The joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange

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A forward-looking vision for accounting and auditing regarding exchange rate changes in light of currency liberalization - financial factors and effects - the most important radical solutions

Abstract:

Financial reports are considered a tool to deliver accounting information to different parties, and to fulfill this information quality, financial reports should reflect the changes in the business environment, especially the macroeconomics one. So the objective of this research is to study and test the joint effect of the inflation rate and floatation of the exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange (EGX). Based on a sample of 600 firm-year observations during the period from 2016 to 2021. The researchers found empirical evidence that the joint effect of the inflation rate and floatation of the exchange rate has a negative but insignificant effect on the accounting reporting complexity. Concerning the control variables, we found that both (firm size and firm age) have a significant effect on the accounting reporting complexity, in addition to the insignificant effect of financial leverage on the accounting reporting complexity. In accordance with the empirical evidence of other analyses, the inflation rate has a significant effect on the accounting reporting complexity compared with the flotation of the exchange rate. Also, we found evidence that the degree of the accounting reporting complexity differs by the difference of the industry sector.

Keywords: The inflation rate, The flotation of the exchange rate, Accounting reporting complexity,

1. Introduction

Firms' financial reports are an effective mean and source empowering the current and prospective investors and creditors and other stakeholders in taken rational economic decisions, by providing them with accurate information, characterized by certain features in order to be useful to its users. These characteristics, either the fundamental qualitative characteristics or the enhancing ones, are affected by the trendiest variables in the Egyptian's business environment presented in; the inflation rate, the flotation of the exchange rate, and the accounting reporting complexity (Shamsadini et al., 2022; Badawy & Zaki, 2023; Khalil et al., 2024).

Inflation rate and flotation of the exchange rate are a serious concern and inescapable in the economic environment of many countries, such as the Egyptian ones, which may create a gap between the information produced, recorded, and reported in firm's financial reports compared to their real economic performance, which in turn leading to misled economic decision-makers (Zamel et al., 2020; Kramarova, 2021; Shamsadini et al., 2022).

Another concerning issue to firms is accounting reporting complexity, which is inherent to many factors related to the firm's business environment, could be separated into factors related to the firms' operational characteristics such as firm size, industry sectors, firm age, financial leverage, and the nature and structure of ownership. In addition to the factors related to the regulation and legislation of the firm's environment such as the difficulty in understanding and applying inherently the standards and principles (sec, 2008; ACCA, 2020; Khalil, 2023b).

Following the discussion above, the inflation rate and the flotation of the exchange rate affect the information quality, in the way they affect its characteristics, in the same effect of the accounting reporting complexity on this information quality, so we expected that both macroeconomic variables (INF & FLO) may increase the negative effect of complexity on the accounting reporting.

So our research problem focused on how to answer the following questions practically; does the joint effect of the inflation rate and floatation of exchange rate affect the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange? Do the firm's operational characteristics (firm size, firm age, and financial leverage) affect, as control variables, on the accounting reporting complexity of these firms in the context of the influential relationship under study?

Therefore, this research aims to study and investigate the relationship between the joint effect of the inflation rate and floatation of exchange rate and the accounting reporting complexity, as well as studying and testing the effect of some firm's operation characteristics (firm size, firm age, and financial leverage) on the accounting reporting complexity of these firms in the context of the influential relationship under study, applied on a sample of non- financial firms listed on the Egyptian Stock Exchange during the period (2016-2021).

This research stems its importance from verified through alignment with foreign literature that discussed the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity, to narrow the gap in the Arabic academic researches, especially the Egyptian one, in this subject. More importantly, the developed index to measure the accounting reporting complexity addresses the multidimensional aspects of complexity, and focuses on the macroeconomic variables (inflation and floatation), as they consider inherent in the business environment and Its influence cannot be isolated.

The limitation of this research is obvious in restricting the research sample to only listed companies excluding both; companies that are not listed on the Egyptian Stock Exchange, in addition to financial institutions, whether they are listed or not listed on the Egyptian Stock Exchange. Also some other determinants of the firm's operational characteristics (such as; year, loss, and profitability) are outside the scope of the research. Finally, the generalization of the research results is conditioned by the controls used in selecting its' sample and the methodology used to test its hypotheses.

The remainder of this research is organized as follows: at first, a section (2) analyzes prior literature related to the inflation rate and floatation of exchange rate, the accounting reporting complexity, then the relationship between the joint effect of the inflation rate and floatation of exchange rate and the accounting reporting complexity, and forming the research hypothesis, then section (3) discusses the research methodology and design, and contentious with section (4) presents the empirical results, finally section (5) provides a discussion and conclusion of the results.

