T The effect of financial flexibility on profitability and sustainable growth rate in the Corona pandemic era: Evidence from Egyptian stock market

Dalida Mohamed Adel Eldawayaty[1]

Accounting Lecturer
Accounting Department, Faculty of Management Sciences
October University for Modern Sciences and Arts (MSA), Egypt
Email: damadel@msa.edu.eg

Abstract Financial flexibility enables companies to avoid financial distress and bankruptcy, especially during times of crisis. Studying the repercussions of the Corona pandemic on companies' financial policies has become important at the academic and practical levels. This paper aims to investigate the effect financial flexibility on profitability and sustainable growth rate. In addition, to test the direct and moderating effect of Corona pandemic on the research variables. Using 410 observations gathering from non-financial companies listed on Egyptian stock market from 2016 to 2023. The results showed significant positive effect of financial flexibility on profitability and sustainable growth rate. Moreover, Corona pandemic has a negative impact on profitably, while it had insignificant effect on sustainable growth rate. No moderating impact had found for that pandemic on the interest relationship. The findings highlight financial policy makers to pay attention in achieving a balance between increasing profits while maintaining the capital structure and sustainable growth.

Keywords: *financial flexibility; profitability; sustainable growth rate; Coronavirus pandemic.*

JEL Codes: *M 41, G32, L25*

[1]ORCID iD: 000-0002-7530-3044.

.

Introduction

In response to market dynamism, environmental challenges, and competition intensity, financial flexibility plays an effective role in the success and continuity of business organizations. Financial flexibility refers to the company's ability to achieve two objectives simultaneously. The first objective is the company's ability to manage efficiently its liquid funds, represented by cash and cash equivalents. The second objective is the company's ability to settle its debt level in a way that achieves optimal allocation of resources, reduces its risks, and improves its operational efficiency. Thus, financial flexibility has become the main driver for achieving sustainable performance (Sheng & An, 2024).

In addition, company's financial flexibility refers to its ability to reduce its risks and make optimal use of its resources to meet various financial challenges in its business environment. Firms with high level of flexibility have the ability to obtain the necessary financing to seize their investment opportunities from various financing sources and at the lowest financing cost, even in conditions of uncertainty and crises (Gamba & Triantis, 2008; Teng et al., 2021). Financial flexibility can be defined as the company's ability to respond to unexpected fluctuation in cash and investment opportunities, and for that response to be timely and maximize the company's value (Denis, 2011).

In today's highly competitive markets, firms are fighting to survive and achieve a growth rate that enables them to continue in the market. In accounting literature, reliance was placed on the percentage of increase in sales or total assets to express the growth rate without taking into consideration the company's financing policies. To achieve consistency between the desired growth goals in light of existing financing policies, the concept of the sustainable growth rate (hereafter SGR) appeared. This concept appeared in the seventies by Babcock (1970) and Higgins (1977). Firm finance theory distinguishes between the internal growth rate and the SGR. The internal growth rate relates to the company's reliance on its internal sources without resorting to external sources of financing.While the SGR relates to the company achieving desired growth rates in light of maintaining the stability of the existing capital structure ratio (Marcus, 2012).

Using SGR analysis provides the company with an integrated framework capable of determining the operational and financial characteristics to focus on improve performance. It also gives indications of the extent to which its sales growth rate is in line with its financial policy (Harkleroad, 1993). Firms that want to keep their target ratio dividends payout to shareholders within the existing capital structure without issuing new shares must maintain its SGR. In that case, SGR expresses the increasing percentage of sales that fit the financing policy. Some authors (e.g.

Bouzgarrou et al., 2017; Hossain & Khalid, 2018) relied on profitability indicators and their resilience to the global financial crisis. From this standpoint, profitability will be analyzed in light of the Corona pandemic and the extent to which the impact of this pandemic on the profitability of business institutions will be identified**.** The spread of the Corona pandemic forced countries and governments around the world to close a large part of their economy and resources, which had the greatest impact on the financial balance of countries and companies as well. Achieving a growth rate is one of the most important goals of any company by achieving high rates of profitability, acquiring a large group of customers, and entering several markets (Vasiu & Ilie, 2018). But is this growth sustainable and resilient to crises such as the Corona pandemic? This is what the SGR answers. Many researchers (e.g., Amouzesh et al., 2011; Rahim, 2017) have tested the relationship between SGR and a company's financial performance. While Akhtar et al. (2022) used the SGR as one of the financial performance indicators.

The research problem revolves around companies' exposure to highly competitive challenges. These companies must maintain several balances related to financial flexibility and their ability to seize investment opportunities, achieve profitability, and achieve the desired growth rate in light of maintaining the capital structure and resilience in the face of crises. Corona pandemic declined the Egyptian growth from 3.6% (2019/2020) to 3.3% (2020/ 2021) (World Bank, 2021). To react for these adverse circumstances, Egyptian government provide some procedures such as allocating 100 billion EGP to mitigate the impact and repercussions of this crisis, providing loans with reduced interest rate, and supported affected sectors (MPED, 2020).

 A review of previous studies revealed a scarcity of studies that addressed the impact of financial flexibility on the SGR in international and Arab business environments in general and the Egyptian environment as well. In addition, there is shortage in studies related to Corona pandemic, financial flexibility and/ or SGR directly. Some studies (e.g. Sheng & An, 2024; Teng et al., 2021; Hao et al., 2022) focused on the relationship between financial flexibility and sustainable performance in general. While Abdulkareem et al. (2023) focus on testing the association between financial flexibility and SGR in specific. However, there is a lack of studies dealing specially with the relationship between financial flexibility and SGR. In Egyptian market, some authors (e.g. Omara & Rashed, 2023; Almaleeh et al., 2024) focused on financial flexibility. While others (e.g. Ali, 2022; El Madbouly, 2022; Wassef et al., 2024) tested SGR with other variables. There is a lack of Egyptian studies that testing the impact of financial flexibility on profitability and SGR during and post Corona pandemic.

Concerning final results, Some authors (e.g. Ali & Siddiqui, 2020; Teng et al., 2021; Hao et al., 2022; Abdulkareem et al., 2023; Wu et al., 2024) found a positive

relationship between financial flexibility and performance, while others (e.g. Yi, 2020; Sheng & An, 2024) found a U-shape relationship. Because of the inconsistency in previous results, the research questions can be formed as follows: (1) Does the financial flexibility affect profitability? (2) Is there any relationship between financial flexibility and SGR in Egyptian companies? (3) Does Coronavirus pandemic affect the profitability or/ and SGR of Egyptian companies? (4) Is there a moderating role of Coronavirus pandemic on the relationship between financial flexibility, profitability and SGR?

In response to above research problem and questions, this paper aims to examine the effect of financial flexibility on profitability and SGR. In addition, it tests the direct effect of Corona pandemic on profitability and SGR. Moreover, it investigates the moderating effect of Corona pandemic on the relationship between financial flexibility, profitability and SGR in Egyptian stock market.

The research sample consists of 410 observation of nonfinancial companies listed on Egyptian stock market (EGX 100) from 2016 to 2023. Foss (2021) and Appaih et al. (2022) criticized previous studies that dealt with the relationship between the Corona pandemic and performance by relying on a short period, without relying on data for a long period for a deeper analysis of the relationship. In response to this shortage, this paper focuses on three years post pandemic to test the effect of Corona various from 2021 to 2023. Financial flexibility equals the summation of cash and debt flexibility. Return on assets is used as an indicator for profitability, while SGR was measured by multiply four ratios; Profit margin, asset turnover, debt to assets and retention ratios.

The author adopted a two-way analysis[2] of the impact of the Corona pandemic on the basic variables of the study (e.g. Kijkasiwat & Phuensame, 2020; Naseer et al., 2024). The first direction is to test the direct impact of that pandemic on the dependent variables. The second direction examines the traditional moderating effect of the relationship between the independent and dependent variables of the research. For Corona pandemic, some authors (e.g. Neukirchen et al., 2022; Kumar & Zabib, 2022) used small period from 3 February to 23 march 2020. While others (e.g. Hu & Zhang, 2021; Acharya at al., 2022) focused on first quarter in 2020). Alsamhi et al. (2022) depended on first two quarters from 2020. Some studies (e.g. Li et al., 2022; Shen et al., 2020; Bose et al., 2022; Xiazi & Shabir, 2022) focused on year 2020. Following the latest studies, year 2020 will be used as an indicator for Corona pandemic.

The descriptive results across years showed that year 2020 during the Corona pandemic recorded the lowest average value of profitability (3.6%) and the

---

[2] Testing the direct and moderating effect of a variable, this relationship is known as quasi-moderator variable (Sharma et al., 1981; Söderlund, 2023).

highest average was 10.6% for year 2023. For SGR, the lowest average value was 0.03% for year 2019 comparing with the highest value of 5.2% for year 2023. At the same context, the descriptive results across different sectors showed the lowest average for profitability (-0.08%) recorded for travel and leisure sector. This confirms the serious damage to the tourism sector as a result of this crisis. The lowest SGR (-0.04%) for textile and Durables sector. The industrial and automobiles sector recorded the highest average value for profitability (20.9%) and SGR (14.7%).

The regression results showed a significant positive impact of financial flexibility on profitability and SGR overall research sample. Corona pandemic has a significant negative direct effect on profitability an insignificant effect on SGR. In addition, there were no moderating effect for Corona pandemic on the relationship between financial flexibility, profitability and SGR.

For more understanding, the author divided the sample into three groups covering the period before, during and after Corona to identify the extent of the impact of financial flexibility on profitability and SGR. The results indicated a significant increase in the impact of financial flexibility on profitability in the period pre and post Corona pandemic comparing with during the pandemic. Regarding SGR, the results indicated significance impact of financial flexibility on SGR during the pre-pandemic period and insignificance effect during and post pandemic. That emphasizes the importance of investigating the consequences of the crisis over relatively long periods.

This paper contributes in reducing the research gap by verifying the strength and sustainability of the company's performance in the face of various crises. This research adopts a more comprehensive approach in analyzing the relationship between financial flexibility, profitability and SGR. The impact of the Corona pandemic on the company's profitability rates will be tested as an indicator of its annual growth as well as testing the impact of this pandemic on its sustainable growth.

To achieve the research objective, the research plan is included six main parts. First part is the introduction above. Second part relates to literature review. Then third part presents research methodology. Fourth part explains results. Then fifth part reports discussion. Finally, sixth part summarizes Conclusions.

