

**The Effect of financial constraints on audit fees "An  
Empirical Study on Egyptian Listed Companies"**

**Research extracted from master's degree thesis titled:**

**The Relationship Between Financial Constraints and Audit Fees and  
Its Reflection on Audit Quality Applying to Companies Listed On The**

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## **Abstract**

The main objective of this research was to investigate the relationship between financial constraints and audit fees.

The sample of the study included 93 nonfinancial listed companies on the Egyptian Stock Exchange during the period from 2018 to 2022. The total number of observations was 465 observations.

The research results concluded a positive significant relationship between financial constraints and audit fees.

The researcher recommends the need to find scientific methods to be used to determine audit fees that are consistent with the effort expended when conducting the audit process, instead of making the process of determining audit fees a matter of judgment that varies from one company to another. It is necessary for professional and regulatory bodies to issue financing programs and establish special funds to assist financially constrained companies, whether with financial assistance or by providing guidance to emerge from this crisis, to limit these companies' resort to means that threaten the efficiency of the capital market. In addition, researchers to be aware of the importance of conducting further accounting studies and research on financial constraints and its effects on the Egyptian business environment.

**Key words:** Financial Constraints – Audit Fees – Egyptian listed firms

## 1. Research problem

Under normal conditions, all companies can obtain the necessary financial needs, but in view of the current labor market changes, companies cannot benefit from the normal situation, due to the changes in the financial markets and the multiplicity of risks faced by companies, including the inability to provide the necessary funds to survive and continue in business. Market competition and this exposes the company to financial constraint (Denis and Sibilkov, 2010).

As the listed companies face more difficulties, they limit their ability to borrow due to the high cost of external financing, and thus limit the ability of the company to exploit the available investment opportunities, so the companies rely on internal financing, and sometimes companies give up internal financing opportunities due to the lack of liquidity (Christodoulou et al., 2022).

Recently, Also the financial and economic crises facing most countries of the world have led to a state of economic stagnation, the collapse of most financial markets, and the deterioration of the credit rating of most companies, and thus will consequently lead to an increase in problems and risks that eventually lead to exposure of companies to financial constraints, and this may limit the ability of companies to Obtaining loans, credit problems, and lack of investment opportunities (الفار، 2022).

And the fact that the companies are financially constrained, this will affect several areas, including the field of audit, which means audit procedures, including audit fees. Many previous studies, such as the study of (Abdul-Rahman et al, 2017; Alahdab, 2018; 2019, أبو نصار), dealt with the factors affecting audit fees, including the size of the audit office, Contract holding period, the degree of risk, The complexity of the company under review, and the size of the company under review.

The audit process is considered one of the most important services provided by the auditor, and the auditor receives a fee for performing his work and expressing his opinion. This is called the audit fee. The audit fees are considered one of the most important determinants that affect the audit quality (صالح، 2021) .

And previous studies dealt with that companies that have financial constraints increase the audit fees due to the increase in the time and effort required to complete the audit process (Chen et al., 2019). but companies that do not have financial constraints can reduce the audit fees because the financial constraints make the company not have sufficient liquidity due to the high cost of external financing and resorting to internal financing (Almeida and Silva, 2020).

According to the above discussion, the research problem can be concluded in the following question: Does financial constraints affects audit fees?

## **2. Research objective**

The main objective of the research is to investigate the relationship between financial constraints and audit fees for a sample of nonfinancial listed firms on the Egyptian stock exchange.

## **3. Research hypotheses**

In the light of the research problem and to achieve its objective, the researcher developed the following hypothesis:

**H1:** there is a positive significant relationship between financial constraints and audit fees.

## **4. The nature of financial constraints (FC):**

When addressing financial constraints, some theories or hypotheses associated with constraints must be clarified, including that of the capital structure presented in study of Miller and Modigliani in 1959. This theory stipulates that "the possibility of business enterprises obtaining their need from external sources of financing at the time of need", which is called (perfection assumption).

But because of the theoretical irrationality of the capital structure that caused it to look like a starch or the appearance of financial constraints, to determine whether a firm is financially constrained or not we need to define what being financially constrained means. There are many studies that illustrated definitions of financial constraints (FC), and one of the first studies was the study of Kaplan and Zingales in 1995.

This study indicated that the company is defined as financially constrained if the cost of external funds prevents the company from making any investment, it will have to make investments using available internal funds. this means a clear difference between internal financing and external financing (Kaplan and Zingales,1995, P6).