2. Literature review and hypotheses development
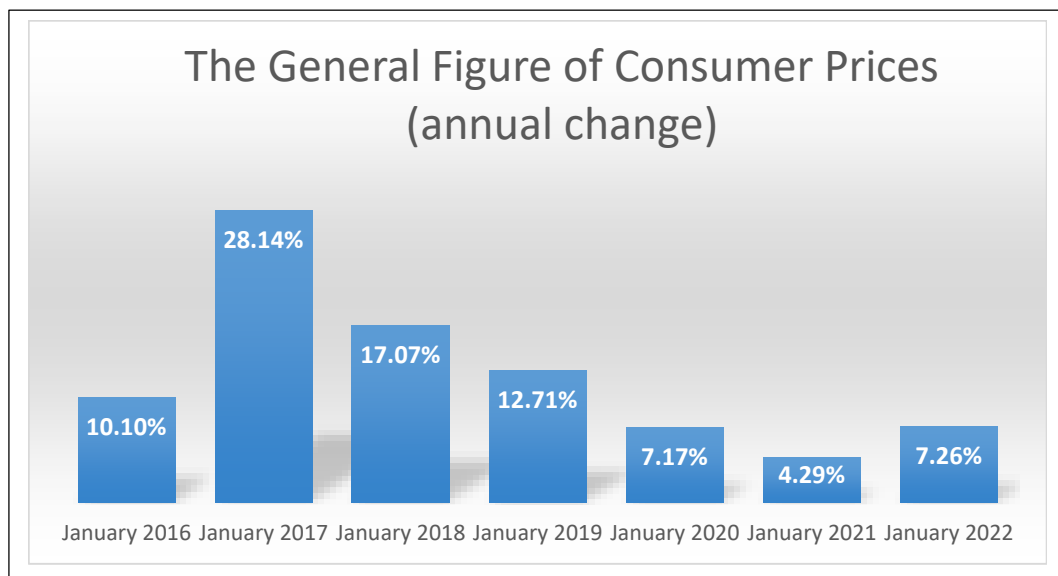## 2.1 The joint effect of the inflation and the flotation of the exchange rate

Inflation and flotation are the most macroeconomic phenomena and may affect the accurate recognition, measurement, presentation, and disclosure of financial information, which may in turn increase the accounting reporting complexity, direct or indirect according to the firm's industry, and so the management should evaluate the implications of both inflation and flotation on the reliable of these reports (Kramarova, 2021; Shamsadini et al., 2022; EY, 2023; Khalil et al., 2024).

Starting with inflation rate, according to (Zamel et al, 2020; Helaly, 2022; CBE, 2023) we aptly defined the inflation rate as "**the general increase in the price level of goods and services and the erosion and decline in purchasing power**". **Reserve Bank of Australia** divided inflation into three categories[1]; demand-pull inflation, cost-push inflation, and inflation expectation (built-in inflation).

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[1] **demand – pull inflation** refers to the overall demand for goods and services to increase more rapidly than the economy's production capacity, as well as, **the cost- push inflation** occurs when the total supply of goods and services (aggregate supply) falls. A fall in aggregate supply is often caused by an increase in the cost of production. And **the inflation expectation (built-in inflation)** are the beliefs that firms have about future price increases. They are important because expectations about future price increases can affect their current economic decisions and their decision about hedging against inflation risks.

Since 60ths the challenges and concerns of the rising and volatile inflation rate caused many distortions in financial statements (Wali et al., 2024). In response to these concerns, the Financial Accounting Standard Board (FASB) announced in September 1979 a supplemental disclosure about the effect of the inflation rate on the financial statements. After that, the International Accounting Standards Committee issued in July 1989, an International Accounting Standard (IAS No. 29) "**Financial Reporting in Hyperinflation Economics**". This standard applies to any firm whose functional currency is the currency of a hyperinflationary economy.

From an economic view, the increase of money supply and demand- pull inflation caused a serious issues in economic environment called hyperinflation which refers to the contentious increasing of products and services prices in the national economy raises faster than 50% monthly, eventually 1000% yearly that quickly erode the real value of national currency (Karmarova, 2021; CBE, 2023). Despite the Egyptian environment consider as an inflationary environment but not hyperinflationary, the illustrated in the following graph:

The General Figure of Consumer Prices (annual change)

10.10%	28.14%	17.07%	12.71%	7.17%	4.29%	7.26%
January 2016	January 2017	January 2018	January 2019	January 2020	January 2021	January 2022

Source: the Central Bank of Egypt

Contentious with the flotation of the exchange rate, the exchange rate is the price of nation's currency against other currencies, and consider as the most macroeconomic factors that achieve competitive advantage of that nation's economic (Elshahawany, 2022). According to Badawy & Zaki (2023) the flotation of the exchange rate is defined as "**the value of the Egyptian**

pound against foreign currencies in accordance with the power of supply and demand through a flexible framework of the exchange rate system, giving priority to the Central Bank's primary goal of achieving price stability".

The Central Bank of Egypt (CBE) made a public announcement in November 2016 to float the exchange rate of the Egyptian pound to meet the International Monetary Fund (IMF) requirements. According to this decision, the Egyptian pound's exchange rate will float freely, and its value will be determined following the power of supply and demand. As a result of that the Egyptian pound lost about 50% of its power against the US dollar.

In response to the firms' concerns about the effect of the flotation of the exchange rate on the financial statements, in February 2017 an appendix to the Egyptian Accounting Standard No. 13 "**Effects of Changes in Foreign Currency Rates**" was issued to give these firms a guide to understanding the effect of this decision on their financial statements and the proper accounting treatment to recognize the difference of foreign currencies, in the other comprehensive income, as result of translate their assets and liabilities valued in foreign currency in the flotation of the exchange rate date (Badawy & Zaki, 2023).

In addition to the effect of this floating differs with whether the firm is importing or exporting goods, and whether it had assets valued in foreign currencies (Badawy & Zaki, 2023). Also, El Rashidy & El Sayed (2017) refer that the most affected sector in Egypt according to this decision were the food and cement industries, petrochemicals and real estate sectors.