Literature Review
Financial flexibility, profitability and SGR

One of the most important challenges facing managers understands factors associated with financial decisions. They used to rely on agency costs and market inefficiency for analysing different scenarios instead of relying on understanding financial flexibility. Financial flexibility can reduce the problems of investments falling below the required level if there are obstacles to accessing financing resources. Moreover, it also helps avoid costs associated with financial distress (Rapp et al., 2014). According to the theory of finance, companies should not maintain high levels of liquidity, because this means losing valuable investment opportunities in the market, and they can even increase the level of cash required to seize this investment depending on external sources of financing or an increase in issued shares. Myers & Majluf (1984) presented a model that balances the level of cash and the ratio of debt to equity without resorting to external sources of financing.

Many researchers have been interested in studying SGR and its relationship to many factors, such as governance mechanisms, in an integrated manner (e.g. Lin 2024; Agha, 2023). Other studies focused on a specific element of those mechanisms, such as the percentage of women's representation on the board of directors (e.g. Ain et al. 2022; Ellili, 2024), and CEO characteristics (e.g. Liu et al., 2023; Wang et al., 2023). While others (e.g. Zhang et al., 2020; Lin 2024) were interested in the relationship between SGR and corporate social responsibility (e.g. Zhang et al., 2020; Lin 2024). Meanwhile, the relation between SGR innovation and sustainable disclosure had been interest to some researchers (e.g. Ocak & Findik, 2019; Ionita & Dinu, 2021; Bagh et al., 2022; Firmansyah & Kartiko, 2024).

In the context of analyzing a company's operational efficiency and overall performance. Some studies (e.g. Mamilla, 2019; Mumu et al., 2019; Ramli et al., 2022) testing relationship between different financial characteristics such as profitability, leverage, liquidity, asset turnover with SGR before Corona pandemic in different countries like India, Indonesia and Malaysia. They reached to a positive effect of independent variables on SGR except financial leverage has a negative impact on SGR.

Concerning financial flexibility, Many studies (e.g. Arslan-Ayaydin et al., 2014; Arora et al., 2018; Yi, 2020; Ali & Siddiqui, 2020) focused on examining the impact of financial flexibility on corporate performance in Asian countries. For example, Arslan-Ayaydin et al. (2014) tested the impact of financial flexibility on East Asian companies during East Asian crisis and credit crisis. At the same context, Arora et al. (2018) analysed different measurements of SGR in Indian manufacturing companies from 1998 to 2014. Ali & Siddiqui (2020) examined this relationship in Pakistani companies' from 2009 to 2018. Wu et al. (2024) applied their study depending on sample from American firms. All above

studies found a positive effect for financial flexibility on different measurements of performance. While Yi (2020) examined those interest variables using sample of manufacturing companies listed on Shenzhen and Shanghai stock market from 2011 to 2017. He found inverted U shape relationship.

Some authors (e.g. Sheng & An, 2024; Teng et al., 2021; Hao et al., 2022) have been interested in studying the financial flexibility' effect on sustainable performance. For instance, Sheng & An (2024) tested the financial flexibility's influence on sustainable performance. They measured sustainable performance as combined indicator consists of environmental social performance and financial performance. Depending on sample of manufacturing sector only for companies listed on Shenzhen and Shanghai stock market. They found a U-shape relationship between financial flexibility and sustainable performance. While, Hao et al. (2022) tested the interest variables at the same market and they reached to a positive effect of financial flexibility on sustainable innovations. Continuing on to the Asian market, Teng et al. (2021) tested the financial flexibility's impact on sustainable development depending on sample of Taiwanese manufacturing firms. The results showed significant positive impact on firm performance. Moreover, Kong (2022) investigate the effect of financial flexibility on sustainable innovations. He found financial flexibility enhance sustainable innovations and financial constrains moderates this relationship. Concerning studies in the Middle East, Altahtamouni et al. (2022) analyzed the relationship between component of SGR and financial performance on sample of Saudi banks. They found a significant relationship between sustainable growth and both of retained earnings and return on equity. More specifically, Abdulkareem et al. (2023) tested the impact of financial flexibility on sustainable growth gap on sample of public companies listed on Iraq stock market. They found a significant positive relationship between financial flexibility and SGR.

Regarding the Egyptian studies that dealt with any of the study variables in a combined or individual manner, the researcher did not find -according to her knowledge- a foreign or Egyptian study that merge between all the interest research variables in one context. However, previous Egyptian studies varied in terms of their treatment of some variables separately. For example, Ali (2022) examined the relationship between SGR as an independent variable on the financial performance of Egyptian companies. The results indicated a positive impact of the sustainable growth rate on financial performance.

Furthermore, some studies (e.g. El Madbouly, 2022; Wassef et al., 2024) focused on testing determinants of SGR. For example, El Madbouly (2022) tested five determinants: financial leverage, liquidity, profitability, asset efficiency, and size during the period from 2015 to 2019. The results showed a positive effect

profitability, financial leverage, and asset efficiency on SGR. While size has a negative impact on SGR and no significant relationship with liquidity. In a similar context. Wassef et al. (2024) studied the same previous determinants but replacing firm size by dividends policy from 2012 to 2022. They found negative impact for profitability and leverage on SGR. While dividend has a negative impact. Both asset efficiency and liquidity had no effect on SGR.

Concerning financial flexibility, some authors (e.g. Omara & Rashed, 2023; Al,aleeh et al., 2024) studied financial flexibility with other variables. Omara & Rashed (2023) examined the effect of financial flexibility on investment efficiency with the moderating effect of board expertise in Egyptian firms from 2014 to 2021. They found positive effect of financial flexibility on the dependent variable. Moreover, the board expertise decreased that impact as a moderator variable. At the same direction, Almaleeh et al. (2024) tested the effect of CEO power on financial flexibility and corporate governance as a moderator variable. They found a positive impact of the independent variable on financial flexibility and board diversity affected negatively that relationship.

The above analysis showed increased interest in both financial flexibility and SGR. Many researchers (e.g. Liu et al., 2023; Wang et al., 2023; Zhang et al., 2020; Lin 2024) have been interested in studying SGR with other variables. Others (e.g. Arslan-Ayaydin et al., 2014; Altahtamouni et al., 2022; Wu et al., 2024) examined the relationship between financial flexibility and firm performance generally. On the other side, few authors focused on the relationship between financial flexibility and sustainable performance in general (e.g. Sheng & An, 2024; Teng et al., 2021; Hao et al., 2022). While Abdulkareem et al. (2023) focus on testing the relationship between financial flexibility and SGR in specific. However, there is a lack of studies dealing specially with the relationship between financial flexibility and SGR.

On the other hand, a review of previous studies showed that some authors like Arslan-Ayaydin et al. (2014) focused on studying variables of interest in several countries. Wu et al. (2024) applied their testing depending on American companies. While others (e.g. Yi, 2020; Hao et al., 2022; Sheng & An, 2024) focused on application in the Chinese environment. Another group (e.g. Arora et al., 2018; Mamilla, 2019) in the Indian environment. Ali & Siddiqui (2020) focused on Pakistan market. At the level of Middle East, Abdulkareem et al. (2023) focused on the Iraqi environment, while Altahtamouni et al. (2022) focused on the Saudi environment. In Egyptian market, some focused (e.g. Omara & Rashed, 2023; Almaleeh et al., 2024) on financial flexibility only, while others (e.g. Ali, 2022; El Madbouly, 2022; Wassef et al., 2024) tested SGR with other

variables. No Egyptian study merge between the three variables -according to author's knowledge-That confirms the importance of this research.

Financial flexibility is considered one of the most important determinants affecting financial decisions, which in turn has an impact on the success and continuity of the company. Profitability is used to measure the level of success in the short term. SGR expresses the measurement of performance in the long term. Some authors (e.g. Ali & Siddiqui, 2020; Teng et al., 2021; Hao et al., 2022; Abdulkareem et al., 2023; Wu et al., 2024) found a positive relationship between financial flexibility and performance, while others (e.g. Yi, 2020; Sheng & An, 2024) found a U-shape relationship. The author adopts a more comprehensive approach that combines short- and long-term success measures such as profitability and SGR and a positive association is expected between financial flexibility, profitability and SGR. Accordingly, the first and second study hypotheses can be formulated as follows:

H_1: There is a significant positive impact of financial flexibility on profitability for companies listed on Egyptian stock market.

H_2: There is a significant positive impact of financial flexibility on SGR for companies listed on Egyptian stock market.

2-2- Corona pandemic, profitability and SGR

The Corona pandemic had a great impact on all economic levels. This prompted many researchers to test the impact of this pandemic on the performance of companies in various business environments. Some authors (e.g., Acharya et al., 2020; Hu & Zhang, 2021; Bose et al., 2022; Xiazi & Shabir, 2022; Qadri et al., 2023; Athira et al., 2024) examined the impact of Corona globally in different countries. The results of those studies confirmed the negative impact of corona pandemic on firms' performance.

On another level, some researchers (e.g. Kumar & Zabib, 2022; Shen et al., 2020; Li et al., 2022) were interested in studying the impact of this pandemic on companies belonging to a specific stock market. For example, Neukirchen et al. (2022) investigated firm efficiency and stock return in American firms form 3 Feb. to 23 March 2020 during the pandemic. They found that the firm efficiency is an important factor in explaining stock return changes during the crisis. Consistently with previous study, Kumar & Zabib (2022) found a negative impact

of this crisis on American firms' performance, and the managerial ability reduced the consequences of this impact.

In Chinese market, some authors (e.g. Shen et al., 2020; Li et al., 2022; Chen et al., 2021) studied the impact of Corona on the performance and SGR. Shen et al. (2020) and Li et al. (2022) found a negative effect of this crisis on financial performance. Moreover, they noticed that Chinese companies treated the consequences of Corona by reduction in investments and enhancing sustainability performance. Chen et al. (2021) reached to negative relationship between Corona and SGR and the customer concentration reduces this impact.

 Depending on only three Indian industrial sectors: construction, tourism, and food, in analyzing the impact of the Corona pandemic on Indian companies for first six months of 2020. Alsamhi et al. (2022) found a significant differences in sales and earnings per share between the pre- and post-Corona period for the three sectors. The tourism sector was the most affected, followed by the construction sector and then food. While in Arab countries, Makni (2023) studied the relationship in Saudi companies. The results indicated a negative impact of this crisis on companies, especially with regard to revenues and investments.