Underscoring the irrationality of the capital structure and the difference between external and internal sources of finance as well as the lack of disappearance of financial constraints, when said in 2003 A study by korajczyk and others that financial constraints meant that companies that had insufficient liquidity to exploit available investment opportunities were ostensible because of the agency's high costs, making it difficult for the company to move in the capital markets(korajczyk etal .,2003,P82).

While this study defined the financial constraints as the obstacles that the company is exposed to as it limits ability`s firm to obtain sufficient liquidity to exploit investment opportunities, and this results in lower rates of operational performance and growth and an increase in economic and financial risks (Alrashidi etal.,2021).

In 1997, the Kaplan and Zingales study was developed to discuss the definition of financial constraints and their relationship with investment cash flows sensitivity (ICFS). It showed that companies are financially constrained if the difference between the cost of internal financing and the cost of external financing increases (Kaplan and Zingales,1997, P172).

In 1987, Fazzari and others presented the first form showing the introduction of financial constraints in the analysis of corporate investments. Where this study indicated to the possibility of classifying companies as financially constrained or financially unconstrained based on the investment's elasticity in response to changes in firms 'cash flow (investment cash flow sensitive), also suggested that financially constrained firms should have greater difficulty in getting external funding. As a result, companies direct cash flows to finance investments, instead of paying dividends for example (Fazzari etal.,1987, P2).

Also, Salehi's study indicated that financial constraints present challenges to the company's confrontation and make it suffer from severe financial constraints. Thus, companies must maintain more cash and large companies differ from small companies. Large companies have a number of shareholders demand more accurate and high auditing services and therefore the audit fees increase (Salehi et al., 2018, P20).

Another definition presented by Lamont and others in 2001 describes financial constraints as challenges that prevent the company from financing all desired investments. Financial constraints may arise due to credit constraints, the obligation of old bank loans, inability to issue shares, inability to borrow, or inability to monetize assets or cash holding (Lamont et al., 2001, P1).

Seidu and others in 2021 also explained that financial constraints could arise because the company is in financial distress and needs funds to cover short-term operating cash flow obligations or either from the company's inability to finance all available investment opportunities (Seidu et al., 2021).

In the same vein, Zhu's study and others stated that financial constraints indicated that the costs of external funding sources were higher than internal funding costs because of asymmetric information and agency problems. In general, enterprise growth depends mainly on the support of external funds, resulting in financial constraints that can have a significant impact on the company's likelihood of survival and sustainability (Zhu et al., 2021, P404).

Kim's study and others stated that financial constraints occur when there is a significant discrepancy between the cost of external funding and the cost of internal financing. This study indicated that there had been previous studies indicating that financial constraints had negative effects on companies' profit-paying policy.

Otherwise, other studies have indicated that financially constrained companies pay dividends to shareholders and that the number of financially constrained companies paying dividends increases over time. Financially constrained companies have incentives to use dividends to make a good reputation for later reducing external financing costs (Kim et al., 2021, P1).

(Becker et al., 2022) study suggested that listed companies need external funding, but seek to reduce the cost of obtaining it, and seek to raise the quality and credibility of accounting information using a high-quality auditor.

Hu's 2023 study also agreed with previous studies in the concept of financial constraints. The study stated that the constraints point to the challenges faced by the company, adding to the agency's problems and the problem of asymmetry of information. These problems make the cost of the external capital higher than the internal capital (Hu, 2023, P2).

In general, the researcher agrees with the definitions mentioned in previous studies of companies' financial constraints such as (Fazari et al., 1987; Kaplan and Zingales, 1995; Lamont et al., 2001; Korajczyk et al., 2003; Benjamin, 2019; Zhu et al., 2021; Becker et al., 2022) which places great emphasis on that financial constraints are constraints or challenges to the company because they limit the company's ability to obtain sufficient liquidity to exploit investment opportunities.

Companies can be classified as financially constrained or financially unconstrained based on investment flexibility in response to changes in corporate cash flow as financially constrained companies must have greater difficulty in obtaining external financing. Financial constraints also indicate that the costs of external funding sources are higher than those of internal funding owing to asymmetries in information and agencies' problems.