Regarding to the flotation of the Egyptian pound's exchange rate decisions, the Central Bank of Egypt (CBE) taken four decisions in this regard which in follow; in March and October 2022, in January 2023, and in March 2024 to meet the International Monetary Fund (IMF) requirements, which appear in the following graph as well:

Exchange Rates from 2016 to 2024
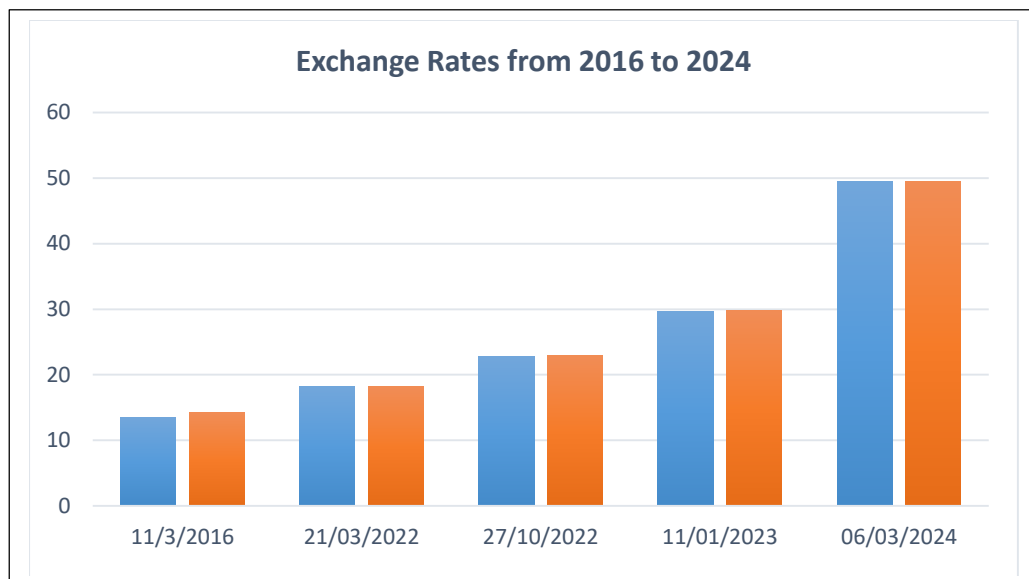
Source: the Central Bank of Egypt

From all above, we believe that both the inflation rate and the flotation of the exchange rate have an important effect on the elements of the financial statement and the real situation of the firms' performance as they consider as an important macroeconomic variables effect on the many determinates in different firms such as, stock price, firm value, financial health, firms' reputation, its going concern, which makes us to concern about study the joint effect of the inflation rate and the flotation of the exchange rate as they consider one of the most important variable in our business environment, especially after the flotation moves that Center Bank of Egypt (CBE) has taken in recent years, in addition to the Egyptian business environment is considered as an inflationary environment.

2.2 Accounting reporting complexity

Annual accounting reporting is the best way to convey information about a firm's performance and situation in the market to different stakeholders to make their decisions related to this firm, to rely on this information the accounting reports must characterized by their quality, and the most effective element on this quality is the accounting reporting complexity which inherent in applying accounting principles, accounting policies, and accounting standards (Sec, 2008; Cohen, 2020; Khalil, 2023b).

From that point of view, Khalil (2023b) defined accounting reporting complexity as **"the inherent difficulty in applying generally accepted**

accounting principles (GAAP), choosing and applying accounting policies concerning the description, measurement, presentation, and disclosure, as well as designing and operating the accounting information system that produces information that meets its qualitative characteristics and is useful to its users".

According to accounting reporting complexity determinants, prior research (ACCA, 2020; Lai et al., 2020; Amr, 2022; Badawy & Zaki, 2023; Khalil, 2023b; Khalil et al., 2024) have agreed that these determinants selected by the firms' industries and the type of their clients which reflect on their transaction and therefore its accounting reporting complexity. The most important determinants are; foreign transactions, inflation rate, flotation of the exchange rate, segments, multi-products, hedging, derivatives, financial lease, special purpose entities (SPE), merger and acquisition (M& A), restatement, and sales growth rate.

Regarding the measurement of the accounting reporting complexity, most of the prior research (Soodanian et al., 2013; Lawrence et al., 2016; Lo et al., 2017; Bentley et al., 2017; Lawrence et al., 2018; Silva et al., 2019; Cohen, 2020; Lai et al., 2020) depending on one or more of that complexity drivers such as; foreign transactions, financial lease, special purpose entities (SPE), segments, and merger and acquisition (M& A) either individually or aggregated through an index in terms of these drivers. On the other hand, the other prior (Francis & Gunn, 2015; Loughran & McDonald, 2019; Khalil, 2023b; Khalil et al., 2024) researches depending on index present the complexity of firms' transactions and some of their financial statements elements, in addition to the complexity of their industries. Others (Loughran& McDonald, 2014; Efretuei& Hussainey, 2022) have measured accounting reporting complexity according to the financial reporting readability using the FOG index.

From all above, accounting reporting complexity is an inherent issue related to many aspects such as accounting principles, accounting policies, accounting standards, firms industries, and business environment including macroeconomic variables, which may affect, directly or indirectly, firms' transaction and therefore its financial statement element and increasing their complexity, which increase the complexity of their accounting reports, and decrease their readability and transparency, in addition to increasing the probability of the material misstatements in these reports which in turn decrease the stakeholders' reliability on these reports to make their decisions.

2.3 The joint effect of the inflation rate and the flotation of the exchange rate and the accounting reporting complexity

Accounting is considered a social science, affected by the changes that occur in the business environment, so changes in the inflation rate and the flotation of the exchange rate, related to this environment, have an essential effect on some financial reporting elements such as assets and their depreciation, impairments, financial estimates, taxes, foreign transactions, financial lease, derivatives and its fair value, and all of that considered as an accounting reporting complexity's drivers and reasons, which may increase the negative impact of complexity on the financial reporting (Kramarova, 2021; EY, 2023; Khalil, 2023b; Khalil et al., 2024).