  The previous studies focuses on different time to measure the impact of Coronavirus. For example, some authors focused on short time during the pandemic. For example, some authors (e.g. Neukirchen et a., 2022; Kumar & Zabib, 2022) used small period from 3 February to 23 march 2020. While some researchers (e.g. Hu & Zhang, 2021; Acharya at al., 2022) focused on first quarter in 2020). Alsamhi et al. (2022) depended on last quarter from 2019 to first quarter from 2020. Some studies (Li et al., 2022; Shen et al., 2020; Bose et al., 2022; Xiazi & Shabir, 2022; Theresia & Triwacananingrum, 2022) focused on year 2020. While, Lusmeida & Adilla (2023) used period form 2020-2021 to measure that crisis.

It is also clear from the above analysis that there are multiple testing environments. For example, some researchers (e.g., Hu & Zhang, 2021; Bose et al., 2022; Xiazi & Shabir, 2022; Athira et al., 2024) investigated the impact of the crisis in different countries. Neukirchen et al. (2022) and Kumar & Zabib (2022) applied their studies in American stock market. Meanwhile, some authors (e.g. Shen et al., 2020; Li et al., 2022) applied their research in China. Alsamhi et al., 2022 tested the pandemic's effects in India. While Makni (2023) focused on Saudi Arabia. There is a scarcity of studies – According to the researcher's knowledge- that have addressed the impact of the Corona pandemic on performance in general and specially on the SGR in Egyptian market. The majority of previous study reached to a significant negative impact for Coronavirus on financial and sustainable performance. That leads to expect a negative relationship between

Corona pandemic, profitability and SGR. Thus, the third and fourth research hypotheses can be written as follows:

H₃: *There is a significant negative impact of Corona pandemic on profitability for companies listed on Egyptian stock market.*

H₄: *There is a significant negative impact of Corona pandemic on SGR for companies listed on Egyptian stock market.*

2-3- Corona pandemic, financial flexibility, profitability and SGR

This part of the research relates to previous studies that dealt with financial flexibility in short-term performance or sustainable performance in light of the repercussions of the Corona pandemic. Through their study of several companies across 61 countries, Gopalakrishnan et al. (2022) concluded that companies in the countries most exposed to the outbreak of the disease were using external sources of financing. At the same direction, Atayah et al. (2021) focused on logistics firm in G20- countries. They found increasing in companies' performance from 14 countries, while, decreasing in firms' performance from six countries during Corona pandemic. While Lester et al. (2021) studied the relationship between financial flexibility and Corona depending on a sample of American companies. The results indicated that companies with high financial flexibility had fewer layoffs. Moreover, the impact of financial flexibility also increases in companies with high application of governance mechanisms.

Some studies (e.g. Liu et al., 2021; Zhang et al., 2022; Hunjra et al., 2024) focused on the moderating role of corona pandemic. For example, Liu et al. (2021) focused on this moderating role on the relationship between operational flexibility and performance on a sample of Chinese companies. According to their results, companies with high operational flexibility were less affected by this crisis. Furthermore, Zhang et al. (2022) support the same results for Taiwanese hotel sector during the period from the first quarter of 2020 to the second quarter of 2021. At the same context, Hunjra et al. (2024) studied the relation between financial flexibility and risk taking pre and post Corona during 2012 to 2021 for Chinese companies. They found a positive relation between the two variables over all period. Which indicates no moderating effect of this pandemic.

Concerning the relationship between financial flexibility and sustainable performance in the light of Corona pandemic, some authors (e.g. Teng et al., 2021; Zhang et al., 2023; Fahlenbrach et al., 2021) investigated the relationship between these variables. Fahlenbrach et al. (2021) found that American companies with high financial flexibility had a lower reduction in share price changes and market performance compared to companies with low financial flexibility when facing the shock of the Corona pandemic. At the same direction, Theresia &

Triwacananingrum (2022) found a significant effect of Corona on the relationship between sustainability growth rate and sustainability reporting in Indonesian companies. On contrast, Lusmeida & Adilla (2023) reached to no moderating effect for this crisis on the relationship between SGR and sustainability reporting in Indonesian companies.

Regarding the relationship between financial flexibility and sustainable development during the pandemic, Teng et al. (2021) confirmed that the Taiwanese-manufacturing firms has the worst level of performance during Corona. At the same direction, Zhang et al. (2023) reports that Corona pandemic caused a decline in sustainable performance and increased financial constraints for the Chinese companies. Moreover, companies with the highest sustainable performance were less affected by this pandemic comparing with the lowest performance's companies.

Due to the scarcity of studies that have addressed the moderating effect of the Corona pandemic on the relationship between financial flexibility, profitability SGR specifically. The fifth and sixth hypotheses of the study will be derived without specifying the direction of the relationship as follows:

H₅: *Coronavirus pandemic moderates the relationship between financial flexibility and profitability of companies listed on Egyptian stock market.*

H₆: *Coronavirus pandemic moderates the relationship between financial flexibility and SGR of companies listed on Egyptian stock market.*

Methodology
This section presents the research methodology to test the research hypotheses. The main objective is to test the impact of financial flexibility on profitability and SGR. In addition, investigate the direct and moderating effect of Corona pandemic on that relationship between the research variables. The research population consists of listed companies on the Egyptian stock market.

Research sample

The research sample consists of non-financial companies registered in the Egyptian Stock market Index 100 (EGX 100) during the period from 2016 to 2023 using all financial information available on firms' sites and Mubasher Misr site to collect data from the unconsolidated financial statements. The following conditions were taken into account when selecting the research sample: (a) all banks and non- bank financial services are excluded for their special regulations. (b) Utilities sector is excluded (Fahlenbrach et al., 2021). (c) The sample is not included companies with negative values of equity. (d) Companies with zero revenues or disclosures its revenues with dollar or other currency instead of

Egyptian pounds are excluded. (e) The outliers' values and companies with unavailable observations necessary for research variables were deleted. Table 1 reports the final observation for the research sample.

Table 1. Research Sample

Panel A		
All companies listed on EGX 100 from 2016 to 2023	100 × 8	= 800 observations
(-) banks & Non-bank financial services	20× 8	= (160)
(-) Utilities (Egypt Gas-Taqa Arabia)	2 × 8	= (16)
(-) unavailable data and outliers values		= (214)
Final research sample		**410 observations**

Panel B		
Sector name	**Observations**	**Percentage**
Basic Resources	67	16.3%
Industrial Goods , Services and Automobiles	7	1.7%
Real Estate	86	21%
Travel & Leisure	14	3.4%
IT, Media & Communication Services	23	5.6%
Food, Beverages and Tobacco	57	14%
Trade, Distributors	15	3.7%
Shipping & Transportation Services	13	3.1%
Contracting & Construction Engineering	24	6%
Textile & Durables	27	6.5%
Building Materials	31	7.5%
Health Care & Pharmaceuticals	46	11.2%
Total	**410**	**100%**

Source: Author's work

Research methods

The researcher depends on IBM SPSS statistics programme- Version 23 to test the relationship between the research variables. Because of the dependent variables, have continuous values, so the multiple regression method with Ordinary Least Square (OLS) is relevant for this study. Model (1-1) and (1-2) test the impact of financial flexibility on profitability and SGR respectively. While model (2-1) and (2-2) investigate the direct impact of Corona separately on profitability and SGR. Finally, Model (3-1) and (3-2) examine the moderating effect of Corona pandemic on the relationship between the financial flexibility, profitability and SGR. The following equations are expressed the six regression models.

$$PRF_{it} = \beta_0 + \beta_1 FIF_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \beta_4 LIQ_{it} + \beta_5 PPE_{it} + \beta_6 \Sigma Sec._{it} + \beta_7 \Sigma Year_{it} + \varepsilon. \quad \ldots\ldots(1\text{-}1)$$

$$SGR_{it} = \beta_0 + \beta_1 FIF_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \beta_4 LIQ_{it} + \beta_5 PPE_{it} + \beta_6 \Sigma Sec._{it} + \beta_7 \Sigma Year_{it} + \varepsilon. \quad \ldots\ldots(1\text{-}2)$$

$$PRF_{it} = \alpha_0 + \alpha_1 FIF_{it} + \alpha_2 COR_{it} + \alpha_3 Size_{it} + \alpha_4 Age_{it} + \alpha_5 LIQ_{it} + \alpha_6 PPE_{it} + \alpha_7 \Sigma Sec._{it} + \varepsilon. \,.. (2\text{-}1)$$

$$SGR_{it} = \alpha_0 + \alpha_1 FIF_{it} + \alpha_2 COR_{it} + \alpha_3 Size_{it} + \alpha_4 Age_{it} + \alpha_5 LIQ_{it} + \alpha_6 PPE_{it} + \alpha_7 \Sigma Sec._{it} + \varepsilon \ldots. (2\text{-}2)$$

$$PRF_{it} = \gamma_0 + \gamma_1 FIF_{it} + \gamma_2 COR_{it} + \gamma_3 FIF* COR_{it} + \gamma_4 Size_{it} + \gamma_5 Age_{it} + \gamma_6 LIQ_{it} + \gamma_7 PPE_{it} + \gamma_8 \Sigma Sec_{it} + \varepsilon. \ldots (3\text{-}1)$$

$$SGR_{it} = \gamma_0 + \gamma_1 FIF_{it} + \gamma_2 COR_{it} + \gamma_3 FIF* COR_{it} + \gamma_4 Size_{it} + \gamma_5 Age_{it} + \gamma_6 LIQ_{it} + \gamma_7 PPE_{it} + \gamma_8 \Sigma Sec_{it} + \varepsilon. \ldots\ldots (3\text{-}3)$$

Whereas;

- PRF, SGR, FIF, COR, size, age, LIQ, PPE, SEC, and Year are the research variables and their measurements reported in table 2.
- (i) indicates the one observation for a company, while (t) indicate to one observation for a year.
- B; α; and γ are the regression coefficients.
- (ε): is a random error.

Variables' measurements

      The research's independent variable is financial flexibility. It was measured by the summation of cash flexibility and debt flexibility. Corona pandemic is the moderator variable. Meanwhile, the dependent variables are profitability and SGR. In addition, the author use four control variables beside the fixed effects of year and sector. Table 2 summarizes the calculation of all research variables.