## **5. Types of Financial Constraints:**

Regarding types of financial constraints (Marouene and Abaoub, 2013, p15) study presented that financial constraints are divided into two types (External and internal):

### **5.1 External group of financial constraints:**

It has been shown that the external financial constraints are related to the problem of asymmetry of information (Marouene and Abaoub, 2013, p15) and therefore he classified the criteria for measuring external financial constraints as follows: (Guariglia, 2008)

### **5.1.1 Retention Ratio:**

Means that companies that maintain a higher percentage of retention ratio are more financially constrained than other companies. On the contrast, companies with lower retention have a lower cost of obtaining external financing sources.

### **5.1.2 Firm Size:**

Means that the difficulty or ease of obtaining external funds is determined by the size of the company. If it is small, its financing is limited. Only large companies can increase their debts.

### **5.1.3 Firm Age:**

Means that the cost of external financing sources represents a great danger to modern companies.

### **5.1.4 listing:**

That is, the listed companies are less constrained than the unlisted companies, because the listed companies face less problems in the asymmetry of information to provide reports in the stock market, and therefore the listed companies enjoy easy access to the capital markets and have a good financial position and a good bond rating as well.

### **5.1.5 Membership of the company:**

That is, companies belonging to a group of companies may have easier access to capital markets than independent companies.

### **5.1.6 Bond Rating:**

That is, companies with a bond rating have greater access to the capital markets, and these companies are also large and mature.

## **5.2 Internal group of financial constraints:**

It has been shown that the internal financial constraints are related to the level of internal funds available to the company (Marouene and Abaoub, 2013, p16), so the internal constraints are measured by some criteria such as: (Guariglia,2008)



### 5.2.1 Cash Flow:

It is the cornerstone of internal funds. Companies that have negative cash flow are considered to be in financial distress and have a low level of internal funds.

### 5.2.2 Zfc score:

A study of (Chang et al.,2007, p90) showed that the companies used a number of variables with the current and low cash flow ratio, the debt ratio to create a strong financial indicator called the score, and these variables are analyzed so that a strong indicator is created in the registered companies over the unregistered companies.

## 6. Concept of Audit Fees:

Professional organizations and academic studies have paid attention to the concept of audit fees. Simunic's study (1980) is considered one of the first definitions of audit fees, as he defined it as the product of multiplying the unit price with the amount of auditing services provided by accounting and auditing firms, according to what the auditing process needs (Simunic,1980, P 161).

After the definition of the Simunic study, the study of (العتار) in 2003 indicated that audit fees were the amounts received by the auditor from the client's audited company for the services of the auditor, which is to say the audit fees represented the cost of time taken based on the standard hourly rate, in addition to any other expenses (العتار، 2003، ص178).

Suharli and Nurlaelah's study in 2008 found that audit fees as the fees charged by an accountant to the client for the audit services. Also, this is in accordance with the opinion of the Securities and Exchange Commission that the audit fee is the fee paid for annual audits and reviews of financial statements for the recent fiscal year.

In the same context, the study of (Yuniarti,2011, P86) confirmed that the audit fee is the fees paid for audits and reviews of financial statements for the recent fiscal year. And The amount of audit fee can vary rely on the complexity of services, assignment risk, the cost structure of Public Accountants Firm, the required level of expertise. In the same year, Mehrani and Jamshidi (2011) study discussed that Audit fee includes any fees paid to the auditor or audit firm on a contractual basis for the provision

of audit services. The economic interests of the auditor are provided through fees.

Also (Abdul Rahman et al., 2017, P10) discussed that audit fees mean the amount charged by the auditor for an audit assignment performed. That is, the amount charged by the auditor for any work achieved to express opinion on position of the client's firm.

(Nkemjika et al., 2017, P978) study suggested that Audit fees mean all charges that the firms pay to the external auditors for the audit services and non-audit services, such as management advisory and consultants. Auditing fees consist of the wages and benefits of office, travel costs, and other costs necessary to the audit.

(Ibrahim and Ali ,2018, P2) study presented that Audit fee is the reward received from a client for performed audit service. And it is the sum charged by the auditor against the audit service for client.

In the same year, (Ohidoa and Okun, 2018, P.712-713) study presented that audit fees are the amount paid to the financial auditors to assent the financial statements, in other words, audit fees can be defined as the amounts of wages counted by the auditor for the task of auditing the accounts of the firm.

