.785906
Sum Sq. Dev.	9.744683	0.002675	0.008078	0.004660	0.002103	0.303149
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of capital turnover is 0.352281, the maximum amount is 0.412593, which means that the average of capital turnover is 0.370190, Furthermore The minimum amount of EPS is 1.380000, the maximum amount is 4.610000, which means that the average of EPS is 2.731667, Furthermore The minimum amount of Liquidity is -0.207177, the maximum amount is -0.107798, which means that the average of liquidity is -0.169036, Furthermore The minimum amount of Profitability is 0.162922, the maximum amount is 0.246382, which means that the average of profitability is 0.191350, Moreover The minimum amount of ROA is 0.069615, the maximum amount is 0.123771, which means that the average of ROA is 0.084387, Moreover The minimum amount of Solvency is 0.628416, the maximum amount is 1.376933, which means that the average of solvency is 0.964318.

Figure 2: Histogram Axis of Telecom



Done by researchers using the EViews software

The histogram reveals the efficient management of this company which takes effective decisions and fast corrective actions even if they face a pandemic. So, the earnings per share (Y) indicator sustains an increase from 2017 to 2022. But 2020 was one of the most successful moments for the company in this period.

The solvency decreased gradually from 2017 till 2022.

Table 4: Multiple Regression of Telecom

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 22:26
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	39.70461	37.28784	1.064814	0.4800
LIQUIDITY	13.11631	26.22043	0.500232	0.7047
PROFITABILITY	-65.48581	55.79155	-1.173759	0.4492
ROA	72.97802	80.49531	0.906612	0.5312
SOLVENCY	-3.502327	1.655364	-2.115744	0.2811

R-squared	0.948161	Mean dependent var	2.731667
Adjusted R-squared	0.740804	S.D. dependent var	1.396043
S.E. of regression	0.710744	Akaike info criterion	2.029899
Sum squared resid	0.505157	Schwarz criterion	1.856365
Log likelihood	-1.089697	Hannan-Quinn criter.	1.335229
Durbin-Watson stat	2.226202		

Done by researchers using the EViews software

Capital Turnover has a positive effect on the financial performance of Telecom company, Furthermore Liquidity has a positive effect on the financial performance of Telecom company, Furthermore Profitability has a negative effect on the financial performance of Telecom company, Moreover ROA has positive effect on the financial performance of Telecom company, Moreover Solvency has negative effect on the financial performance of Telecom company.