Table 2. Measurements of variables

Variable	Measurements	References
Independent variable		
1-Financial flexibility (FIF)	Total of cash and debt flexibility	Teng et al., 2021; Abdulkareem et al., 2023; Kong, 2022; Naseer et al., 2024; Sheng &An, 2024
Cash flexibility	Sum of cash and cash equivalent divided by ending balance of assets	
Debt flexibility	Result of one minus ratio of total liabilities scaled by ending balance of assets	
2-Corona pandemic (COR)	Dummy variable take one if the observations lies on year 2020 and zero otherwise.	Li et al., 2022; Shen et al., 2020; Bose et al., 2022; Xiazi & Shabir, 2022
Dependent variable		
Profitability (PRF)	Return on assets is calculated as the percentage of income after interest and tax over total assets	Ocak & Findik, 2019; Teng et al., 2021; Zhang et al.,2020

Sustainable growth rate (SGR)	The multiplication results of four ratios (Ret. Ratio × Ass.T× Prof. M. × Debt. Ratio)	Ionita & Dinu, 2021; Ain et al., 2022; Ocak & Findik,2019; Akhtar et al., 2021
Ret. Ratio (Retention ratio)	Retained earnings divided by net profit after tax	
Ass. T (Asset turnover)	Total revenues over ending total assets	
Prof. M (profit margin ratio)	Net profit after tax scaled by total revenues	
Debt ratio	Total of current and non-current liabilities over ending balance assets. debt scaled by total assets	
Control variables		
Corporate size (CS)	logarithm of total assets	Sheng & An, 2024, Bagh et al., 2022; Lin,2024; Mumu et al., 2019
Corporate age (CG)	Number of years from the company started its operations	Ocak & Findik,2019; Zhang et al., 2020
Corporate Liquidity (CL)	Current assets divided by current liabilities	Lusmeida & Adilla, 2023; Akhtar et al., 2021; Mamilla, 2019
Fixed assets (PP&E)	Natural logarithm of property, plant, and equipment	Naseer et al., 2024
Fixed effect of year (DY)	Dummy variable takes one for each year	Ocak & Findik,2019; Naseer et al., 2024; Shen et al., 2020
Fixed effect of industry (DS)	Dummy variable takes one for each sector	Ocak & Findik,2019; Naseer et al., 2024; Shen et al.,2020

Source: Author's work

Figure1: research framework
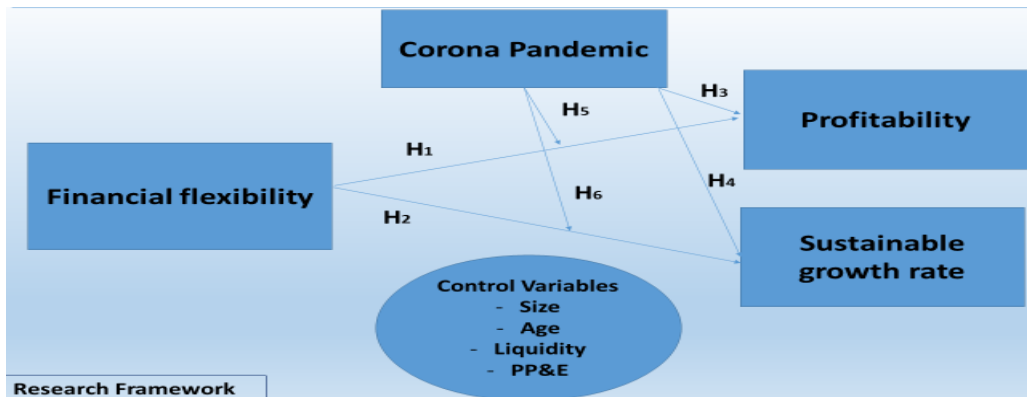
Source: Author's work

Empirical results
Descriptive results

Table 3 –panel A reports the final findings of descriptive analysis for the research variables. The minimum (maximum) of financial flexibility was 0.005 (1.500) with mean value (Standard deviation) 0.605 (0.257) respectively. The mean value of Corona is 13% presents year 2020. Table 3- panel B explains percentage of all observations divided to two parts pre pandemic from 2016 to 2019 (53.2%) and during and post pandemic from 2020 to 2023 (46.8%). The moderating variable (FIF * COR) has zero minimum value and 1.416 maximum value. Its mean value was 0.075.

Table: 3 Descriptive Statistics

Descriptive Statistics					
Panel A					
Variable	N	Minimum	Maximum	Mean	Std. Deviation
FIF	410	0.005	1.500	0.605	0.257
COR	410	0	1	0.130	0.333
FIF* COR	410	0.000	1.416	0.075	0.217
Size	410	6.754	11.501	9.330	0.688
Age	410	10	117	36.750	21.748
Liquidity	410	0.250	14.169	2.022	1.646
PP&E	410	11.031	25.668	18.913	2.274
SGR	410	-0.658	0.243	0.0255	0.079
PRF	410	-0.260	0.522	0.077	0.103

Panel B: Frequencies of observation before and after Corona pandemic		
Valid	Frequency	Percent
0 (2016-2019)	218	53.2%
1 (2020-2023)	192	46.8%
Total	410	100%

Source: Author's work

Regarding control variables, the average value for firm size is 9.330. The minimum age of listed companies is 10 years and the maximum 117 years. The average age of research sample was is 37 years approximately. The minimum value of liquidity reports 0.250 and the maximum 14.169 with mean value equals 2.022 and standard deviation 1.646. For the fourth control variable related to fixed assets, the minimum (maximum) values were 11.031 (25.668). Moving to the first dependent variables, profitability the minimum (Maximum) were -26% (52.2%) with average value equals 7.7% and 0.103 for standard deviation. Concerning SGR as second dependent variable, it has minimum (maximum) -13.784 (6.667) with average value 2.55% and 0.079 as a standard deviation.

The researcher also analyzed the average value of all study variables over the years, as shown in Table 4. It presents the largest (and lowest) value for the average SGR to 0.052 for year 2023 (0.003 for year 2019). While year 2020 recorded (0.036) the lowest value for the rate of return on assets, and the largest value (0.109) was in 2023, which indicates that companies' profits were affected by this pandemic in year 2019 and 2020. The rise in corporate performance in 2023 can be explained by the recovery of many Egyptian companies from the effects of the coronavirus. For financial flexibility, the highest mean value was 0.659 for year 2016 and the lowest value was 0.536 for year 2022.

Table 4: Means values across years

Variable – Mean	N	SGR	ROA	FF	age	size	liquidity	fixed
2016	50	0.017	0.087	0.659	35.54	9.109	1.840	18.376
2017	55	0.016	0.077	0.635	35.40	9.157	1.964	18.442
2018	56	0.012	0.087	0.614	34.68	9.208	2.014	18.636
2019	57	0.003	0.074	0.598	36.14	9.261	2.045	18.832
2020	52	0.037	0.036	0.593	38.04	9.364	2.171	19.112
2021	53	0.035	0.068	0.606	38.49	9.440	2.132	19.294
2022	48	0.040	0.087	0.536	38.17	9.554	1.850	19.390
2023	39	0.052	0.109	0.594	36.33	9.671	2.173	19.415
Total	410							

Source: Author's work

Following the same approach, the average value of all study variables was analyzed across industrial sectors to identify the most affected sector by this pandemic. As shown in table 5 the lowest value of SGR was -0.004 for textile and Durables sector. While the highest average was 0.147 for industrial and automobiles sector. For profitability, the highest value wad 0.209 for the same sector for SGR versus lowest average was -0.008 for travel and leisure. This confirms the serious damage to the tourism sector as a result of this crisis. Continuing at same analysis for financial flexibility, the

highest average 1.059 for shipping and Transportation Services and the lowest average was 0.457 for the travel and leisure sector too.

Table 5: Means values across industrial sectors

Variable – Mean	N	SGR	ROA	FF	age	size	liquidity	fixed
Basic Resources	67	.001	0.114	0.655	38.40	9.432	2.153	19.572
Industrial Goods , Services and Automobiles	7	0.147	0.209	0.657	15.00	10.119	1.266	19.889
Real Estate	86	0.047	0.056	0.556	39.86	9.529	2.609	17.385
Travel & Leisure	14	-.034	-0.008	0.457	23.07	9.239	1.727	18.881
IT , Media & Communication Services	23	0.020	0.070	0.726	25.96	9.734	1.313	20.939
Food, Beverages and Tobacco	57	0.020	0.094	0.580	41.81	9.255	1.514	19.903
Trade, Distributors	15	0.017	0.135	0.589	23.73	9.008	1.611	17.906
Shipping & Transportation Services	13	0.024	0.208	1.059	42.00	8.971	3.435	18.525
Contracting & Construction Engineering	24	0.040	0.025	0.499	36.54	8.727	1.638	16.046
Textile & Durables	27	-0.004	0.066	0.663	49.70	9.246	3.420	19.032
Building Materials	31	0.034	0.021	0.489	33.68	9.201	1.063	20.051
Health Care & Pharmaceuticals	46	0.034	0.068	0.612	30.85	9.269	1.680	19.532
Total	410							

Source: Author's work

4-2- Correlation Results

Table 6 presents Pearson correlation among all research variables. For instance, financial flexibility and liquidity are highly correlated (0.536) with 99% confidence level that reflects a significant positive relationship between financial flexibility and liquidity. There is also a high degree of correlation (0.908) of 99% confidence level between COR and FIF* COR. It approaches the value of one as if it were between the variable and itself as a direct and moderating effect for that variable.

Table 6: Correlation results

Pearson Correlation	FIF	COR	FIF* COR	Size	Age	LIQ	PP&E	SGR	PRF
FIF	1								
COR	-0.019	1	.						
FIF* COR	0.131***	0.908***	1	.					
Size	-0.120**	0.014	-0.006	1					
Age	0.083*	0.026	0.044	0.013	1	.			
LIQ	0.536***	0.035	0.134***	-0.057	0.189***	1			
PP&E	-0.118**	0.033	0.017	0.700***	-0.078	-0.295***	1		
SGR	0.024	0.057	0.042	0.380***	-0.133***	0.006	0.141***	1	
PRF	0.403***	-0.152**	-0.077	0.199***	0.069	0.176***	0.142***	0.195***	1

***, **, *Correlation is significant at the 0.01, 0.05, 0.10 level (2-tailed) respectively

Source: Author's work

Moreover, there is a negative significant level of correlation (-0.152) between Corona pandemic and profitability at 95% confidence level. Firm size has a significant positive association with fixed assets, SGR and profitability. While age has a significant positive association with liquidity and a significant negative association with SGR. Liquidity has negative (positive) correlation with fixed assets (profitability). Finally, fixed assets has a significant positive association with both dependent variables SGR and profitability.