This study also compatible with previous studies in the concept of audit fees. (Salehi et al., 2019, P205) study discussed that audit fees mean the quantity of required expenses by the auditor for an audit operation. In other words, the amount of expense that is required by the auditor for any performed activities to express opinion on the real state of the firm and the customer.

The Study of (محمود، 2020، ص18) clarified that Audit fees are the cash amount that the external auditor receives because of the effort and time spent by him and his team and issue his report in accordance with generally accepted accounting principles. Also audit fees represent the main source of revenue for audit offices that seek to increase their fees to obtain the highest possible return from the practice of the audit occupation.

In the study of Alrashidi in 2021, the audit fees were considered as an indication of the quality of the audit process, reflecting the time and effort of the auditor to perform the audit process and reduce the risk of the audit (Alrashidi et al., 2021, P5).

In 2022, the study of (Yahaya and Onyabe) indicated that audit fees included all reasonable costs incurred by the client to pay the auditor's firm. Therefore, high audit fees are expected to attract high quality audit firms, so there will be an improvement in its audited quality. It is necessary to note that these fees vary considerably according to the audit firm's place of contract and the variety of services provided (Yahaya and Onyabe, 2022, P67).

Studies (Hussein, 2021; Mustafa, 2022; Abdel-Rahim and Khamis, 2022; Abu El-Ela, 2021) demonstrated that the audit fees are the value of what the auditor receives from the audit client as a result of the contractual relationship between the accounting firm, auditing firm and the audit client in exchange for the time and effort expended in carrying out the audit process, as required by auditing standards and ethical principles of the auditing vocation.

Also in 2023, Susilawati's study indicated that audit fees were a form of service compensation provided by the company to the auditor to provide public accounting services in accordance with his contract of employment (Susilawati et al., 2023, P195).

## **7. Factors affecting audit fees:**

Although there are many factors affecting audit fees, there is no general agreement on standardized factors and measures due to the varying relative importance of audit fees from factor to factor. (ابونصار، 2019، ص 18:15)

### **7.1 The size of the Audit Office:**

There is a positive correlation between the size of the Office of Audit and the audit fees, the higher the size of the Office of Audit was able to appoint auditors with high efficiency and spend a lot of funds, which positively reflected the quality of the audit process, and given the size and reputation of the Office, the Office of Auditor charged higher fees than other auditors' offices.

## **7.2 Contract Tenure Period:**

There is a positive relationship between the audit fees and the tenure period of the contract. The contract acquisition means the commitment period agreed between the audit office and the client's company and the existence of the parcel relationship due to the high Audit fees in the years subsequent to the first year. The audit office imposes low audit fees in the first year of the client's earning and thereafter raises those fees. However, the length of the auditor's reverse engagement with the client may be linked to the audit fees, due to the audit office's attempt to retain the client.

## **7.3 firm Size audited:**

There is a positive relationship between the size of the client's company and the audit fees, The larger the company, the more time and effort required from the auditor to complete the audit process, which would result in an increase in the auditor's fees.

## **7.4 Degree of Risk:**

The degree of risk is the risk that leads to the auditor expressing an opinion that incorrectly reflects the content of the financial statements, which negatively affects the reputation of the auditor's office, so there is a direct relationship between the degree of risk and the time required to carry out the audit process in an effort to achieve a fair outcome that does not affect the reputation of the auditor's office, which affects the auditor's fees.

## **7.5 Complexity of the Firm Audited:**

The degree of complexity means that the references use certain persons and external parties in matters that are outside their competence, thereby increasing the costs of performing the audit service, and thus fees increase. Hence a positive relationship between complexity and time and effort made by the auditor.

## **8. Analyzing the financial constraints and audit fees and developing the research hypothesis:**

Salehi et al., (2018) aimed to investigate the relationship between cash holdings, investment opportunities and financial constraint with audit fees. The sample depend on collect data by all manufacturing companies listed on the Tehran Stock Exchange are used to test the hypotheses during 2008–2015. Panel data and combined data regression model were used for data analysis. The results obtained from the statistical analysis of research hypotheses indicated that there is a significant relationship between cash holdings and audit fees. Furthermore, the relationship between cash holdings, financial constraints and audit fees was significant. In addition, there was no significant relationship between cash holdings, investment opportunities and audit fees.