SODIC Company

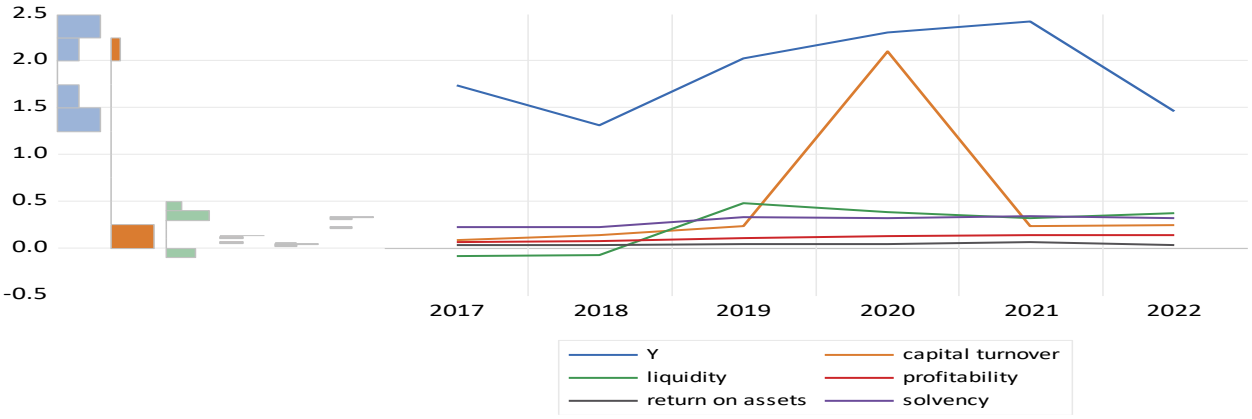
Table 5: Descriptive Statistic of Sodic

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	1.875000	0.503502	0.231086	0.103804	0.039024	0.290052
Median	1.880000	0.233338	0.342730	0.113625	0.037566	0.317992
Maximum	2.420000	2.096429	0.479731	0.135430	0.064112	0.336757
Minimum	1.310000	0.086866	-0.086661	0.057078	0.023379	0.216362
Std. Dev.	0.449077	0.782923	0.246645	0.033483	0.014777	0.056080
Skewness	-0.030488	1.762398	-0.559063	-0.473967	0.699166	-0.649541
Kurtosis	1.494082	4.153923	1.524628	1.567483	2.399992	1.503775
Jarque-Bera	0.567877	3.438930	0.856732	0.737671	0.578836	0.981576
Probability	0.752813	0.179162	0.651573	0.691539	0.748699	0.612144
Sum	11.25000	3.021011	1.386513	0.622825	0.234142	1.740313
Sum Sq. Dev.	1.008350	3.064846	0.304168	0.005606	0.001092	0.015725
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of capital turnover is 0.086866, the maximum amount is 2.096429, which means that the average of capital turnover is 0.503502, Furthermore The minimum amount of EPS is 1.310000, the maximum amount is 2.420000, which means that the average of EPS is 1.875000, Furthermore The minimum amount Liquidity is -0.086661, the maximum amount is 0.479731, which means that its average is 0.231086 , Furthermore The minimum amount profitability is 0.057078, the maximum amount is 0.135430, which means that its average is 0.103804, Moreover The minimum amount ROA is 0.023379, the maximum amount is 0.064112, which means that its average is 0.039024, Moreover The minimum amount Solvency is 0.216362, the maximum amount is 0.336757, which means that its average is 0.290052.

Figure 3: Histogram Axis of Sodic



Done by researchers using the EViews software

The histogram shows that earnings per share (Y) decreases from 2017 to 2018, then increases from 2018 to 2021 even though there was pandemic COVID-19 back then and decreases from 2021 to 2022.

Table 6: Multiple Regression of Sodic

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 22:30
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	0.167283	0.128497	1.301837	0.4170
LIQUIDITY	-0.255389	0.575546	-0.443733	0.7341
PROFITABILITY	-5.793566	6.885631	-0.841399	0.5547
ROA	21.09025	7.903702	2.668401	0.2283
SOLVENCY	5.613393	2.684808	2.090799	0.2840

R-squared	0.956867	Mean dependent var	1.875000
Adjusted R-squared	0.784334	S.D. dependent var	0.449077
S.E. of regression	0.208550	Akaike info criterion	-0.422364
Sum squared resid	0.043493	Schwarz criterion	-0.595898
Log likelihood	6.267093	Hannan-Quinn criter.	-1.117034
Durbin-Watson stat	2.258792		

Done by researchers using the EViews software

Capital Turnover has a positive effect on the financial performance of Sodic company, Furthermore Liquidity has a negative effect on the financial performance of Sodic company, Furthermore Profitability has a negative effect on the financial performance of Sodic company due to COVID-19, Moreover ROA has a positive effect on the financial performance of Sodic company, Moreover Solvency has a positive effect on the financial performance of Sodic company.

TMG Company

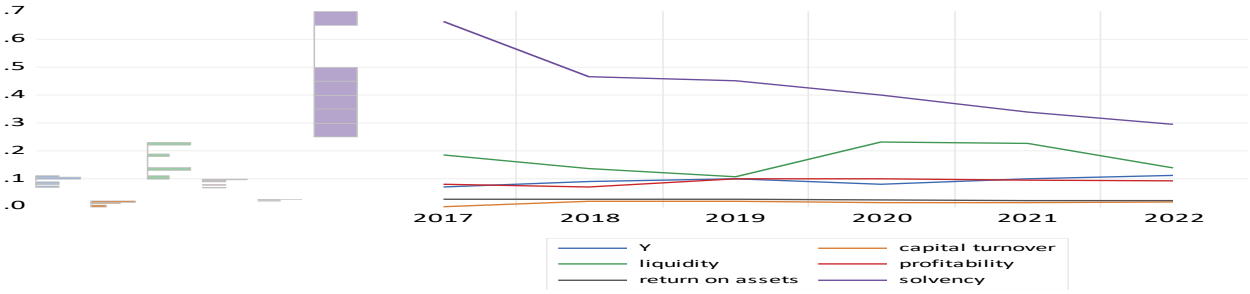
Table 7: Descriptive Statistic of TMG

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	0.091667	0.013633	0.169961	0.087991	0.023132	0.434503
Median	0.095000	0.015197	0.161015	0.091644	0.023323	0.424352
Maximum	0.110000	0.018961	0.229913	0.097655	0.026089	0.663071
Minimum	0.070000	0.000000	0.106721	0.069961	0.020414	0.293572
Std. Dev.	0.014720	0.006983	0.051124	0.011075	0.002369	0.129437
Skewness	-0.305316	-1.453180	0.104690	-0.735925	-0.012643	0.831147
Kurtosis	1.848284	3.623388	1.436813	2.054519	1.366819	2.747106
Jarque-Bera	0.424830	2.208885	0.621848	0.765068	0.666980	0.706794
Probability	0.808629	0.331396	0.732769	0.682131	0.716419	0.702298
Sum	0.550000	0.081797	1.019765	0.527945	0.138793	2.607019
Sum Sq. Dev.	0.001083	0.000244	0.013068	0.000613	2.81E-05	0.083770
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of Capital turnover is 0.000000, the maximum amount is 0.018961, which means that its average is 0.013633, Furthermore The minimum amount of EPS 0.070000, the maximum amount is 0.110000, which means that its average is 0.091667, Furthermore The minimum amount of Liquidity is 0.106721, the maximum amount is 0.229913, which means that its average is 0.169961, Furthermore The minimum amount of profitability is 0.069961, the maximum amount is 0.097655, which means that its average is 0.087991, Moreover The minimum amount of ROA is 0.020414, the maximum amount is 0.026089, which means that its average is 0.023132, Moreover The minimum amount of Solvency is 0.293572, the maximum amount is 0.663071, which means that its average is 0.434503.