Regression results

Effect of financial flexibility on profitability and SGR

In this part, the final finding of the regression model are presented in Table 7. It showed the results of testing the impact of financial flexibility on profitability and SGR. Starting by Variance Inflation Factor (VIF), which indicates weather multicollinearity problem, is existence or not. The table showed all VIF values are less than 10, and that is supports no multicollinearity problems. The model reports p -value = 0.000. It is significant at 99% confidence level. The adjusted R^2 equals 26.4%, It means that the independent variables can explain 26.4% from changes occur to the dependent variable.

Concerning the relationship between financial flexibility and profitability, table 7 reports a high significant value and 32.6% explanation power for Adjusted R^2. The regression coefficient records a positive value (0.145) at 99% confidence level. It supports the acceptance of first research hypothesis (**H₁**). That results matches with results of Ali & Siddiqui (2020). From control variables, firm size only has a significant positive impact on profitability. While no association are exsitance between remaining control variables and profitability.

Table 7: Effect of financial flexibility on profitability and SGR

	Model (1-1)				Model (1-2)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.380	-5.377	0.000		-0.447	-8.186	0.000	
FIF	0.145	6.604	0.000	1.833	0.040	2.234	0.026	1.833
Size	0.042	3.445	0.001	4.040	0.072	7.253	0.000	4.040
Age	0.000	1.011	0.313	1.157	-0.001	-3.744	0.000	1.157
LIQ	-0.001	-0.387	0.699	1.940	-0.002	-0.751	0.453	1.940
PP&E	-0.002	-0.487	0.627	5.272	-0.010	-3.042	0.003	5.272
Sig	0.000				0.000			
Adjusted R²	32.6%				26.4%			
F-statistic	9.604				7.387			
Durbin Watson	0.998				0.905			
years	√				√			
sectors	√				√			
N	410				410			
Depended variable	Profitability				SGR			

Source: Author's work

To test the second research hypothesis, the financial flexibility records positive coefficient equals 0.040, and p value = 0.026. It less than 5%. This supports the research hypothesis related to the existence of significant positive impact of financial flexibility on SGR. The second hypothesis (H_2) was accepted. That supports the same results of Abdulkareem et al. (2023). Table 7 showed significant positive impact of firm size on SGR. In construct, there were a significant negative relationship between firm age and fixed assets with SGR.

Effect of Corona pandemic on profitability and SGR

Table 8 shows the results of testing the impact of Corona pandemic on profitability and SGR. The two models are significant at 99% confidence level. No exsitance of multi collinearity problem. Regarding profitability variable, the model has adjusted R^2 equals 32.6%. For control variables, firm size only had a significant positive effect on profitability. While age, liquidity and fixed assets have insignificant association with profitability.

The Corona pandemic has a significant negative impact on profitability, the regression coefficient has a negative value (-0.051) and p- value (0.000) less than 5%. This supports the acceptance of third research hypothesis (H_3). This results matches with previous studies (e.g. Acharya et al., 2020; Shen et al., 2020; Kumar & Zabib, 2022).

Table 8: Effect of Corona pandemic on profitability and SGR

	Model (2-1)				Model (2-2)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.345	-5.166	0.000		-0.490	-9.065	0.000	
FIF	0.145	6.698	0.000	1.785	0.039	2.197	0.029	1.785
COR	-0.046	-3.640	0.000	1.010	0.017	1.627	0.105	1.010
Size	0.045	3.717	0.000	3.915	0.074	7.638	0.000	3.915
Age	0.000	0.928	0.354	1.153	-0.001	-3.653	0.000	1.153
LIQ	-0.002	-0.458	0.647	1.911	-0.002	-0.728	0.467	1.911
PP&E	-0.003	-0.672	0.502	5.230	-0.011	-3.123	0.002	5.230
Sig	0.000				0.000			
Adjusted R^2	32.6%				26.3%			
F-statistic	12.626				9.579			
Durbin Watson	1.001				0.905			
years	x				X			
sectors	√				√			
N	410				410			
Depended variable	Profitability				SGR			

Source: Author's work

Concerning SGR as dependent variable, the explanation power of the model is 26.3%.To avoid interaction between the pandemic periods for year 2020, the fixed effect of year is excluded from this analysis. It is clear from p-value of COR (0.105) that reflects the insignificant relationship Corona and SGR. That results leads to reject the fourth hypothesis (**H$_4$**). That results conflicts with Chen et al. (2021). For control variables, age and fixed assets have a significant negative impact on SGR. While firm size has a positive impact on SGR.

Results of the moderating effects of Corona pandemic on the relationship between financial flexibility, profitability and SGR

Table 9 reports the effect of Corona pandemic as a moderating variable on the research variables. Both of model (3-1) and (3-2) have a high significant because of p-value equals zero. The adjusted R^2 values are 32.4% and 26.2% for the two models respectively. In addition, there is no multicollinearity problem because all VIF values fall below 10. Financial flexibility still has a positive effect on profitability and SGR. The value of regression coefficient were 0.146 and 0.041 respectively. P-value for both models were 0 and 0.023, it is significant at 99% and 95% confidence level respectively.

For model (3-1), financial flexibility and firm size had significant positive impact on profitability. All remaining variable are insignificant. For the moderating effect of Corona (FIF* COR), it had insignificant impact on profitability. Because of insignificant p-value (0.917). That leads to reject the fifth research hypothesis (**H$_5$**).

Regarding model (3-2), financial flexibility and firm size had a significant positive impact on SGR. While age and fixed assets had a significant negative impact on SGR. On the contrast, liquidity, and direct effect of Corona pandemic had insignificant impact on SGR. For the moderating effect of Corona, it had p-value equals (0.533) it is greater than 5% and 10% as well. That result supports previous results in model (3-1), no significant moderating effect for Corona pandemic on SGR. Thus, the sixth research hypothesis (H_6) is rejected.

Table 9: Results of moderating effect of Corona pandemic on the relationship between financial flexibility, profitability and SGR

	Model (3-1)				Model (3-2)			
	Coefficient	**t**	**sig**	**VIF**	**Coefficient**	**t**	**sig**	**VIF**
Constant	-0.399	-5.781	0.000		-0.471	-8.449	0.000	
FIF	0.146	6.558	0.000	1.870	0.041	2.278	0.023	1.870
COR	-0.043	-1.340	0.181	6.469	0.031	1.216	0.225	6.469
FIF* COR	-0.005	-0.105	0.917	6.633	-0.025	-0.624	0.533	6.633
Size	0.045	3.708	0.000	3.919	0.074	7.611	0.000	3.919
Age	0.000	0.928	0.354	1.153	-0.001	-3.639	0.000	1.153
LIQ	-0.002	-0.447	0.655	1.926	-0.002	-0.669	0.504	1.926
PP&E	-0.003	-0.667	0.505	5.236	-0.011	-3.097	0.002	5.236
Sig	0.000				0.000			
Adjusted R^2	32.4%				26.2%			
F-statistic	11.895				9.051			
Durbin Watson	1.001				0.903			
years	X				X			
sectors	√				√			
N	410				410			
Depended variable	Profitability				SGR			

Source: Author's work

In previous tests, the researcher relied on the sample as a whole during the period from 2016 to 2023 to identify the overall impact of the variables. For further analysis to understand the relationships between the study variables in different periods, the sample was divided into three periods: before, during, and after the Corona pandemic. Table 10 shows the relationship between financial flexibility and profitability during three different periods.

For model significant, pre and post pandemic period models had p-value equals zero, while during pandemic period had p-value (0.097), it significant at 90% confidence level only. The highest impact of financial flexibility on profitability were pre and post pandemic. While during pandemic, the coefficient (p-value) was 0.126 (0.075), it is

significant at 90% confidence level only. This means that during the pandemic, there was a significant impact of financial flexibility on profitability, but to a lesser extent than the pre- and post-pandemic periods. In other words, the impact of financial flexibility on profitability was greater than the impact of the pandemic on this relationship.

Table 10: Results of the effects of financial flexibility on profitability across sub samples

	Pre Corona (2016-2019)				During Corona 2020				Post Corona (2021-2023)			
	Coef.	t	sig	VIF	Coef.	t	sig	VIF	Coef.	t	sig	VIF
Constant	-0.349	-3.642	0.000		-.551	-2.264	0.030		-0.410	-3.436	0.001	
FF	0.144	4.672	0.000	1.775	0.126	1.834	0.075	2.158	0.165	4.276	0.000	2.237
CS	.040	2.412	.017	3.609	.061	1.454	.155	4.324	.029	1.388	.168	4.664
CG	0.000	.329	.743	1.172	-7.873E-5	-.136	.893	1.184	.001	1.795	.075	1.177
CL	-.008	-1.352	.178	1.754	.006	.731	.470	2.226	.002	.416	.678	2.432
PP&E	-.002	-.323	.747	4.743	-.004	-.339	.737	5.519	.003	.482	.631	6.734
Sig	0.000				0.097				0.000			
Adjusted R²	27.7%				17.7 %				35.3%			
F-statistic	6.199				1.688				5.739			
Durbin Watson	1.143				1.969				1.450			
years	X				X				X			
sectors	√				√				√			
N	218				52				140			
Depended variable	Profitability				Profitability				Profitability			

Source: Author's work

Table 11 assures the previous results. The researcher divided the whole sample into sub two samples to investigate the impact of financial flexibility on profitability. The two models are significant at 99% confidence level.

Table 11: Results of the effects of financial flexibility and profitability pre and post pandemic

	Pre Corona pandemic (2016-2019)				Post Corona pandemic (2020-2023)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.349	-3.462	0.000		-0.511	-4.751	0.000	
F. Flex	0.144	4.672	0.000	1.775	0.155	4.638	0.000	2.083
CS	0.040	2.412	0.017	3.609	0.050	2.663	0.008	4.465
CG	0.000	0.329	0.743	1.172	0.000	1.095	0.275	1.152
CL	-0.008	-1.352	0.178	1.754	0.003	0.682	0.496	2.242
PP&E	-0.002	-0.323	0.747	4.743	-0.002	-0.271	0.787	6.255
Sig	**0.000**				**0.000**			
Adjusted R^2	**32.3%**				**31.4%**			
F-statistic	**7.468**				**6.461**			
Durbin Watson	**1.180**				**1.336**			
Years	**X**				**X**			
Sectors	**√**				**√**			
N	**218**				**192**			
Depended variable	**Profitability**				**Profitability**			

Source: Author's work

The year 2020 during pandemic period is merged with post pandemic and the adjusted R^2 reports 32.3% and 31.4%. The table reports a significant positive relationship between financial flexibility and profitability with p-value =0.000, it is significant at 99 % confidence level effect. The regression coefficient in the two models were 0.144 and 0.155 in pre and post pandemic respectively.