Chen et al., (2019) aimed to investigate how audit fees change in responding to the financial crisis of 2008. It also examines auditors' perceived risk and how they priced the risk in the financial crisis. Using a sample of 20,930 firm-year observations, this study examines the change of audit fees before, during and after the financial crisis, as well as the relationship between audit fees and restatements. The study finds that audit fees increase because of the macro-systemic risks from the crisis. It also finds that there is a significantly positive relationship between audit fees and restatements, which is a proxy of risk factors related to poor financial reporting quality and poor audit quality. However, the results show that there is no significant change of the fees–restatements relationship in the financial crisis period. financially constrained companies involve a high level of risk and have weak internal control mechanisms, and this will lead to errors in financial reports and thus requires increased effort and time on the part of the auditor and an increase in the sample size, and accordingly will affect the cost of the audit process. The auditor's fee increases.

Benjamin (2019) aimed to examine the effects of financial constraints faced by firms on audit fees, and the mediating effects of corporate cash holdings, discretionary accruals, and corporate tax avoidance activities. This study is based a large sample of U.S. listed firms from 2000 to 2016. Also, it uses the conventional audit-fee model, with an emphasis on controlling for fee determinants associated with firm risk, client characteristics, and audit and auditor characteristics. The results reveal that there is a positive and significant effect of financial constraints

on audit fees. The finding is robust to alternative proxies of financial constraints and regression specifications. Moreover, the effects of financial constraints on audit fees are mediated positively by corporate cash holdings, discretionary accruals, and corporate tax avoidance.

Khodadadi et al., (2019) aimed to examine the role of funding constraints in changing the interactive effect between managers' over-confidence and auditing fees. using the data of the companies, listed in the Tehran Stock Exchange for the period 2006 to 2016, have been extracted and the combined data regression model has been used to test the research hypotheses. the results indicate that financial constraints lead to changes in audit fees. Also, financing constraints have a significant effect on the audit fees.

(Shagerdi et al.,2020) aimed to present the author's methodological proposal in the field of management and development planning, taking the opinions of the commune inhabitants. The sample of the study has included all listed companies in Tehran Stock Exchange. After sampling 141 companies were studied using data from 2011 to 2018 using the multiple regression method. The results showed that there was a significant relationship between investment efficiency and audit fee, and financial distress had a significant effect on the relationship between investment efficiency and audit fee.

Simanullang and Tresna (2021) aimed to examine the effect of cash holding on audit fees which is moderated by financial constraints and investment opportunities. Cash holding, financial constraints and investment opportunities have a positive influence on audit costs. This is in accordance with the hypothesis and based on agency theory. Empirical Studies on Manufacturing Companies Listed on the IDX for the 2016-2019. This study found that cash holding has no relationship with audit fees. The mediating variable for financial constraints has a positive relationship with audit fees, while investment opportunities have a negative relationship with audit fees.

(الفار،2022) aimed to test the impact of financial constraints on the auditor's fees, as well as the impact of cash retention and the characteristics of the board of directors. The study sample consisted of (97) companies that are not listed on the Egyptian Stock Exchange, with a total number of (477) annual views, during the period from (2016 to 2020). The results revealed that there is no significant effect of the financial constraints of companies on the fees of the auditor, and that there is no significant effect

for each of the level of cash retention, the size of the board of directors, duplication, and the number of board meetings. While there is a significant negative effect for each of the characteristics of the board of directors combined, and the diversity of the gender of the members of the board of directors.

Becker et al., (2022) aimed to investigate whether financially constrained firms use costly audit signals to facilitate their access to external financing. The sample includes period is fiscal years 2004 through 2015, which is the last year of available data in the financial constraints database. We begin with 42,503 firm-years but exclude financial firms (SIC 6000– 6999) and utilities (SIC 4900 – 4999), yielding 40,027 observations. We discard firms with total assets less than \$1 million, firms with stock prices less than \$1 or missing, firms with non-positive sales, firms with no cash holdings, and firms with no shares outstanding, yielding 30,344 observations. We also exclude firms with missing or zero audit fees, reducing the number of observations to 28,934. The results found that costlier and timelier audits facilitate equity-seeking constrained, but not debt-seeking constrained, firms' access to financing. Also, findings suggest that while financially constrained firms feel pressure to make cuts across various expenditure categories, negotiating lower audit fees in the face of higher financial constraints may not be a wise strategy.