Figure 4: Histogram Axis of TMG



Done by researchers using the EViews software

The histogram indicates that earnings per share (Y) increases from 2017 to 2019 and during pandemic COVID-19 it decreases from 2019 to 2020 then it increases from 2020 to 2022.

Solvency was high in 2017, then it decreases gradually till 2022.

Table 8: Multiple Regression of TMG

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 22:36
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	-9.617646	4.517188	-2.129122	0.2795
LIQUIDITY	0.194633	0.131635	1.478579	0.3786
PROFITABILITY	-1.533904	0.986365	-1.555109	0.3638
ROA	31.50959	12.58380	2.503981	0.2419
SOLVENCY	-0.930296	0.378699	-2.456561	0.2461

R-squared	0.919806	Mean dependent var	0.091667
Adjusted R-squared	0.599031	S.D. dependent var	0.014720
S.E. of regression	0.009321	Akaike info criterion	-6.638237
Sum squared resid	8.69E-05	Schwarz criterion	-6.811771
Log likelihood	24.91471	Hannan-Quinn criter.	-7.332907
Durbin-Watson stat	3.473834		

Done by researchers using the EViews software

Capital turnover has a negative effect on the financial performance of TMG company, Furthermore Liquidity has a positive effect on the financial performance of TMG company, Furthermore Profitability has a negative on the financial performance of TMG company, Moreover ROA has a positive on the financial performance of TMG company, Moreover Solvency has negative on the financial performance of TMG company.

EZZ Steel Company

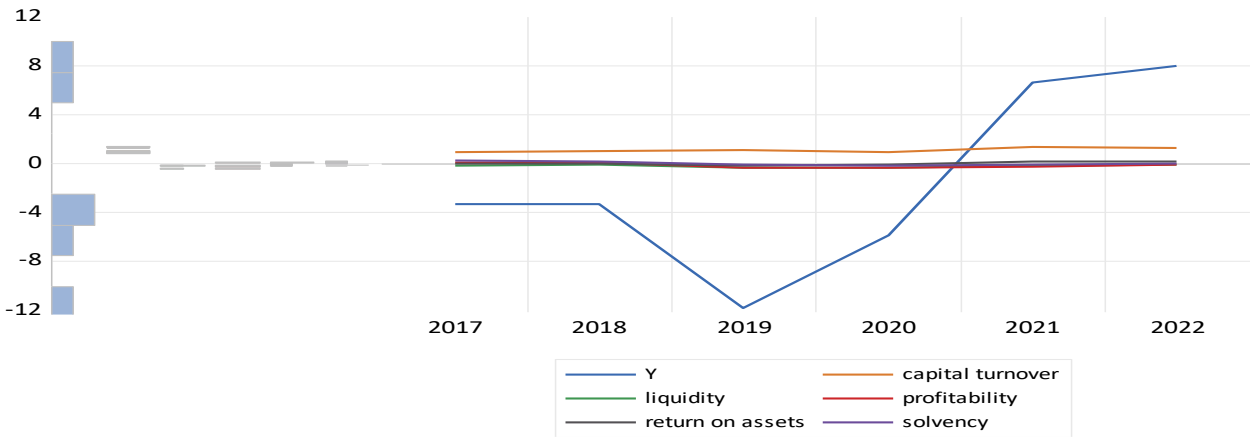
Table 9: Descriptive Statistic of EZZ Steel

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	-1.606667	1.078851	-0.204328	-0.145778	-0.004612	0.013017
Median	-3.290000	1.025320	-0.158655	-0.180126	-0.001419	-0.017663
Maximum	7.980000	1.355702	-0.076234	0.100754	0.143354	0.233382
Minimum	-11.81000	0.895673	-0.364806	-0.362889	-0.186995	-0.173197
Std. Dev.	7.577785	0.193077	0.121666	0.198341	0.131938	0.153320
Skewness	0.145075	0.473160	-0.472784	0.242830	-0.142994	0.295133
Kurtosis	1.759954	1.612377	1.524026	1.440634	1.677138	1.737976
Jarque-Bera	0.405475	0.705255	0.768150	0.666872	0.457938	0.485280
Probability	0.816493	0.702839	0.681080	0.716458	0.795353	0.784554
Sum	-9.640000	6.473105	-1.225969	-0.874666	-0.027673	0.078105
Sum Sq. Dev.	287.1141	0.186394	0.074013	0.196696	0.087038	0.117536
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of capital turnover is 0.895673, the maximum amount is 1.355702, which means that the average of capital turnover is 1.078851, Furthermore, the minimum amount of Liquidity is -0.364806, the maximum amount is -0.076234, and the average is -0.204328. The minimum amount of EPS -11.81000, the maximum amount 7.980000, and the average is -1.606667. Furthermore, the minimum amount of Profitability is -0.362889, the maximum amount is 0.100754, which means that the average of profitability is -0.145778, Moreover the minimum amount of ROA is -0.186995, the maximum amount is 0.143354, which means that the average is -0.004612. The minimum amount of Solvency is -0.173197, the maximum amount is 0.233382, which means that the average is 0.013017.