At the same manner, the relationship between financial flexibility and SGR are analysed under the three-sub samples. Table 12 presents the regression models for the three periods, it is noticed that during pandemic the model was insignificant (p-value= 0.237). For the pre pandemic period, there was a significant positive impact of financial flexibility on SGR, its coefficient (p-value) were 0.060 (0.027). Regarding post pandemic period, there was insignificant relationship between two variables. The coefficient and p-value were -0.011 and 0.678 respectively.

Table 12: Results of the effects of financial flexibility and SGR across sub samples

	e Corona pandemic 016-2019)				ıring Corona pandemic 20				ɔst Corona pandemic 021-2023)			
	ef.			F	ef.			F	ef.			F
ıstant	634	583	00		283	865	71		111	312	92	
	60	21	27	75	10	3	09	58	)11	416	78	37
	93	86	00	09	57	01	34	24	4	40	7	64
	001	227	27	72	001	480	48	84	)1	390	1	77
	003	542	88	54	003	72	71	26	2	8	6	32
;&E	012	269	24	43	)11	298	03	19	)7	386	8	34
	00				37				00			
usted R²	7%				%				7%			
atistic	99				24				32			
·bin Watson	43				15				93			
rs												
tors												
	;								)			
ended ıable	·R				·R				·R			

Source: Author's work

The lack of an impact of financial flexibility on sustainable growth during and after the pandemic could be the reason of insignificant direct impact of Corona pandemic or as a moderating variable in the previous analysis. Likewise, the strength of the relationship between the two variables in the pre-Corona period could have had the greatest impact on the sample as a whole in the previous basic analysis.

Table 13 assures the previous results. The researcher divided the whole sample into sub two samples to investigate the impact of financial flexibility on SGR. The two models are significant at 99% confidence level, and the adjusted R^2 reports 27.7% and 27.4%. The table reports a significant positive relationship between financial flexibility and SGR in pre pandemic period with p-value =0.027, it is significant at 95 % confidence level effect. While there was insignificant relationship between two variables in post pandemic period as a whole.

Table 13: Results of the effects of financial flexibility and SGR pre and post pandemic

	Pre Corona pandemic (2016-2019)				Post Corona pandemic (2020-2023)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.634	-7.583	0.00		-0.151	-2.145	0.033	
F. Flex	0.060	2.221	0.027	1.775	-0.006	-0.284	0.777	2.101
CS	0.093	6.386	0.000	3.609	0.038	3.105	0.002	4.465
CG	-0.001	-2.227	0.027	1.172	-0.001	-3.737	0.000	1.152
CL	-0.003	-0.542	0.588	1.754	0.001	0.164	0.870	2.242
PP&E	-0.012	-2.269	0.024	4.743	-0.008	-1.839	0.068	6.255
Sig	0.000				0.000			
Adjusted R^2	27.7%				27.4%			
F-statistic	6.199				5.501			
Durbin Watson	1.143				0.863			
Years	X				X			
Sectors	√				√			
N	218				192			
Depended variable	SGR				SGR			

Source: Author's work

Additional analysis

Previous studies differed in the period used to measure the repercussions of the Coronavirus. Some (e.g. Neukirchen et a., 2022; Kumar & Zabib, 2022) focused on the first quarter of 2020. While others (e.g. Alsamhi et al., 2022) used the last quarter of 2019 to first quarter from 2020. Given the differences in the period in which the impact of the Corona pandemic is measured, the researcher will rely on additional analyses by merging 2019 and 2020 together. Table 14 showed the individual effect of Corona on profitability and SGR. The results support previous research finding, that Corona effects profitability negatively. No effect for this pandemic on SGR.

Table 14: The effect of Corona pandemic (2019-2020) on profitability and SGR

	Model (2-1)				Model (2-2)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.392	-5.649	0.000		-0.464	-8.291	0.000	
F. Flex	0.146	6.678	0.000	1.786	0.036	2.071	0.039	1.786
COR	-0.026	-2.725	0.007	1.010	-0.004	-.496	0.620	1.010
Size	0.045	3.670	0.000	3.925	0.073	7.497	0.000	3.925
Age	0.000	.855	0.393	1.152	-0.001	-3.585	0.000	1.152
LIQ	-0.002	-.507	0.613	1.911	-0.002	-.581	0.562	1.911
PP&E	-0.003	-.703	0.483	5.233	-0.010	-2.989	0.003	5.233
Sig	0.000				0.000			
Adjusted R^2	31.6%				25.8%			
F-statistic	12.114				9.377			
Durbin Watson	1.006				0.893			
Years	X				X			
Sectors	√				√			
N	410				410			
Depended variable	Profitability				SGR			

Source: Author's work

Regarding the moderating effect of pandemic on the interest relationship between financial flexibility, profitability and SGR. Table 15 reports no significant effect for Corona pandemic on the research variables.

Table 15: the moderating effect of Corona pandemic (2019-2020) on the relationship between financial flexibility, profitability and SGR

	Model (3-1)				Model (3-2)			
	Coefficient	t	sig	VIF	Coefficient	t	sig	VIF
Constant	-0.396	-5.652	0.000		-0.455	-8.057	0.000	
FIF	0.150	6.309	0.000	2.109	0.027	1.389	0.166	2.109
COR	-0.017	-0.690	0.491	6.333	-0.027	-1.413	0.158	6.333
FIF* COR	-0.016	-0.434	0.665	6.732	-0.039	1.325	0.186	6.732
Size	0.044	3.663	0.000	3.925	0.073	7.513	0.000	3.925
Age	0.000	0.860	0.390	1.152	-0.001	-3.606	0.000	1.152
LIQ	-0.002	-0.472	0.637	1.923	-0.002	-.681	0.496	1.923
PP&E	-0.003	-0.682	0.496	5.244	-0.010	-3.048	0.002	5.244
Sig	0.000				0.000			
Adjusted R^2	31.5%				26.0%			
F-statistic	11.427				8.971			
Durbin Watson	1.006				0.881			
Years	X				X			
Sectors	√				√			
N	410				410			
Depended variable	Profitability				SGR			

Source: Author's work

Discussion

Financial flexibility is crucial to achieving long-term goals. To achieve financial stability, companies must maintain market-reversible indicators of success such as profitability and sustainable indicators that take into account the growth rate of profitability and capital structure, which is reflected in SGR. From this standpoint, this research aims to examine the effect of financial flexibility on profitability and SGR as well. Financial flexibility and sustainable growth are still fertile areas that need more research in emerging market like Egypt. Some Egyptian studies had focused on financial flexibility (e.g. Omara & Rashed, 2023; Almaleeh et al., 2024) or SGR (e.g. Ali, 2022; El Madbouly, 2022; Wassef et al., 2024) with other variables. This research provides a theoretical and empirical evidence for investigating the relationship between two variables.

The research's findings support the positive impact of financial flexibility on profitability in Egyptian firms. These findings are consistent with the results of studies conducted in both developed (Wu et al., 2024) and developing (Arora et al., 2018) countries. The results of the research also supported the positive impact of financial flexibility on SGR .This shows that there is a similarity between the results of Egyptian companies and Iraqi companies (Abdulkareem et al., 2023). The positive relationship between financial flexibility and both profitability and growth rate was predicted in the

first and second research hypothesis. The results supported this positive relationship. At the same time, this result answers the first and second research questions and confirms the impact of financial flexibility on the two dependent variables of the study. These results emphasize the balance that financial flexibility achieves by maintaining a level of liquidity that can seize investment opportunities in the Egyptian market without resorting to high-cost external sources of financing, as suggested by Myers & Majluf (1984).

Undoubtedly, the Corona pandemic had severe impacts on macro- and microeconomic levels and it is affected the firm's performance. The importance of the research stems from testing the direct impact of this pandemic on profitability and SGR. Besides testing its moderating impact on the basic relationship of the current study variables. The third and fourth research hypotheses were formulated to reflect the expected inverse relationship between Corona pandemic, profitability and SGR in light of previous related studies. The results confirmed the inverse impact of this crisis on profitability only and thus the third hypothesis is accepted. That finding is similar in developed (Neukirchen et al., 2022; Kumar & Zabib, 2022) and developing (Shen et al., 2020; Chen et al., 2021; Li et al., 2022) countries as well. No significant effect was recorded on SGR. This can be attributed to the fact that SGR is more stable and resilient in the face of crises. The SGR of Egyptian companies was not affected by the pandemic, but short-term indicators were quicker to respond and affected by the pandemic. Accordingly, the fourth hypothesis was rejected and the third research question was answered.

Regarding the moderating effect of Corona pandemic on the relationship between profitability or SGR. The results did not support any moderating effect of the crisis on that relationship. Thus, the fifth and sixth hypotheses were rejected and these findings answer the fourth research question. These unexpected results contradict the findings of many previous studies (e.g. Teng et al., 2021; Theresia & Triwacananingrum, 2022; Lusmeida & Adilla, 2023; Zhang et al., 2023) that have found a moderating effect of the pandemic on many of the relationships under study.The small sample size of 52 observations during the pandemic as shown in table 10 compared with the size of the observations before (218) or after (140) the pandemic could be a reason for this result. Another reason can be attributed to the strong impact of financial flexibility on the financial and sustainable performance of Egyptian companies at that time due to the protective procedures taken by the Egyptian government to reduce the impact of this pandemic on society such as providing loans with reduced interest rate, and supported affected sectors (MPED, 2020). These findings are useful in several aspects. First for the management of Egyptian companies. Financial managers should strengthen the financial flexibility of their companies by balancing between cash holdings on the one hand and the debt ratio on the other, so that they can attract valuable investment opportunities in the market and maintain an acceptable level of liquidity at the same time. Strengthening the financial flexibility of Egyptian companies, leads to improved profitability and SGR, which helps them survive under conditions of uncertainty and crisis.

Second, for regulators and policymakers, such as Egyptian Financial Regulatory Authority can encourage business organizations to achieve reasonable levels of financial flexibility and disclose it within the Financial Soundness Indicators (FSIs) on the stock

exchange's website for listed companies. Third, financial analysts should focus on financial flexibility of Egyptian companies when building their future forecasts of corporate performance. Different measures of SGR should be taken into account in addition to profitability indicators, as it gives useful information about a company's going concern. Lastly, potential investors can consider the indicators of financial flexibility and SGR when evaluating the available investment alternatives when deciding to invest in companies listed on the Egyptian stock market.