The researcher concludes from the above discussion that (To the extent of the researcher's knowledge), there is a scarcity of studies that address the relationship between financial constraints and audit fees. All studies agreed that there is a positive impact relationship between financial constraints and audit fees, except for the study (Al-Far, 2022) which confirmed that there is no relationship between financial constraints and audit fees.

**Therefore, the research hypothesis can be developed as follows:**

**H1:** there is a positive significant relationship between financial constraints and audit fees.

## **9. The empirical study**

The empirical study aims to test the research hypotheses, by measuring the effect of financial constraints on audit fees for a sample of non-financial listed company on the Egyptian Stock Exchange, according to previous studies in different accounting environments (e.g. Shagerdi et al., 2020; Chen et al., 2019; Becker et al., 2022).

The study sample included 93 non-financial listed company on the Egyptian Stock Exchange during the period from 2018 to 2022. The total number of observations was 465.

### **9.1 Research variables measurement**

**Independent variable: financial constraints (FC),** A firm becomes financially constrained when it struggles to raise money by borrowing, selling shares, or liquidating assets. Consequently, reduced financial constraints render a firm more capable of attracting finance (Farooq et al., 2022). Thus, firms that can access finance will show a reduction in their financial constraints. In this study, the main proxy for financial constraints, the dependent variable, is the 'KZ-index', which is used extensively in the extant literature (e.g. Farooq et al., 2022; Baker, Stein, & Wurgler, 2003; Alrashidi et al., 2021). The KZ-index was developed by Kaplan and Zingales (1997) and is based on estimated coefficients of an ordered logit specification that uses accounting information to estimate whether or not a firm faces financial constraints. In accordance with the approach adopted in the empirical literature, regression coefficients are used to create a KZ-index for each firm/year observation, based on a linear combination of five accounting ratios: cash flow to total capital, market value to book value, debt to total capital, dividends to total capital, and cash holdings to capital. KZ-Index to classify firms as financially constrained or unconstrained. This index includes variables related to financial constraints, and it will identify firms that are more likely to be considered a financial constraint.



$$\text{KZ-Index}_{it} = -1.002 \text{ CF}_{it} \div \text{TA}_{i(t-1)} - 39.368 \text{ DIV}_{it} \div \text{TA}_{i(t-1)} - 1.315 \text{ C}_{it} \div \text{TA}_{i(t-1)} + 3.139 \text{ LEV}_{it} + 0.283 \text{ Q}_{it}$$

Where:  $\text{CF}_{it} \div \text{TA}_{i(t-1)}$  is cash flows from the operating activities of company (i) in the period (t) over total assets of company (i) in the period (t-1). This ratio is inversely related to the company financial restrictions.

$\text{DIV}_{it} \div \text{TA}_{i(t-1)}$  is cash dividends of company (i) in the period (t) over total assets of company (i) in the period (t-1). This ratio is inversely related to the company financial restrictions.

$\text{C}_{it} \div \text{TA}_{i(t-1)}$  is total of cash and cash equivalents of company (i) in the period (t) over total assets of company (i) in the period (t-1). This ratio is inversely related to the company financial restrictions.

$\text{LEV}_{it}$  is leverage, which is the ratio of total liabilities of company (i) in the period (t) over total assets of company (i) in the period (t). This ratio is directly related to the company financial restrictions.

$\text{Q}_{it}$  is the measure TobinsQ, which is the ratio of the sum of the market values of common and preferred shares and the fair value of the total debts of Company (i) in period (t) divided by the book value of total assets of Company (i) in period (t). This ratio is directly related to financial restrictions.

Based on the equation we compute the value of the KZ-Index of sample data; the higher the value of the KZ-Index more will be the firm has financial constraints.

**Dependent variable: is audit fees (AF)**, measured as the natural log of annual fees (in L.E) paid to external auditors for audit services (Garcia-Blandon et al., 2020; Jadiyappa et al., 2021).

**Control variables:** Firm size (Size) measured by the natural log of total assets. Leverage (LEV) measured by the ratio of total debt to total assets. Return of assets (ROA) measured by the ratio of the net income to total assets. Firm loss (LOSS) measured by A dummy variable assuming 1 if the company incurred loss for the current year, and 0 otherwise.