Figure 5: Histogram Axis of EZZ Steel



Done by researchers using the EViews software

The histogram shows that the earnings per share (Y) is stable from 2017 to 2018, then with the entry of the coronavirus, the (Y) decreased from 2018 to 2019. But the company succeeded in taking effective corrective actions which enhances its Y from 2019 to 2022.

Table 10: Multiple Regression of EZZ Steel

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 22:56
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	-0.927383	4.366066	-0.212407	0.8668
LIQUIDITY	10.20275	22.47664	0.453927	0.7287
PROFITABILITY	-11.64819	18.70069	-0.622875	0.6454
ROA	55.81854	18.74991	2.977003	0.2063
SOLVENCY	-0.157685	20.88053	-0.007552	0.9952

R-squared	0.988254	Mean dependent var	-1.606667
Adjusted R-squared	0.941270	S.D. dependent var	7.577785
S.E. of regression	1.836426	Akaike info criterion	3.928427
Sum squared resid	3.372460	Schwarz criterion	3.754893
Log likelihood	-6.785280	Hannan-Quinn criter.	3.233757
Durbin-Watson stat	3.260423		

Done by researchers using the EViews software

Capital turnover has a negative effect on the financial performance of EZZ steel company, Furthermore Liquidity has a positive effect on the financial performance of EZZ steel company, Furthermore Profitability has a negative effect on the financial performance of EZZ steel company, Moreover ROA has a positive effect on the financial performance of EZZ steel company, Moreover Solvency has a negative effect on the financial performance of EZZ steel company.

Fawry Company

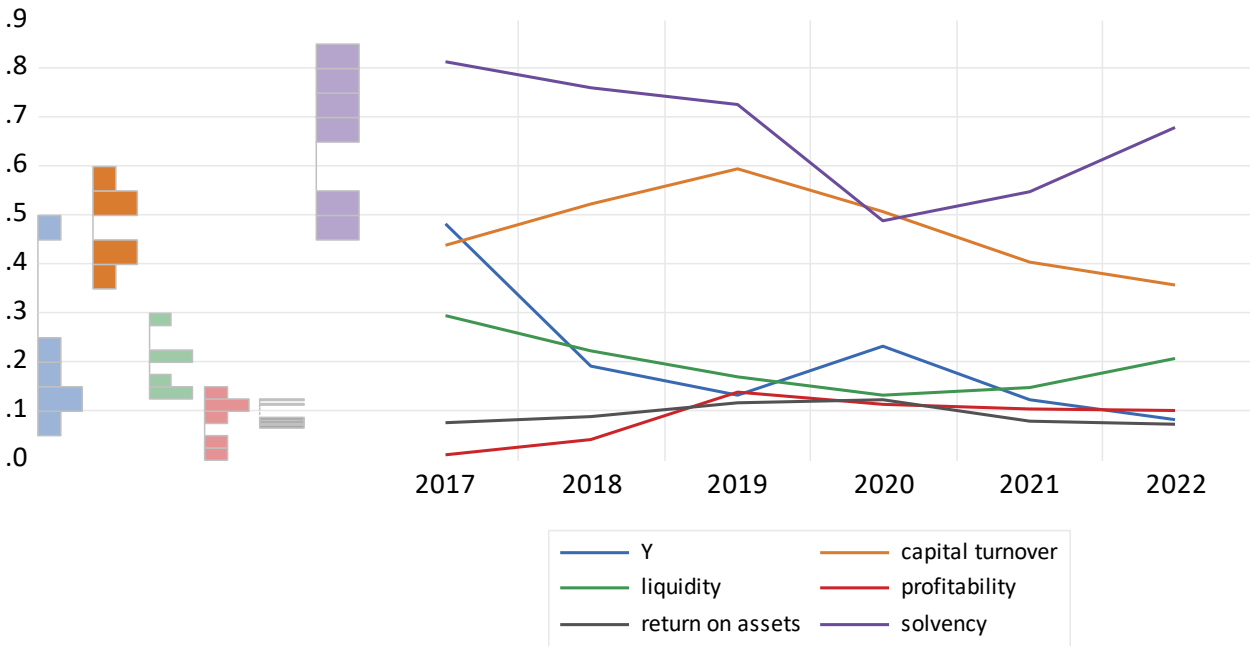
Table 11: Descriptive Statistic of Fawry