Accounting reports are useful when they are characterized by relevance, faithful representation, accuracy, transparency, understandability, and comparability, thus, the gap between the historical cost and current cost, because of the decreasing purchasing power of the monetary unit, shows the problem of historical cost to evaluate the real performance of firms, which in turn decrease the accounting information ability to achieving its quality characteristics, and the reliability of different stakeholder on. On the same page, the changes of both inflation and flotation may lead to complex financial analysis methods which in turn lead to accounting reporting complexity (Solikhah et al., 2020; Shamsadini et al., 2022; Badawy & Zaki, 2023; Binz et al., 2023; Khalil et al., 2024; Wali et al., 2024).

On the one hand, some prior research (Solikhah et al., 2020; Shamsadini et al., 2022; Badawy & Zaki, 2023; Binz et al., 2023; Wali et al., 2024) both variables the inflation rate and the floatation of the exchange rate affect the transparency, accuracy, and value relevance of accounting information which in turn decrease its quality. **On the other hand,** other prior research (Loughran & McDonald, 2019; Bimo et al., 2019; Cohen, 2020; Hoitash et al., 2021; Amr, 2022; Khalil, 2023b) aptly that the accounting reporting complexity decreases the readability of accounting reports also decreasing its transparency, in addition to the increasing level of information asymmetry which in turn decrease its quality.

So the researchers concluded that the inflation and flotation of the exchange rate affect the financial report elements and their accounting treatment which in turn affects the accounting reporting requirements related to recognition, measurement, presentation, and disclosure that eventually effect on the accounting complexity of these reports. As a result of the limited

research that studied and tested the direct effect of the inflation and flotation of the exchange rate on the accounting reporting complexity on the one hand, and our belief in the probability of the relationship between the joint effect of the inflation rate and the flotation of the exchange rate and the accounting reporting complexity on the other hand, in addition to our believe that both inflation and flotation effect and/or affected to each other. Thus, the researchers focused on studying and testing the relationship between the joint effect of the inflation rate and the flotation of the exchange rate and the accounting reporting complexity in the Egyptian business environment. **The research hypothesis is derived as follows:**

H_1: There is a significant joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange.

3. Research Design and Methodology

3.1 Population and sample of the study

The study population consists of non-financial companies listed on the Egyptian Stock Exchange during the period from 2016 to 2021[2]. The research focused on a judgmental sample from this population, where financial companies were excluded from the scope of the study due to the different nature of their activities and the rules governing this activity differs from those of non-financial companies, as well as companies not listed on the Stock Exchange, in addition to companies listed on the stock Exchange but prepare their financial statements in a foreign currency (Abozaid et al., 2020; Khalil et al, 2024). The final sample consisted of 600 firm-year observations.

3.2 Research design and measurements

The research design present our view and study hypothesis, as follows:

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[2] The study period was determined from 2016 to 2021 for more than one reason, the most important of which is; After the adoption of the International Financial Reporting Standards in Egyptian in 2015, some of which focus on the problems of accounting for hedging operations, fair value, comprehensive income and its components, and other areas that require personal judgment on the part of the financial accountant, especially regarding complex accounting reports.

Panel (1)
Source: researchers design
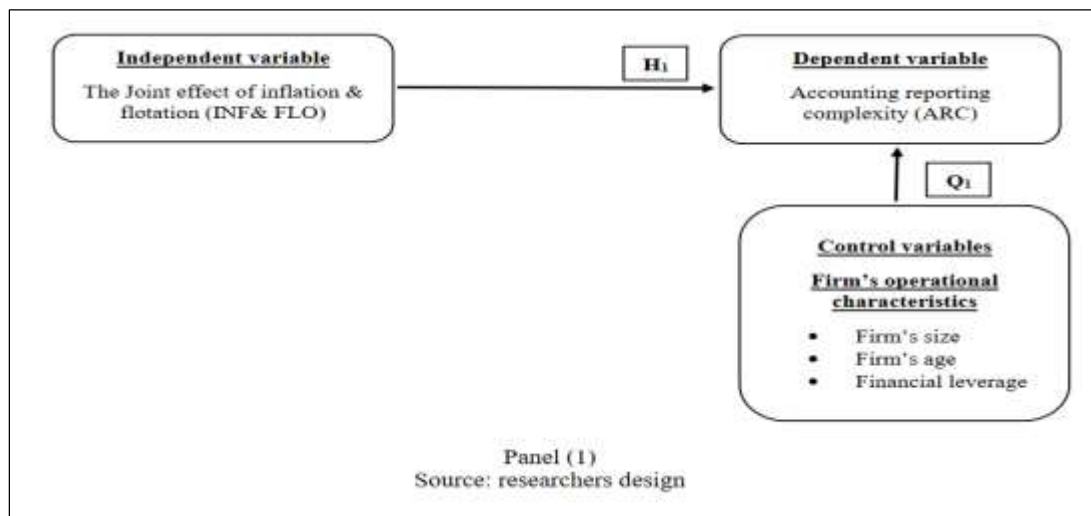
Table 1: definition and measurement of research variables:

variable	Measurement
Independent variable: The joint effect of inflation and floatation rate (INF& FLO).	Where; inflation rate is measured as Dummy variable that is equal to one if the inflation rate of the observation is more than the average of sample observations, otherwise it is equal to zero. And; the floatation rate is measured as Dummy variable equal to one if the observation year is 2017 otherwise it is equal to zero (according to the CBE decision to float the exchange rate of the Egyptian pound)
Dependent variable: Accounting reporting complexity (ARC)	Measured by an index content of (8) of the most complex elements related to fair value in financial reports (ACCA, 2020; Khalil, 2023b).
control variables: firm's operational characteristics[3]**:**	