## 9.2 Descriptive Statistics

Table (1) Descriptive Statistics						
Variables	<i>n</i>	Mean	Median	Max.	Min.	Std. Dev
FC	465	0.471	0.000	1.000	0.000	0.492
AF	465	11.406	11.407	14.714	9.105	1.032
ROA	465	0.057	0.041	0.449	-0.481	0.108
SIZE	465	20.338	20.565	24.903	16.071	1.773
LEV	465	0.376	0.370	1.229	0.019	0.237
LOSS	465	0.226	0.000	1.000	0.000	0.418

It is clear from analyzing the results of the previous table that, the average of Financial Constraints (FC), for the full sample, is (47.1%) (219) of the firm-year observations show firm has financial constraints. The audit fees (AF) show a standard deviation of (1.032) which is very small relative to the mean (11.406). The audit fees (AF) show a small range between the minimum value (9.10) and the maximum value (14.71), reflecting the high concentration around the mean and the homogeneity in audit fees (AF) among the sampled firms.

The leverage shows a slight high deviation of (.237) which represent around (63%) of the mean (0.376). However, the return on assets, Firm profitability (ROA) exhibits a large dispersion of (0.108) which represent (189.5%) of the mean (0.057). The average firm loss (LOSS) for the entire sample is (22.6%) (105) of the firm-year observations show company incurred loss for the current year.

Finally, the firm size shows a standard deviation of (1.773) which is very small relative to the mean (20.338) due to the use of logarithm which caused smoothing in firm size among firms. The firm size shows a small range between the minimum value (20.56) and the maximum value (24.90), reflecting the high concentration around the mean and the homogeneity in firm size among the sampled firms.

### 9.3. Correlation Matrix

Table (2) Correlations						
Variables	AF	FC	ROA	SIZE	LEV	LOSS
AF	1					
FC	0.529** *	1				
ROA	0.155** *	0.058	1			
SIZE	0.490** *	0.394** *	0.182***	1		
LEV	0.312** *	0.195** *	-0.113**	0.299** *	1	
LOSS	- 0.107**	0.006	- 0.608***	- 0.100**	0.091**	1
Notes: ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively.						

**Table 2** displays the findings of the Pearson correlation analysis for the models' variables. the findings reveal a significant positive association between audit fees (AF) and Financial Constraints (FC)  $R=0.529$ , at 1% significance level. This indicate that firms with higher Financial Constraints are expected to be paid higher audit fees. Furthermore, audit fees (AF) has a significant positive correlation with firm profitability (ROA) at  $R=0.155$ , firm size (SIZE) at  $R=0.490$ , and firm leverage (LEV) at  $R=0.312$ . Conversely, it has a significant negative correlation with firm loss (LOSS) at  $R=-0.107$ .

#### 9.4. Testing the research hypothesis:

To testing the validity of the research hypothesis concerning the association between Financial Constraints and audit fees, begins by conducting a Multivariate OLS regression model as shown in table (3).

Table 3: The relationship between financial constraints and audit fees				
Predictor	Coefficient	t-value	P-value	VIF
FC	<u>0.525</u>	8.887	<u>0.000</u>	1.195
ROA	-0.035	-0.109	0.913	1.655
SIZE	0.387	22.154	0.000	1.320
LEV	2.296	2.441	0.015	1.143
LOSS	-0.125	-1.540	0.124	1.593
Constant	3.200	9.515	0.000	-----
R <sup>2</sup>	0.686			
Adjusted R <sup>2</sup>	0.683			
F-value	200.920		<i>p=0.000</i>	
Durbin-Watson	1.926			

Table (3) shows that there is no multicollinearity among the regressors of the audit quality model. As, the multicollinearity exists when the variance inflation factor (VIF) of any independent variable exceeds 10. Therefore, there is no multicollinearity among the explanatory variables included in the audit quality model because, all explanatory variables show a VIF coefficient ranges from 1: 2 it was less than 10.

Table (3) illustrates also the statistic of Durbin-Watson test that is used to test the presence of autocorrelation in the residuals. The Durbin-Watson statistic ranges between 0 and 4. A statistic value near to 2 reflects that there is no autocorrelation detected in the sample. A value approaching zero reflects positive autocorrelation, while values toward 4 indicate negative autocorrelation. Table (8) shows that the value of Durbin-Watson is (1.926) which is close to 2, indicating that there is no serial correlation in the residuals of the model. Therefore, the null hypothesis is accepted which states that the residuals from the regression are not auto correlated.