Conclusions

The main objective of this paper is to examine the financial flexibility' influence on sustainable success of firms. To achieve this goal, the author combined between the profitability as the most commonly indicator for firm's success. In addition, SGR is used for deeper analysis for measure the company's success and resilience in the face of crisis. Regarding the severe effects caused by the Corona pandemic, the author was interested in studying the impact of this pandemic as a direct and moderator variable on relationship between financial flexibility, profitability and SGR. Depending on 410 observations of non-financial companies listed on Egyptian stock market from 2016 to 2023. The results showed a significant positive impact of financial flexibility on profitability and SGR as well. The Corona pandemic has a direct significant negative impact on profitability and no effect was noticed on SGR. Concerning the moderating effect of this pandemic on the relationship between financial flexibility, profitability and SGR. The results showed no moderating role for Corona pandemic on this relationship.

This research contributes to bridging the research gap, it contributes to the accounting literature by using a more comprehensive approach to test the impact of financial flexibility on profitability and SGR, as most previous studies relied on the relationship between financial flexibility and financial performance only. It provides new empirical evidence from Egypt as an emerging economic market for analyzing the relationship between financial decisions and sustainable growth for Egyptian companies. The research also relied on a relatively long period after the Corona pandemic to test its impact on companies and the extent of companies' recovery from the repercussions of that crisis.It is recommended that financial managers should pay attention to maintaining an appropriate level of financial flexibility that helps them manage crises and protect against sudden fluctuations. Financial analysts and investors can also use the SGR beside profitability indicators to measure the company's stability in the market.

There are some limitations to this research, which is that it relies on a sample of non-financial companies. In addition, the scope of the study is from 2016 to 2023. To measure the changes, only one indicator was used for each of financial flexibility, profitability, and SGR. In light of these limitations, some future research topics can be suggested, such as testing the repercussions of the Corona virus on financial institutions based on a relatively long period. Studying the determinants affecting the financial flexibility and SGR. Preparing a comparative study of financial flexibility and SGR in Middle East. Studying the relationship between financial flexibility, governance mechanisms, and sustainable development requirements.

<u>**References**</u>

Abdulkareem, A., Chakrawal, A., Mozan A., & Abbood, W. (2023) Impact of effective working capital management and financial flexibility on the sustainable growth gap: An applied study of industrial companies in Iraq. *International Journal of Accounting Research*, 11 (3), (1000322). https://doi.org/ 10.35248/2472-114X.24.12.375

Acharya, V., & Steffen, S. (2020). The risk of being a fallen angel and the corporate dash for cash in the midst of COVID. *The Review of Corporate Finance Studies,* 9 (3), 430–471. https:// doi.org/10.1093/rcfs/cfaa013.

Agha, E. (2023). Corporate governance, liquidity risk, and sustainable growth rate in the Nigerian banking industry. *International Journal of Professional Business Review*, 8 (10),1-34. https://doi.org/10.26668/businessreview/2023.v8i10.3506.

Ain, Q., Yuan, X., Javaid, H. M., & Naeem, M. (2022). Board gender diversity and sustainable growth rate: Chinese evidence. *Economic Research-Ekonomska Istraživanja,* 35(1), 1364–1384. https://doi.org/10.1080/1331677X.2021.1965002

Akhtar, M., Yusheng, K., Haris, M., Ain, Q., & Javaid, H. (2022). Impact of financial leverage on sustainable growth, market performance, and profitability. *Econnomic Change and Restructuring*, 55 (2),737-774. https://doi.org/10.1007/s10644-021-09321-z

Ali, A., & Siddiqui, D. (2020).Exploring the nexus between financial flexibility, managerial efficiency, ownership, and performance: An interactive model for growth, mature, and stagnant companies in Pakistan. Retrieved from: https://ssrn.com/ abstract=3681306.

Ali, N. (2022). Studying and testing the relationship between sustainability growth rate and financial and operational performance for non- financial listed companies on Egyptian stock exchange- An accounting perspective. *Alexandria Journal of Accounting Research*, (3) 6, 513- 587.

Almaleeh, N., Badr, I, & Omran, R. (2024). The impact of CEO power on financial flexibility: the moderating effect of corporate governance. *Science Journal for Commercial Research*, 3 (July), 96-129.

Alsamhi, M., Al-Ofairi, F., Farhan, N. , Al-ahdal, W., & Siddiqui, A. (2022). Impact of Covid-19 on firms' performance: Empirical evidence from India. *Cogent Business & Management*, 9(1), 1-16. https://doi.org/10.1080/23311975.2022.2044593.

Altahtamouni, F., Alfayhani, A., Qazaq, A., Alkhalifah, A., Masfer, H., Almutawa, R., & Alyousef, S. (2022). Sustainable growth rate and ROE analysis: An applied study on Saudi banks using the PRAT model. *Economies*, 10 (70),1-12. https://doi.org/10.3390/economies10030070.

Amouzesh, N., Moeinfar, Z., & Mousavi, Z. (2011). Sustainable growth rate and firm performance : Evidence from Iran stock exchange. *International Journal of Business and Social Science,* 2 (23), 249-255.

Appiah, K., Addai, B., Ekuban, W., Aidoo, S., & Amankwah-Amoah, J. (2022). Management research and the impact of COVID-19 on performance: A bibliometric review and suggestions for future research. *Future Business Journal*, *8*(1), (41). https://doi.org/10.1186/s43093-022-00149-1.

Arora, L., Kumar, S., & Verma, P. (2018). The anatomy of sustainable growth rate of Indian manufacturing firms. *Global Business Review*, 19 (4)*,* 1050 - 1071. https://doi.org/10.1177/0972150918773002.

Arslan-Ayaydin, Ö., Florackis, C., Ozkan, A. (2014). Financial flexibility, corporate investment and performance: Evidence from financial crises. *Review of Quantitative Finance and Accounting*, 42, 211–250. https://doi.org/10.1007/s11156-012-0340-x

Atayah, O., Dhiaf, M., Najaf, K., & Frederico, G. (2021). Impact of COVID-19 on financial performance of logistics firms: Evidence from G-20 countries. *Journal of Global Operations and Strategic Sourcing*, 15 (2), 172-196. https://doi.org/ 10.1108/JGOSS-03-2021-0028.

Athira, A., Ramesh, V., & Sinu, M. (2024). COVID-19 pandemic and firm performance: An empirical investigation using a cross-country sampl, *IIMB Management Review* (In Press). https://doi.org/10.1016/j.iimb.2024.07.002.

Babcock, G. (1970). The concept of sustainable growth. *Financial Analysts Journal,* 26(3), 108–114. https://doi.org/10.2469/faj.v26.n3.108.

Bagh, T., Naseer, M., & Khan, M. (2022). Modeling the impact of corporate risk management on firms' financial performance and sustainable growth. *Studies of Applied Economics*, 40 (1): 1-19. https://doi.org/10.25115/eea.v40i1.4738.

Bose, S., Shams, S., Ali, M., & Mihret, D. (2022). COVID-19 impact, sustainability performance and firm value: International evidence. *Accounting & Finance*, 62(1), 597–643. https://doi.org/10.1111/acfi.12801.

Bouzgarrou, H., Jouida, S., & Louhichi, W. (2017). Bank profitability during and before the financial crisis: Domestic versus foreign banks. *Research in International Business and Finance, 44*, 26-39. https://doi.org/10.1016/J.RIBAF.2017.05.011.

Chen, X. , Liu, C. , Liu, F. & Fang, M. (2021) Firm sustainable growth during the COVID-19 Pandemic: The role of customer concentration. *Emerging Markets Finance and Trade*, 57 (6), 1566-1577. https://doi.org/10.1080/1540496X.2021.1904884.

Denis, D. (2011). Financial flexibility and corporate liquidity. *Journal of Corporate Finance, 17*, 667-674. https://doi.org/10.1016/J.JCORPFIN.2011.03.006.

El Madbouly, D. (2022). Factors affecting the sustainable growth rate and its impact on firm value: Empirical evidence from the Egyptian stock exchange. *Journal of Accounting and Auditing of AARU*, 11(1), 1-40.

Ellili, N. (2024). Board gender diversity, investment efficiency and sustainable growth: evidence from Gulf Cooperation Council. *Corporate Governance*, (ahead-of-print). https://doi.org/10.1108/CG-10-2023-0448.

Fahlenbrach, R., Rageth, K., & Stulz, R. (2021). How valuable is financial flexibility when revenue stops? Evidence from the COVID-19 Crisis, *The Review of Financial Studies*, 34 (11), 5474–5521. https://doi.org/10.1093/rfs/hhaa134

Firmansyah, A. & Kartiko, N. (2024) Exploring the association of green banking disclosure and corporate sustainable growth: The moderating role of firm size and firm age. *Cogent Business & Management*, 11(1), (2312967). https://doi.org/ 10.1080/23311975.2024.2312967

Foss, N. (2021). The impact of the Covid-19 pandemic on firms' organizational designs. *Journal of Management Studies*, 58(1), 270–274. https://doi.org/10.1111/joms.12643.

Gamba, A., & Triantis, A. (2008). The value of financial flexibility. *Journal of Finance*, 63 (5), 2263–2296. https://doi.org/10.1111/j.1540-6261.2008.01397.x

Gopalakrishnan, B., Jacob, J., & Mohapatra, S. (2022). COVID-19 pandemic and debt financing by firms: Unravelling the channels. *Economic modelling*, *114*, (105929). https://doi.org/10.1016/j.econmod.2022.105929.

Hao, Z., Zhang, X., & Wei, J. (2022). Research on the effect of enterprise financial flexibility on sustainable innovation. *Journal of Innovation & Knowledge*, 7 (100184). https://doi.org/10.1016/j.jik.2022.100184

Harkleroad, D. (1993). Sustainable growth rate analysis: Evaluating worldwide competitors' ability to grow profitably. *Competitive Intelligence Review*, 4(2-3), 36–45. https://doi.org/10.1002/cir.3880040209.

Higgins, R. (1977). How much growth can a firm afford? *Financial Management*, 6, 7–16.https://doi.org/10.2307/3665251.