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[3] Contentious the effect of a firm's operational characteristics on the accounting reporting complexity, We studied and tested some of them in accordance with some previous studies (Francis & Gunn, 2015; Shu et al., 2018; Silva et al., 2019; Khalil, 2023b) which discussed this relation as that characteristics are one of many drivers which may increase or decrease, directly or indirectly, the accounting reporting complexity. So we focused on some of these drivers such as; firm size, firm age, and financial leverage. which in our consideration are the most important and effective in that complexity. according to firm size, the prior research on this view =(Smith et al., 2018; Rostami et al., 2019; Silva et al., 2019; Lotfy et al., 2021; Khalil, 2023b) concluded that the big (small) firms tend to be more complex (less complex), due to the diversity of their products and assets, increasing of market share, and the accounting complexity of their transaction, as result of their encompass tangible, human, and technological resources, which lead to more accounting reporting complexity. Contentious that, the degree of a firm's accounting reporting complexity is inherent to the period that the firm exists in the industry, which reflects The sum of experience and knowledge of its management in choosing and applying alternative accounting policies, which in turn decreases the accounting reporting complexity (Smith et al., 2018; Silva et al., 2019; Khalil et al., 2024). Moving to financial health represented in (leverage), historical research (Francis & Gunn, 2015; Silva et al., 2019; Khalil, 2023b) aptly that firms characterized as complex firms tend to have high financial leverage, compared to their less complex counterpart.

Firm size (Fsize)	The natural logarithm of the firm's total assets (Amr, 2022).
Firm age (Age)	The natural logarithm of the number of years observed since the audit client's firm was registered on the stock exchange until the year of testing (Khalil, 2023a).
Leverage (LEV)	Total liabilities divided by total assets (Bae et al., 2021; Khalil, 2023a).
Other analysis:	
Industry sector (SEC)	Dummy variable equal to one if audit client's firm belongs to specific sector, otherwise it is equal to zero (Talkhan, 2017; Zaki, 2018).

3.3 Research model

Multiple linear regression analysis are used to test our relationship and hypothesis, the research model as follows:

$$ARC= \beta_0 + \beta_1 \, INF* \, FLO + \beta_2 \, Fsize + \beta_3 \, Age + \beta_4 \, LEV + £_{it} \quad (1)$$

Where; ARC, INF, FLO, Fsize, Age, LEV, SEC as descripted in the previous table, INF* FLO, is the interactive variable of the joint effect of inflation and floatation rate, £= error term, $_{it=}$ for firm (i) in year (t).

4. Empirical findings

4.1 descriptive statistics of data

According to our descriptive statistics and correlation coefficients data from tables (2, 3). Regarding to the dependent variable the accounting reporting complexity (ARC), we found that the minimum and maximum values of this variable are fluctuate between (.13- 1.00), and we found that the mean value (.6667) of it is higher than its standard deviation (.15786), which statistically means (ARC) is free of any abnormal values.

Contentious with the independent variable the joint effect of inflation and floatation rate (INF* FLO), depending on the same data in tables (2, 3), it's clear that the minimum and maximum values of it are fluctuate between (.00- 1.00), as well the mean value of it (.1683) is lower than its standard deviation (.37447) which statistically means that (INF* FLO) contains abnormal values, but the researchers believe that variable doesn't contain any of these values due to being measured as a dummy variable equal to one or zero[4]. And by analyzing the correlation coefficient we found that there is a negative and insignificant association between (INF* FLO) and (ARC) at the value (-.024).

In the light of control variables, the firm's operational characteristics, we found that the minimum and maximum values of the variable (FSize)

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[4] The interactive variable (INF*FLO) is measured by the product of the inflation rate variable (INF) and the flotation rate variable (FLO). Since these variables are measured as dummy variables, they take values (1), (0), which affects the value of the interactive variable (INF* FLO), which ranges between two values (1, 0), as a result of being affected by both measurements.

fluctuate between (6.05- 10.80), (Age) (-.60 1.61), and (LEV) (.00- 9.39). Contentious the statistics results, we found that the mean values of the both (FSize, and Age) (8.8185- 1.1948) are higher than their standard deviation (.76675- .30702), which means that these two variables don't contain any abnormal values, and by analyses the person coefficients of these two variables, we found that there is positive and significant association between (FSize) and (ARC), as well the negative and significant association between (Age) and (ARC) at the values (.294- -.190), respectively. On the contrary, we found that the mean value of the variable (LEV) (.4876) is lower than its standard deviation (.68257), which statistically means that (LEV) probability contains abnormal values, which was reflected in the insignificant of its correlation coefficient with (ARC), as we found that there is negative but insignificant association between (LEV) and (ARC) at the value (-.067).

Table2: Descriptive Statistics

	Mean	Min	Max	SD	N
ARC	.6667	.13	1.00	.15786	600
INF*FLO	.1683	.00	1.00	.37447	600
Fsize	8.8185	6.05	10.80	.76675	600
Age	1.1948	-.60	1.61	.30702	600
LEV	.4876	.00	9.39	.68257	600

Table 3: Person Correlation

	ARC	INF* FLO	Fsize	Age	LEV
ARC	1.00				
INF* FLO	-.024	1.00			
Fsize	.294**	-.007	1.00		
Age	-.190**	-.073	-.037	1.00	
LEV	-.067	-.006	-.078	.109	1.00

** = significant at the 0.01 level.

4.2 Hypotheses testing:

In this section we review our results of hypothesis testing in fundamental analysis as follow:

Table 4: multiple regression results

	Model 1			
variables	B	T	Sig	VIF
Constant	.268	3.548	.00	-
INF* FLO	-.015	.905	.366	1.005
FSize	.059	7.366	.00	1.007
Age	-.093	4.664	.00	1.011

LEV	-.008	.853	.394	1.010
R^2	.121			
Adjusted R^2	.115			
F	20.440			
Sig(F)	.00			

We used the multiple regression, as we presented on table (4) above, to test our hypothesis, **(H₁): there is a significant joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange**. According to our results in table (4), we inducted the significance of the research model to test this relationship, as the result of the calculated value of the (F) (20.440) statistic increased of its tabular one (3.84). In addition to the explanatory power of the adjustment R^2 model was (.115), which means that the independent variable explains (.115) of the dependent variable. In addition to the decreasing of (VIF) values of these variables lower than (10), which indicates that there is no multicollinearity problem between variables. And by analyzing the regression coefficient, **we found that there is a negative but insignificant effect of the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity by (-.015), at the probability value of (.366).**

Our explanation of **the negative effect of the joint effect of inflation and flotation** is that we believe in the logical negative effect of both variables on the accounts of accounting reports related to foreign exchange transactions, fair value, and derivatives, and then increasing the degree of their complexity, and we also believe in the logical insignificant effect of the joint effect of (INF*FLO) on (ARC), as our sample including the effect of the floating exchange of one year (in 2017) financial reports, and the joint effect represents the interactive relationship between (INF) and (FLO), and due to the decrease on the years are observed as a floated currency year, it is limited just in 2017. Which makes the floatation power on the accounting reporting complexity more than the inflation power on that complexity, so we can say that the insignificant effect comes from the insignificant effect of the flotation itself.

Regarding to control variables, we found that **there is a positive and significant effect of the (FSize) on the accounting reporting complexity (ARC)** by (.059) at the probability value of (.00), contentious with (Age), we found that **there is a negative and significant effect of it on the (ARC)** by (-.093) at the probability value of (.00), on the contrary, we found that **there is a negative and insignificant effect of the (LEV) on the (ARC)** by (-.008) at the

probability value of (.394).

According to these results and beginning with **firm size**, the positive effect of the firm size is a reflection of the power of the economies of scale to reduce the negative effects of complexity, despite the complexity degree of the big firms as a result of their desire to have more market share in multiple industries which is a reflection of their multiple products and operations, in addition to the merger and acquisitions activities and restructure, but the huge human, physical and technical sources of these firms help them to reduce the negative force of that complexity.

And about the **firm age**, we believe that the negative and significant effect of firm age on the accounting reporting complexity is logical, as we believe that the older firms have a knowledge base of experience and expertise, in addition to a well understanding of changes and risks of its business environment, which make them gain enough experience in how apply the Egyptian Accounting Standards, and choosing between the alternative accounting policies and applying them, which in turn reduce the possibility of errors in accounting reports of this firms ending with that reducing the complexity of these reports too, that what our observations reflected the increasing of the percentage of older firms represent 67% of total sample observations against the decrease of the percentage of the complex firms 48.5% of total sample observations.

Finally, regarding **the insignificant effect of the (LEV) on the (ARC)**, we believe in the illogical of this result, despite our belief that the negative effect is logical, due to the high percentage of firm leverage being a mirror to its financialhealth, reflecting the shortage in its financial resource, and its ability to pay its obligations as well, which refer to down full of its financial structure, and it's depending on outsources finance to contentious its operations, thus complicating its financial structure and rising the complexity in accounting reporting. And about the insignificant effect of (LEV) on (ARC) we thought that depends on the decrease in the percentage of the firms' observations that are characterized by high leverage (39.3%) of total sample observations.

5. Other analyses:

Our other analyses contain three phases to retest the relationship under the study in the fundamental analysis, to compare our results in the fundamental analysis with those we got in the other one, to add more clarity and understanding to the relationship under the study, as well as, to verify the strength and the solidity results in the fundamental analysis, And to review the

impact of different assumptions that we adopted in it (Amr, 2022; Khalil et al., 2024). To address that, **in the first phase**, we investigated the effect of the inflation rate on the accounting reporting complexity once, and then **in the second phase**, we studied the effect of the flotation rate on the accounting reporting complexity, finally, **in the third phase,** we studied the effect of the industry sector on the accounting reporting complexity in light of the relationship between the joint effect of the inflation rate and floatation of exchange rate and this complexity (Khalil et al., 2024), as follows:

5.1 Testing the effect of the inflation rate and floatation of exchange rate, individually, on the accounting reporting complexity (phases 1and2):

To evaluate which of these two variables (floatation and inflation), has more effect on the accounting reporting complexity, as they are considered as the most macroeconomic effective variables on the accounting reporting complexity, especially, in the Egyptian business environment, as a result of the speed changes on its economic environment, so we restudied and retested the effect of the inflation rate on the accounting reporting complexity, once, as we restudied and retested the effect of floatation of exchange rate on the accounting reporting complexity, again. According to that, the second and third hypotheses were derived as follows:

(H$_2$): There is a significant effect of the inflation rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange.

(H$_3$): there is a significant effect of the floatation of exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange.

To test these hypotheses, a multiple regressions were used as follows:

$$ARC= \beta_0 + \beta_1\, INF + \beta_2\, Fsize + \beta_3\, Age + \beta_4\, LEV + £_{it} \quad (2)$$
$$ARC= \beta_0 + \beta_1\, FLO + \beta_2\, Fsize + \beta_3\, Age + \beta_4\, LEV + £_{it} \quad (3)$$

Where; ARC, INF, FLO, Fsize, Age, LEV, as described in the previous table, £= error term, $_{it=}$ for firm (i) in year (t).