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	0.205000	0.469752	0.193341	0.081795	0.089999	0.668735
Median	0.160000	0.473180	0.185914	0.098847	0.081376	0.701708
Maximum	0.480000	0.592983	0.293048	0.135022	0.120588	0.814179
Minimum	0.080000	0.354829	0.130581	0.007733	0.069203	0.487518
Std. Dev.	0.144879	0.087343	0.059756	0.047890	0.022112	0.126931
Skewness	1.283836	0.070019	0.645361	-0.588632	0.560067	-0.399493
Kurtosis	3.294328	1.800687	2.280909	1.916846	1.547968	1.689616
Jarque-Bera	1.669893	0.364490	0.545764	0.639793	0.840775	0.588871
Probability	0.433898	0.833397	0.761183	0.726224	0.656792	0.744952
Sum	1.230000	2.818514	1.160047	0.490768	0.539995	4.012412
Sum Sq. Dev.	0.104950	0.038144	0.017854	0.011467	0.002445	0.080558
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of Capital turnover is 0.354829, the maximum amount is 0.592983, which means that its average is 0.469752, Furthermore The minimum amount of Liquidity is 0.130581, the maximum amount is 0.293048, which means that its average is 0.193341, Furthermore The minimum amount of Profitability is 0.007733, the maximum amount is 0.135022, which means that its average is 0.081795, Moreover The minimum amount of ROA is 0.069203, the maximum amount is 0.120588, which means that its average is 0.089999, Moreover The minimum amount of Solvency is 0.487518, the maximum amount is 0.814179, which means that its average is 0.668735. The minimum amount of EPS is 0.080000, the maximum amount is 0.480000, which means that its average is 0.205000.

Figure 6: Histogram Axis of Fawry



Done by researchers using the EViews software

The histogram demonstrates that company's earnings per share (Y) was in declining from 2017 to 2019. And although corona was a global crisis and created problems for many companies, Fawry had a good share in that the pandemic positively affected the Y, and people used electronic payment more. So, Y increased from 2019 to 2020. But it is clear that the company's management is weak, which led to decrease in Y from 2020 to 2022.

The solvency was high in 2017, then it starts to decrease slightly and declined significantly due to COVID-19 till 2020, then it starts to increase till 2022.

Table 12: Multiple Regression of Fawry

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 23:01
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	3.420888	5.184418	0.659840	0.6287
LIQUIDITY	8.957560	8.969773	0.998638	0.5004
PROFITABILITY	2.146144	5.756654	0.372811	0.7728
ROA	-8.862435	19.44520	-0.455765	0.7278
SOLVENCY	-3.752563	4.301560	-0.872373	0.5433

R-squared	0.920313	Mean dependent var	0.205000
Adjusted R-squared	0.601566	S.D. dependent var	0.144879
S.E. of regression	0.091450	Akaike info criterion	-2.071138
Sum squared resid	0.008363	Schwarz criterion	-2.244672
Log likelihood	11.21342	Hannan-Quinn criter.	-2.765808
Durbin-Watson stat	2.935028		

Done by researchers using the EViews software

Capital turnover has a positive effect on the financial performance of Fawry company, Furthermore Liquidity has a positive effect on the financial performance of Fawry company, Furthermore Profitability has a positive effect on the financial performance of Fawry company, Moreover ROA has a negative effect on the financial performance of Fawry company, Moreover Solvency has a negative effect on the financial performance of Fawry company.

GB Auto Company

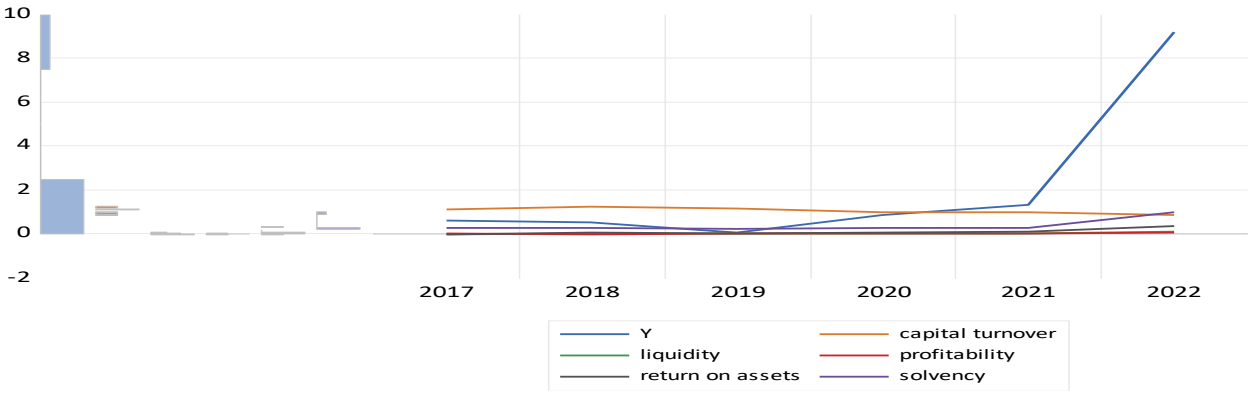
Table 13: Descriptive statistic of GB Auto