Hossain, A., & Khalid, M. (2018). Determinants of bank profitability before and during crisis: Evidence from Bangladesh. *International Journal of Finance and Accounting,* 7 (5), 142-146. https://doi.org/10.5923/j.ijfa.20180705.02.

Hu, S., & Zhang, Y. (2021). COVID-19 pandemic and firm performance: Cross-country evidence. *International Review of Economics & Finance*, 74, 365–372. https://doi.org/10.1016/j.iref.2021.03.016.

Hunjra, A., Bouri, E., Azam, M., Azam, R., & Dai, J. (2024). Economic growth and environmental sustainability in developing economies. *Research in International Business and Finance*, 70 (102341). https://doi.org/10.1016/j.ribaf.2024.102341

Ionita, C., & Dinu, E. (2021). The effect of intangible assets on sustainable growth and firm value : Evidence on intellectual capital investment in companies listed on Bucharest Stock Exchange. *Kybernetes,* 50, 2823-2849. https://doi.org/10.1108/K-05-2020-0325.

Kijkasiwat, P. & Phuensane, P. (2020). Innovation and firm performance: The moderating and mediating roles of firm size and small and medium enterprise finance. Journal of Risk and financial Management, 13 (97), 1-15. https://doi.org/10.3390/jrfm13050097

Kong, P. (2022). Financing constraints, financial flexibility and corporate sustainability innovation. Academic Journal of Business & Management, 4 (14), 1-10. https://doi.org/ 10.25236/AJBM.2022.041401.

Kumar, S., & Zbib, L. (2022). Firm performance during the Covid-19 crisis: Does managerial ability matter?. *Finance research letters*, 47, (102720). https://doi.org/10.1016/j.frl.2022.102720.

Lester, R., Rouen, E., & Williams, B. (2021). Financial flexibility and corporate employment. *Harvard business school*. Retrieved from https://ssrn.com/abstract=3829751.

Li, Z., Feng, L., Pan, Z., & Hafiz, S. (2022). ESG performance and stock prices: Evidence from the COVID-19 outbreak in China. *Humanit Soc Sci Commun*, 9 (1), 242. https://doi.org/10.1057/s41599-022-01259-5.

Lin, Z. (2024). Does ESG performance indicate corporate economic sustainability? Evidence based on the sustainable growth rate. *Borsa Istanbul Review*,24 (3), 485-493. https://doi.org/10.1016/j.bir.2024.02.010.

Liu, H., Yi, X., & Yin, L. (2021). The impact of operating flexibility on firms' performance during the COVID-19 outbreak: Evidence from China. *Finance research letters*, *38*, 101808. https://doi.org/10.1016/j.frl.2020.101808.

Liu, M., Peng, L., Huang, R., Liu, H., Duan, Y. & Lin, S. (2023). Independent director-CEO friendliness and sustainable growth capability in enterprises: The moderating role of CSR and executive compensation. *Cross Cultural & Strategic Management*, 30 (1), 69- 92. https://doi.org/10.1108/CCSM-12-2021-0225

Lusmeida, H. & Adilla, P. (2023). The effect of good corporate governance, sustainable growth rate on disclosure of sustainability reporting and moderated by Covid-19. Proceeding of 3rd International Conference on Entrepreneurship (IConEnt) "Entrepreneurship in Disruption Era". Retrieved from: https://ojs.uph.edu/index.php/IConEnt/article/view/7863.

Makni, M. (2023). Analyzing the impact of COVID-19 on the performance of listed firms in Saudi market. *Technological forecasting and social change*, *187*, (122171). https://doi.org/10.1016/j.techfore.2022.122171.

Mamilla, R. (2019). A study on sustainable growth rate for firm survival. *Strategic Change*, 28(4), 273-277. https://doi.org/10.1002/jsc.2269.

Marcus, R. (2012). Internal and sustainable growth rates in the presence of scale economies. Retrieved from: https://ssrn.com/abstract=2142160.

MPED (2020). Impact of COVID-19 on the Egyptian economy: Economic sectors, jobs, and households. *Ministry of Planning and Economic Development*. Retrieved from:https://mped.gov.eg/AdminPanel/sharedfiles/8_the%20impacts%20of%20covid-19%20on%20egypt%E2%80%99s%20economic%20sectors.pdf

Mumu, S., Susanto, S., and Gainau, P. (2019). The sustainable growth rate and the firm performance: Case study of issuer at Indonesia stock exchange. *International Journal of Management, IT & Engineering* , 9 (12), 10-18.

Myers,S. & Majluf, N. (1984) Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13 (2), 187–221. https://doi.org/10.1016/0304-405x(84)90023-0.

Naseer, M., Khan, M., Bagh, T., Guo, Y., & Zhu, X. (2023). Firm climate change risk and financial flexibility: Drivers of ESG performance and firm value. *Borsa Istanbul Review*, 24, 106-117. http://dx.doi.org/10.1016//j.bir.2023.11.003.

Neukirchen, D., Engelhardt, N., Krause, M., & Posch, P. (2022). Firm efficiency and stock returns during the COVID-19 crisis. *Finance research letters*, 44, (102037). https://doi.org/10.1016/j.frl.2021.102037.

Ocak, M., & Findik, D. (2019). The impact of intangible assets and sub-components of intangible assets on sustainable growth and firm value: Evidence from Turkish listed firms. *Sustainability*, 11 (5359). http://dx.doi.org/10.3390/su11195359.

Omara, M., & Rashed, A. (2023). Financial flexibility and investment efficiency: The moderating role of board financial expertise. *Investment Management and Financial Innovations*, 20 (4), 283-296. http://dx.doi.org/10.21511/imfi.20(4).2023.23.

Qadri, S., Ma, Z., Raza, M., Li, M, Qadri, S., Ye, C., & Xie, H. (2023) COVID-19 and financial performance: Pre and post effect of COVID-19 on organization

performance; A study based on South Asian economy. *Frontiers in Public Health,* 10 (1055406). doi: 10.3389/fpubh.2022.1055406.

Rahim, N. (2017). Sustainability growth rate and firm performance: A case study in Malaysia. *International Journal of Management, Innovation & Entrepreneurial Research*, 3 (2), 48-60. https://doi.org/10.18510/ijmier.2017.321.

Ramli, N., Rahim, N., Nor, F. & Marzuki, A. (2022) The mediating effects of sustainable growth rate: Evidence from the perspective of Shariah-compliant companies. *Cogent Business & Management*, 9 (1), (2078131). https://doi.org/ 10.1080/23311975.2022.2078131

Rapp, M. S., Schmid, T., & Urban, D. (2014). *The value of financial flexibility and corporate financial policy. Journal of Corporate Finance,* 29, 288– 302.* https://doi.org/10.1016/j.jcorpfin.2014.08.00.

Sharma, S., Durand, R., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research,* 18(3), 291– 300. https://doi.org/10.2307/3150970

Shen, H., Fu, M., Pan, H., Yu, Z., & Chen, Y. (2020). The impact of the COVID-19 pandemic on firm performance. *Emerging Markets Finance and Trade*, 56 (10), 2213-2230, https://doi.org/10.1080/1540496X.2020.1785863

Sheng, X., & An, Y. (2024). The nonlinear impact of financial flexibility on corporate sustainability: Empirical evidence from the Chinese manufacturing industry. *Heliyon,* 10 (e27825). DOI:10.1016/j.heliyon.2024.e27825

Söderlund, M. (2023). Moderator variables in consumer research: A call for caution. *Journal of Retailing and Consumer Services*, 73 (103352). https://doi.org/10.1016/j.jretconser.2023.103352.

Teng, X.; Chang, B.-G.; Wu, K.-S. (2021). The role of financial flexibility on enterprise sustainable development during the COVID-19 crisis: A consideration of tangible assets. *Sustainability*, 13 (1245). https://doi.org/10.3390/su13031245.

Theresia, V., & Triwacananingrum, W. (2022). Sustainability reporting and sustainable growth rate: COVID-19 moderating variable. *Media Riset Akuntansi, Auditing & Informasi*, 22 (1), 41-64. http://dx.doi.org/10.25105/mraai.v22i1.12824

Vasiu, D. & Ilie, L. (2018). Sustainable growth rate: An analysis regarding the most traded companies on the Bucharest stock exchange. *Emerging Issues in the Global Economy*, 381-394. Conference paper. https://doi.org/10.1007/978-3-319-71876-7_34.

Wang, L., Tian, Z., Wang, X. & Peng, T. (2023). C.E.O. academic experience and firm sustainable growth. *Economic Research-Ekonomska Istraživanja*, 36 (2), 2135553. https://doi.org/10.1080/1331677X.2022.2135553.

Wassef, A,. Zamel, A. , El Dardery, O. , Moubarak, H. & Badawy, H. (2024). Unraveling Determinants of Sustainable Growth in Egyptian Firms across the Firm Life Cycle. *Journal of Accounting and Auditing: Research & Practice,* 2024, 196114. https://doi.org/10.5171/2024.196114.

World Bank (2021). Egypt's economic update. Retrieved from : https://www.worldbank.org/en/country/egypt/publication/economic-update-october-2021

Wu, W., Le, C., Shi, Y. & Alkaraan, F. (2024). The influence of financial flexibility on firm performance: The moderating effects of investment efficiency and investment

scale. *Journal of Applied Accounting Researc*h, (ahead-of-
print). https://doi.org/10.1108/JAAR-07-2023-0192.

 Xiazi, X. & Shabir, M. (2022) Coronavirus pandemic impact on bank performance. *Frontiers in Psychology,* 13(1014009). https://doi.org/10.3389/fpsyg.2022.1014009.

Yi, J. (2020). Financial flexibility, dynamic capabilities, and the performance of manufacturing enterprises. *Journal of Research in Emerging Markets*, 2(2)19-33. https://doi.org/10.30585/jrems.v2i2.465.

Zhang, D., Wang, C., & Dong, Y. (2023). How does firm ESG performance impact financial constraints? An experimental exploration of the COVID-19 pandemic. *The European journal of development research*, 35(1), 219–239. https://doi.org/10.1057/s41287-021-00499-6.

Zhang, H., Zhang, Z., & Steklova, E. (2020). Do companies need financial flexibility for sustainable development? *Sustainability*, 12(5),1811. https://doi.org/10.3390/su12051811

Zhang, X., Chang, B., & Wu, K. (2022). COVID-19 shock, financial flexibility, and hotels' performance nexus. *Frontiers Public Health*, 10 (792946). https://doi.org/10.3389/fpubh.2022.792946.