The following table discusses the comparison the results of fundamental and other analyses (condition 1):

Table 5: comparison between the results of fundamental and other analyses (condition 1 and2)

variables	Model 1				Model 2				Model 3			
	B	T	Sig	VIF	B	T	Sig	VIF	B	T	Sig	VIF
Constant	.268	3.548	.00	-	.293	3.854	.00	-	.269	3.560	.00	-
INF* FLO	-.015	.905	.366	1.005	-	-	-	-	-	-	-	-
INF	-	-	-	-	-.031	2.405	.016	1.036	-	-	-	-
FLO	-	-	-	-	-	-	-	-	-.016	1.000	.318	1.006
FSize	.059	7.366	.00	1.007	.058	7.272	.00	1.010	.058	7.360	.00	1.007
Age	-.093	4.664	.00	1.011	-.100	4.983	.00	1.038	-.093	4.673	.00	1.011
Lev	-.008	.853	.394	1.010	-.008	.918	.359	1.011	-.008	.855	.393	1.010
R^2	.121				.128				.121			
Adjusted R^2	.115				.122				.115			
F	20.440				21.850				20.492			
Sig(F)	.00				.00				.00			

From the result above, we concluded that the two additional models are significant at the values of the (F) statistic (21.850, and 20.492) respectively, which increased from their tabular value (3.84). As well as, the explanatory power of adjusted R2 was the same value (.115) in the model (2) compared to model (1), and increased from (.115) to (.122) compared to model (1), In addition to the decreasing of (VIF) values of these variables lower than (10), which indicates that there is no multicollinearity problem between variables.

According to model (2), **we found that there is a negative and significant effect of inflation rate on the accounting reporting complexity**, which disagrees with the result in the fundamental analysis as considering that the inflation rate is a part of that joint effect we tested previously, which was illogical for us, to be insignificant, but we believe that difference in results is due to the floatation rate observations. Based on that, we believe in the logically significant and negative effect of the inflation rate on the accounting reporting complexity, as it is considered one of the most important macroeconomic variables that has an essential effect on increasing that complexity. Depending on that, we accepted the alternative hypothesis **(H_2): There is a significant effect of the inflation rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange**, and rejected the null one.

On the same page and about the results of model (3), **we found that there is a negative and insignificant effect of the floatation of exchange rate on**

the accounting reporting complexity, which agrees with the result in the fundamental analysis considering that the floatation exchange rate is a part of that joint effect too, and we believe that the agreement in the results, insignificant effect of the joint effect of (INF& FLO) and flotation, due to the decrease on the years are observed as a floated currency year, it is limited just in 2017, what makes that insignificant effect of the floatation on the accounting reporting complexity logically, although believe in the logical negative effect of the flotation on that complexity, because that floatation is considered a phenomenon related to the most important drivers of the accounting reporting complexity such as; foreign transactions, derivatives, transactions at fair values and so increasing the negative effect of the complexity on firms reports.

Based on that, we rejected the alternative hypothesis **(H₃): There is a significant effect of the flotation of exchange rate on the accounting reporting complexity of non-financial firms listed on the Egyptian Stock Exchange**, and accepted the null one.

5.2 Testing the effect of the industry sector on the accounting reporting complexity, as control, variable, in the context of the relationship under the study:

Contentious our other analyses, we added the industry sector as another control variable, to assess the effect of that sector on the accounting reporting complexity, as considered in many prior studies (Francis & Gunn, 2015; Silva et al., 2019; Loughran& McDonald, 2019; Baik et al., 2020, Khalil, 2023b) as an important variable related to this complexity and affected it. According to these studies, many industries were classified as complex industries, starting with their operations and ending with the information resulting from those operations. Causing increasing in the information asymmetry, and decreases the readability and credibility of financial reporting as a result of their complexity (Francis & Gunn, 2015; Silva et al., 2019; Khalil et al., 2024).So, they concluded that, when the industry is classified as a complex one, its reports will be complex too. Based on that we focused on this variable, the industry sector, to ensure which of these sectors will more affect the accounting reporting complexity, besides the other control variables (FSize, Age, and LEV), in the context of the relationship between the joint effect of the inflation rate and floatation of exchange rate on that complexity of non-financial firms listed on the Egyptian Stock Exchange, and the question to verify this part is as follows:

Q₂: Do firm size, firm age, financial leverage, and sector of non-financial firms listed on the Egyptian Stock Exchange affect the accounting reporting complexity of these firms in the context of the influential relationship between the joint effect of the inflation rate and floatation of exchange rate and this complexity?

A multiple regression was used as follows:

$$ARC= \beta_0+ \beta_1 \, INF* \, FLO + \beta_2 \, Fsize+ \beta_3 \, Age + \beta_4 \, LEV+ \beta_5 \, SEC+ \pounds_{it} \qquad (4)$$

The following table discusses the comparison the results of fundamental and other analyses (condition 3):

Table 6: comparison between the results of fundamental and other analyses (condition 3)

variables	Model 1				Model 4			
	B	T	Sig	VIF	B	T	Sig	VIF
Constant	.268	3.548	.00	-	.290	3.448	.001	-
INF* FLO	-.015	.905	.366	1.005	-.014	.874	.383	1.006
FSize	.059	7.366	.00	1.007	.059	7.090	.00	1.137
Age	-.093	4.664	.00	1.011	-.079	3.992	.00	1.041
Lev	-.008	.853	.394	1.010	-.013	1.426	.154	1.034
Sec Industrial	-	-	-	-	-.066	3.415	.001	2.584
Sec Commerce	-	-	-	-	-.036	.992	.321	1.348
Sec Estates	-	-	-	-	-.051	2.425	.016	2.234
Sec Services	-	-	-	-	.016	.717	.473	2.263
R²	.121				.165			
Adjusted R²	.115				.154			
F	20.440				14.615			
Sig(F)	.00				.00			