Table 3 shows the findings of the Multiple regression analysis to examine the association between financial constraints and audit fees. **From above table (table 8)**, the value of calculated F was 200.920 at a significant level 0.000 less than the approved level of significant 0.05 which indicated that the model was deemed fit and statistically significant. This value suggested that the audit fees (AF) model was statistically valid, was suitable for interpreting the relationship between dependent variable (Audit Fees) and independent variables (Financial Constraints) and Control Variables (Firm size, profitability, Financial Leverage, and firm loss).

And Adjusted  $R^2$  (68.3%) was used to measure the ability of independent variables to interpret the dependent variable, which indicated that the variations in the independent variables explain almost 68.3% of the variation in the dependent variable (Audit Fees).

The results in table (8) indicate a positive significant relationship between financial constraints and Audit Fees, where ( $\beta$ ) value of the financial constraints is positive and equals to 0.525, the value of ( $t$ ) = 8.887 at a significance level (**Sig**) = 0.000 less than the approved level of significance 5%. This result means that financial constraints have a positive and significant impact on Audit Fees of the study sample. Consequently, these results support the study's Second research hypothesis (H2), we can accept the Second hypothesis (H2) suggesting a significant positive association between financial constraints and Audit Fees.

The present finding is consistent with previous studies suggesting that audit fees increase with higher financial constraints (Benjamin, 2019; Khodadadi et al., 2019; Shagerdi et al., 2020; Simanullang and Tresna, 2021;).

**10. Research results :**At the end of the research, the researcher concluded the following results:

- financial constraints are constraints or challenges to the company because they limit the company's ability to obtain sufficient liquidity to exploit investment opportunities. And companies can be classified as financially constrained or financially unconstrained based on investment flexibility in response to changes in corporate cash flow as financially constrained companies must have greater difficulty in obtaining external financing. Financial constraints also indicate that the costs of external funding sources are higher than those of internal funding owing to asymmetries in information and agencies' problems.
- audit fees are the value of what the auditor receives from the audit client as a result of the contractual relationship between the accounting firm, auditing firm and the audit client in exchange for the time and effort expended in carrying out the audit process, as required by auditing standards and ethical principles of the auditing vocation.
- There is a positive significant relationship between financial constraints and audit fees.

### **11. Recommendations:**

Relying on study findings, and in light of research objectives, the researcher recommends the following:

- The researcher recommends the need to find scientific methods to be used to determine audit fees that are consistent with the effort expended when conducting the audit process, instead of making the process of determining audit fees a matter of judgment that varies from one company to another.
- It is necessary for professional and regulatory bodies to issue financing programs and establish special funds to assist financially constrained companies, whether with financial assistance or by providing guidance to emerge from this crisis, to limit these companies' resort to means that threaten the efficiency of the capital market.
- Researchers to be aware of the importance of conducting further accounting studies and research on financial constraints and its effects on the Egyptian business environment.

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## الملخص

يتمثل الهدف الرئيسي من هذا البحث في دراسة العلاقة بين القيود المالية وأتعاب المراجعة.

وقد اشتملت عينة الدراسة على 93 شركة غير مالية مدرجة بالبورصة المصرية خلال الفترة من 2018 إلى 2022. وقد بلغ العدد الإجمالي للمشاهدات 465 مشاهدة.

وقد خلصت نتائج البحث إلى وجود علاقة إيجابية معنوية بين القيود المالية وأتعاب المراجعة.

ويوصي الباحث بضرورة إيجاد طرق علمية يتم اللجوء إليها لتحديد أتعاب المراجعة تتفق مع الجهد المبذول عند القيام بعملية المراجعة، بدلا من جعل عملية تحديد أتعاب المراجعة بمثابة امر اجتهادي يختلف من شركة لأخرى. ضرورة قيام الجهات المهنية والتنظيمية بإصدار برامج تمويل وإنشاء صناديق خاصة لمساعدة الشركات المقيدة مالياً سواء بالمساعدة المالية او بتقديم الإرشادات للخروج من هذه الأزمة للحد من لجوء تلك الشركات إلى وسائل تهدد كفاءة سوق رأس المال. بالإضافة إلى ذلك، يجب على الباحثين أن يكونوا على دراية بأهمية إجراء المزيد من الدراسات والبحوث المحاسبية حول القيود المالية وأثرها على بيئة الأعمال المصرية.

**الكلمات المفتاحية:** القيود المالية – أتعاب المراجعة – الشركات المصرية المدرجة