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	2.075667	1.039746	0.006875	0.005732	0.077605	0.363667
Median	0.727000	1.040866	0.000545	0.000913	0.049704	0.248888
Maximum	9.175000	1.225004	0.074405	0.052577	0.326436	0.975271
Minimum	0.039000	0.860519	-0.021604	-0.024741	-0.046894	0.216635
Std. Dev.	3.502090	0.133573	0.034711	0.026273	0.129112	0.300008
Skewness	1.733914	0.039950	1.419642	0.864790	1.338647	1.778490
Kurtosis	4.101945	1.776820	3.599279	2.886479	3.535001	4.181723
Jarque-Bera	3.310029	0.375638	2.105167	0.751083	1.863532	3.512144
Probability	0.191089	0.828765	0.349035	0.686917	0.393858	0.172722
Sum	12.45400	6.238475	0.041251	0.034392	0.465632	2.182000
Sum Sq. Dev.	61.32318	0.089209	0.006024	0.003451	0.083349	0.450025
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of Capital turnover is 0.860519, the maximum amount is 1.225004, which means that its average is 1.039746, Furthermore The minimum amount of Liquidity is -0.021604, the maximum amount is 0.074405, which means that its average is 0.006875, Furthermore The minimum amount of Profitability is -0.024741, the maximum amount is 0.052577, which means that its average is 0.005732, Moreover The minimum amount of ROA is -0.046894, the maximum amount is 0.326436, which means that its average is 0.077605, Moreover The minimum amount of Solvency is 0.216635, the maximum amount is 0.975271, which means that its average is 0.363667. The minimum amount of EPS is 0.039000, the maximum amount is 9.175000, which means that its average is 2.075667.

Figure 7: Histogram Axis of GB Auto



Done by researchers using the EViews software

The histogram shows that earnings per share (Y) decreases from 2017 to 2019, then increases from 2019 to 2021, and from 2021 to 2022 the increase appears significantly.

Table 14: Multiple Regression of GB Auto

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 23:10
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	-2.145786	0.339055	-6.328716	0.0998
LIQUIDITY	-22.22307	9.683935	-2.294839	0.2616
PROFITABILITY	-4.193381	9.302998	-0.450756	0.7304
ROA	7.159910	2.780178	2.575342	0.2358
SOLVENCY	10.81237	1.145208	9.441403	0.0672

R-squared	0.999313	Mean dependent var	2.075667
Adjusted R-squared	0.996566	S.D. dependent var	3.502090
S.E. of regression	0.205215	Akaike info criterion	-0.454612
Sum squared resid	0.042113	Schwarz criterion	-0.628146
Log likelihood	6.363836	Hannan-Quinn criter.	-1.149282
Durbin-Watson stat	2.754629		

Done by researchers using the EViews software

Capital turnover has a negative effect on the financial performance of GB auto company, Furthermore Liquidity has a negative effect on the financial performance of GB auto company, Furthermore Profitability has a negative effect on the financial performance of GB auto company, Moreover ROA has a positive effect on the financial performance of GB auto company, Moreover Solvency has a positive effect on the financial performance of GB auto company.

Juhanya Company

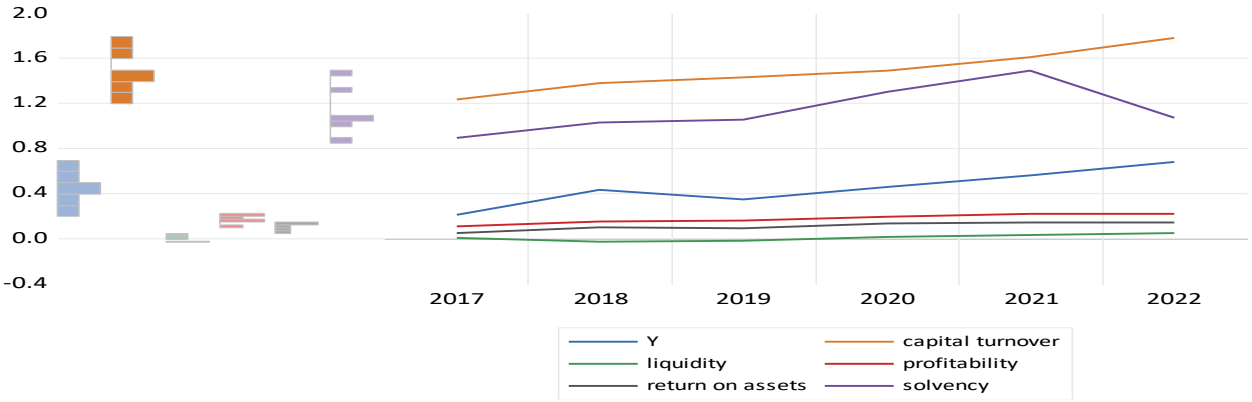
Table 15: Descriptive Statistic of Juhanya