From the result above in table (6), we found that the research model continues to be significant at the value of the (F) statistic (14.615), which increased from its tabular value (3.84). As well as, the explanatory power of adjusted R2 was increased from (.115) to (.154) compared to model (1) which indicates that adding another secondary variable (Sec industrial, Sec commerce, Sec estates, and Sec services) have an essential effect on the accounting reporting complexity in the context of the relationship under study by (.039). In addition to the decreasing of (VIF) values of these variables lower than (10), which indicates that there is no multicollinearity problem between variables.

Tracing the regression coefficient, **we found that there is a positive and significant effect of (FSize) on (ARC) by (.00) at a probability value at (.059), and the positive and insignificant effect of (Sec Services) on (ARC)**

by (.473) at a probability value at (.016). In addition to the negative and significant effect of (Age, Sec Industrial, and Sec Estates) on (ARC) by (.00, .001, and .016) respectively at a probability value at (-.079, -.066, and -.051), and the negative and insignificant effect of (LEV, Sec Commerce) on (ARC) by (-.013, - .036) respectively at the probability value of (.154, .321). According to these results we answered the (Q_2) with **"yes"** regarding to variables (FSize, Age, Sec Industrial, and Sec Estates) and **"no"** regarding to (LEV, Sec Commerce, and Sec Services).

we believe the logic of the significant effect of (Sec Industrial, and Sec Estates) on (ARC), due to the different nature and business environment for each sector as well as its transactions, which is reflected in the degree of its complexity (Fracncis & Gunn, 2015; Talkhan, 2017), as we found that the degree of each sector complexity as follows; Sec Industrial was (23%), and Sec Estates was (8.8%). On the same page, we believe the logic of the insignificant effect of (Sec Commerce, and Sec Services), because of the complexity degree of those two sectors, as Sec Commerce was (1%), and Sec Services was (7.8%), as well as a result of the decrease of the percentage of each sector compared with total sample observations were (3.8%, and 19.8%) respectively.

6. Discussion, Conclusion, limitation, and implications for future research:

This research focused on two of the most geo and macroeconomics variables the inflation rate and the flotation of exchange rate, and the accounting reporting complexity, as a response to the speed changes in the business environment, and its effect on the accounting reports of firms and its economic situation and continuity. Especially in light of successive events in these days. So the research studied and tested the relationships between these variables in the Egyptian business environment during the period (2016- 2021).

Regarding to the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity, we found a negative but insignificant effect of the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity, and that negative effect reflects as an increase on the accounting reporting complexity, as a result of the related link between these two variables (INF & FLO) and the most complex accounts in accounting reports. As we condoled that insignificant effect to the decrease of our observations included in our sample, as a floated currency year, as we referred previously.

Due to the importance of a firm's operational characteristics, we take into our consideration the effect of firm's operational characteristics (FSize,

Age, and LEV), as control variables, on the accounting reporting complexity, in the context of the influential relationship between the joint effect of the inflation rate and floatation of exchange rate and this complexity, and we found that the degree of influence of each variables on this complexity depends on its sample observations, which reflected on its significance or not, as we found a significant effect of (FSize, and Age), and insignificant effect of (LEV) on accounting reporting complexity (ARC).

Because we believe in the importance of other analyses we divided it into three essential phases, in the first phase, we studied the effect of the inflation rate on the accounting reporting complexity and found a negative and significant effect of the inflation rate on this complexity. Contentious to the second phase in other analyses, we studied the effect of the flotation rate on the accounting reporting complexity and found a negative and insignificant effect of the flotation rate on this complexity. Finally, in the third phase, we studied the effect of the industry sector on the accounting reporting complexity, as a control variable, in light of the relationship between the joint effect of the inflation rate and floatation of the exchange rate and this complexity. And found that the industry sector partly effects this complexity in accordance with the represented percentage of each sector in our sample observations.

Based on the research results, the researchers recommend the need to support Egyptian accounting standards with more detailed guidelines that clarify how to apply them, especially regarding standards that contain complex items in terms of recognition, measurement, presentation, and disclosure, as well as new standards related to information technology, which create a wide area of difference in understanding and application, and the necessity of registration and deletion rules limiting the ability of firms managers to choose between accounting alternatives, which creates a wide space for personal judgment on their part, which ultimately affects accounting complexity.

The research results are subject to several limitations, at first the research focused on the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity based on a sample of non-financial firms listed on the EGX during the period from 2016 to 2021, which including floating in one year (November 2016). Accordingly, it would be interesting if **future research** retested the essential relationship of the joint effect of the inflation rate and floatation of exchange rate on the accounting reporting complexity on a wide sample including more than one floated currency year, and according to the CBE decision to float the exchange rate of

the Egyptian pound it was in March 2022, October 2022, January 2023 and the last move was in March 2024.

On the other hand, **recommending the need** for academic accounting researches to investigate the effect of other factors related to accounting reporting complexity such as the readability of financial reporting, AI tools adoption, recognition, measurement, presentation, and disclosure. The macroeconomic risk management on firm value, stoke price, reputation. And giving more attention for the implications for future research of other risks related to cybersecurity, climate change, carbon emissions, greenhouse gases (GHG), Epidemiological conditions (Covid- 2019), and the other geo-political and geo-economics risks.

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