	Y	CT	LIQUIDITY	PROFITABI...	ROA	SOLVENCY
Mean	0.448333	1.489634	0.010085	0.176303	0.108333	1.138652
Median	0.445000	1.461978	0.011809	0.177560	0.115000	1.061807
Maximum	0.680000	1.784181	0.049716	0.222688	0.140000	1.488472
Minimum	0.210000	1.232865	-0.024791	0.106704	0.050000	0.890443
Std. Dev.	0.163146	0.190756	0.029425	0.044872	0.035449	0.216421
Skewness	-0.033680	0.289177	0.014585	-0.388392	-0.646993	0.637319
Kurtosis	2.153245	2.218203	1.659689	1.925655	2.116732	2.152669
Jarque-Bera	0.180383	0.236425	0.449321	0.439403	0.613641	0.585668
Probability	0.913756	0.888507	0.798787	0.802758	0.735783	0.746146
Sum	2.690000	8.937804	0.060509	1.057819	0.650000	6.831914
Sum Sq. Dev.	0.133083	0.181939	0.004329	0.010067	0.006283	0.234191
Observations	6	6	6	6	6	6

Done by researchers using the EViews software

The minimum amount of Capital turnover is 1.232865, the maximum amount is 1.784181, which means that its average is 1.489634, Furthermore The minimum amount of Liquidity is -0.024791, the maximum amount is 0.049716, which means that its average is 0.010085, Furthermore The minimum amount of Profitability is 0.106704, the maximum amount is 0.222688, which means that its average is 0.176303, Moreover The minimum amount of ROA is 0.050000, the maximum amount is 0.140000, which means that its average is 0.108333, Moreover The minimum amount of Solvency is 0.890443, the maximum amount is 1.138652, which means that its average is 1.138652. The minimum amount of EPS is 0.210000, the maximum amount is 0.680000, which means that its average is 0.448333.

Figure 8: Histogram Axis of Juhanya



Done by researchers using the EViews software

The histogram indicates that earnings per share (Y) increases from 2017 to 2018, then from 2018 to 2019 it decreases, then increases from 2019 to 2022.

The solvency increases gradually from 2017 till 2021, and then decreases from 2021 to 2022.

Table 16: Multiple Regression of Juhanya

Dependent Variable: Y
Method: Least Squares
Date: 05/09/23 Time: 23:16
Sample: 2017 2022
Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CT	0.170214	0.239172	0.711682	0.6062
LIQUIDITY	0.514909	1.285871	0.400436	0.7575
PROFITABILITY	0.202311	4.678939	0.043239	0.9725
ROA	4.179427	4.389321	0.952181	0.5156
SOLVENCY	-0.262248	0.171561	-1.528603	0.3688

R-squared	0.971997	Mean dependent var	0.448333
Adjusted R-squared	0.859987	S.D. dependent var	0.163146
S.E. of regression	0.061047	Akaike info criterion	-2.879454
Sum squared resid	0.003727	Schwarz criterion	-3.052988
Log likelihood	13.63836	Hannan-Quinn criter.	-3.574124
Durbin-Watson stat	2.530154		

Done by researchers using the EViews software

Capital turnover has a positive effect on the financial performance of juhanya company, Furthermore Liquidity has a positive effect on the financial performance of juhanya company, Furthermore Profitability has a positive effect on the financial performance of juhanya company, Moreover ROA has a positive effect on the financial performance of juhanya company, Moreover Solvency has a negative effect on the financial performance of juhanya company.

It is concluded from the results of the multiple regression that overall; it is statistically significant and can be used for prediction.

As usual, the companies over the years are ups and downs but the main fluctuations happened from 2019 till 2020 due to COVID-19.

There are companies whose operations do not affect from COVID-19 like Telecom Egypt, SODIC, EFG, Ezz Steel, Fawry, Juhayna, and other companies that got affected in a negative way like MM group, TMG, GB auto, IDH, El sewedey electric.

Solvency is the most variable that was affected by COVID-19 among the others in the majority of the companies.

Table 17: Unit Root Test

Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=0)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.80944	0.0030
Test critical values:	1% level	-8.033476	
	5% level	-4.541245	
	10% level	-3.380555	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 3

Done by researchers using the EViews software

Found the probability 0.0030 at first difference which indicates using VAR (vector autoregression model).

Table 18: VAR (Vector Autoregression Model)

Vector Autoregression Estimates
Date: 05/09/23 Time: 23:30
Sample (adjusted): 2019 2022
Included observations: 4 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	Y
Y(-1)	0.965424 (0.38205) [2.52698]
Y(-2)	0.808901 (0.29669) [2.72644]
C	-0.215167 (0.18203) [-1.18206]
R-squared	0.947654
Adj. R-squared	0.842963
Sum sq. resids	0.003113
S.E. equation	0.055797
F-statistic	9.051886
Log likelihood	8.641005
Akaike AIC	-2.820502
Schwarz SC	-3.280782
Mean dependent	0.512500
S.D. dependent	0.140801

Done by researchers using the EViews software

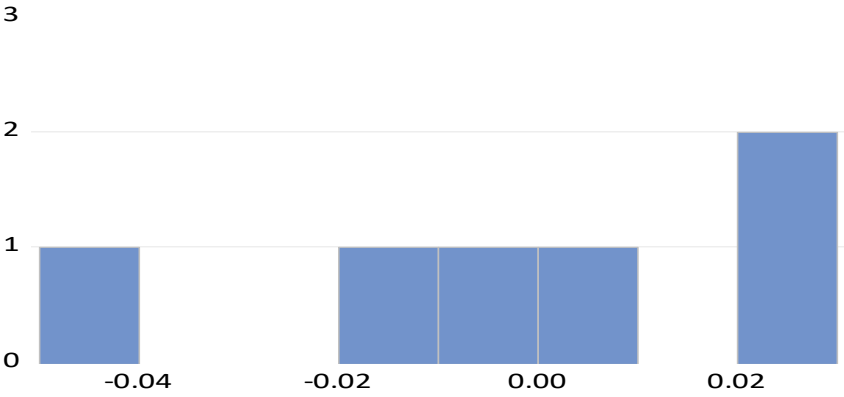
Interpretation:

According to the t-statistic all the variables are more than 2% so that mean that they are all significant.

While y (-1) & y (-2) have direct relation due to the t-statistic the C have an inverse relation.

The R-squared is 0.94 approximate to 94% which indicate that all the variables have a positive relation and constant.

Table 19: Normality Test



Series: Residuals
Sample 2017 2022
Observations 6

Mean	-0.000246
Median	0.000163
Maximum	0.028929
Minimum	-0.042679
Std. Dev.	0.027300
Skewness	-0.350400
Kurtosis	2.028408
Jarque-Bera	0.358778
Probability	0.835781

Done by researchers using the EViews software

The residual is normally distributed as the probability is more than 5%.

6. SUMMARY AND CONCLUSION

The research objective of this study is to provide an early warning for companies that may face financial distress. In order to fulfill this objective, we collected data about 11 companies from 2017 to 2022.

Our results indicate the following findings for selected companies:

- Integrated Diagnostics Holding (IDH) company:

  Capital turnover has a negative effect on the financial performance, Liquidity has a negative effect on the financial performance, Profitability has a positive effect on the financial performance, return on assets (ROA) has a positive effect on the financial performance, Solvency has a positive effect on the financial performance.

- Telecom company:

  Capital turnover has a positive effect on the financial performance, Liquidity has a positive effect on the financial performance, Profitability has a negative effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a negative effect on the financial performance.

- SODIC company:

  Capital turnover has a positive effect on the financial performance, Liquidity has a negative effect on the financial performance, Profitability has a negative effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a positive effect on the financial performance.

- TMG company:

  Capital turnover has a negative effect on the financial performance, Liquidity has a positive effect on the financial performance, Profitability has a negative effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a negative effect on the financial performance.

- EZZ steel company:

  Capital turnover has a negative effect on the financial performance, Liquidity has a positive effect on the financial performance, Profitability has a negative effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a negative effect on the financial performance.

- Fawry company:

  Capital turnover has a positive effect on the financial performance, Liquidity has a positive effect on the financial performance, Profitability has a positive effect on the financial performance, ROA has a negative effect on the financial performance, Solvency has a negative effect on the financial performance.

- GB auto company:

  Capital turnover has a negative effect on the financial performance, Liquidity has a negative effect on the financial performance, Profitability has a negative effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a positive effect on the financial performance.

- Juhayna company:

  Capital turnover has a positive effect on the financial performance, Liquidity has a positive effect on the financial performance, Profitability has a positive effect on the financial performance, ROA has a positive effect on the financial performance, Solvency has a negative effect on the financial performance.

It is concluded from the results of the multiple regression that overall, it is statistically significant and can be used for prediction. As usual, the companies experienced ups and downs over the years, but the main fluctuations occurred from 2019 till 2020 due to COVID-19. Some companies were negatively affected by the pandemic, while others gained benefits. Solvency is the most variable that was affected by COVID-19 among others in the majority of the companies.

We recommend that companies develop a perfect strategic management plan to enhance their financial performance and avoid financial distress. Additionally, we suggest using other financial distress prediction models such as Springate, Fulmer, Taffler, Grover, Ohlson, and Zmijewski in future studies.

Overall During the COVID-19 pandemic, several companies experienced varying impacts on their operations as TMG, SODIC, Juhayna, EZZ Steel, and GB Auto faced challenges due to shortages in raw materials, coupled with disruptions in supply chains. These obstacles delayed productivity, which had a negative financial impact on the Financial Performance of the companies. On the other hand companies such as Fawry, Telecom, and IDH thrived during this period. Fawry capitalized on the increased demand for digital payment solutions, while Telecom benefited from heightened reliance on communication services Additionally, IDH experienced positive growth as a result of the surge in demand for healthcare products and services.

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