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Auditor's Effort Following the Implementation of 2015 Revised Egyptian Accounting Standards: An Evidence from the Nonfinancial Listed Firms on the Egyptian Stock Exchange

Abstract

Purpose – The current research intends to study and test the effect of applying the revised Egyptian Accounting Standards (EASs) issued in 2015 on the effort exerted by the auditor when auditing the annual historical financial statements.

Design/Methodology – An analytical study of related theories and studies was conducted to derive the main hypothesis of the research. This hypothesis was tested based on the data of a sample of 105 nonfinancial firms listed on the Egyptian Stock Exchange (EGX) based on a number of conditions and according to the available data during the period from 2013 to 2022, as the number of observations reached 315 observations for the period 2013–2015 before the actual application of the revised EASs in 2016, and 630 observations for the period 2017–2022 after the actual application of the revised standards, with a total number of 945 firm-year observations.

Findings – A random effect regression model is estimated to test the research hypothesis under the primary analysis, which led to the acceptance of the main hypothesis of the research that the application of the revised EASs issued in 2015, which are consistent with the International Financial Reporting

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Standards (IFRS), significantly affects the auditor's effort. It turned out that this effect is positive, as the results indicate an increase in audit fees, as a measure of the auditor's effort, after applying the 2015 revised EASs, in the presence of some control variables that would affect the audit fees. The strength of these results has also been ascertained, as the research has reached, through some other analyzes, results that are highly supportive of the results of the primary analysis.

Originality/value – To the extent of the researcher's knowledge, there is a relative lack of academic studies that dealt with the direct influence of applying the 2015 revised EASs on the effort exerted by the auditor when auditing the financial statements in the financial reporting environment in Egypt. The research concluded with several recommendations that may be of interest to auditors, users and preparers of financial statements, academics, standards setters, and regulators responsible for improving the financial reporting environment in emerging countries including Egypt.

Keywords: Revised Egyptian Accounting Standards; IFRS; Auditor Effort; Audit Fees.

جهد مراقب الحسابات بعد تطبيق معايير المحاسبة المصرية المُعدّلة لعام 2015: دليل من الشركات غير المالية المدرجة في البورصة المصرية

ملخص البحث

الهدف - يستهدف هذا البحث دراسة واختبار مدى تأثير تطبيق معايير المحاسبة المصرية الجديدة الصادرة عام 2015 على الجهد المبذول من قبل مراقب الحسابات عند مراجعة القوائم المالية التاريخية السنوية.

المنهجية - تم تحليل النظريات والدراسات ذات الصلة لاشتقاق الفرض الرئيسي للبحث. وقد تم اختبار هذا الفرض بالاعتماد على بيانات عينة من 105 شركة من الشركات غير المالية المقيدة ببورصة الأوراق المالية المصرية استناداً إلى عدد من الشروط ووفقاً لما هو متاح من بيانات خلال الفترة من عام 2013 إلى عام 2022، حيث بلغ عدد المشاهدات 315 مشاهدة سنوية عن الفترة 2013-2015 قبل التطبيق الفعلي في عام 2016 لمعايير المحاسبة المصرية المُعدّلة، و630 مشاهدة سنوية عن الفترة 2017-2022 بعد التطبيق الفعلي للمعايير المُعدّلة، بإجمالي عدد مشاهدات 945 مشاهدة سنوية.

النتائج - تم تقدير نموذج انحدار الأثر العشوائي لاختبار فرض البحث في ظل التحليل الأساسي ونتج عن ذلك قبول الفرض الرئيسي للبحث القائل بأن تطبيق معايير المحاسبة المصرية المُعدّلة الصادرة عام 2015، والتي تتفق مع معايير إعداد التقارير المالية الدولية، يؤثر معنوياً على جهد مراقب الحسابات المبذول. وقد اتضح أن هذا التأثير إيجابياً حيث تشير النتائج إلى زيادة أتعاب المراجعة، كقياس لجهد مراقب الحسابات، بعد تطبيق معايير المحاسبة المصرية المُعدّلة في ظل وجود بعض المتغيرات الرقابية التي من شأنها التأثير على أتعاب المراجعة. كما تم التأكد من مدى قوة هذه النتائج، حيث توصلت الدراسة من إجراء بعض التحليلات الأخرى إلى نتائج تدعم بدرجة كبيرة نتائج التحليل الأساسي.

المساهمة العلمية - في حدود علم الباحث، توجد ندرة نسبية في الدراسات الأكاديمية التي تناولت التأثير المباشر لتطبيق معايير المحاسبة المصرية المُعدّلة الصادرة عام 2015 على الجهد المبذول من قبل مراقب الحسابات عند مراجعة القوائم المالية في بيئة إعداد التقارير المالية في مصر. كما انتهت الدراسة بعدد من التوصيات التي قد تكون محل اهتمام كل من مراقبي الحسابات، ومستخدمي ومُعدي القوائم المالية، والأكاديميين، ووضعي المعايير والجهات الرقابية المسؤولة عن تحسين بيئة التقرير المالي في البلدان الناشئة، ومنها مصر.

الكلمات المفتاحية: معايير المحاسبة المصرية الجديدة، معايير إعداد التقارير المالية الدولية، جهد مراقب الحسابات، أتعاب المراجعة.

1. Introduction

In the realization process of audit quality, hard work is necessary for auditors to carry out a successful audit. That is, the audit effort exerted by auditors plays an important role in reducing agency problems, and information asymmetry, and increasing the quality of financial reports, as the audit is considered a tool of governance that can lead to an increase in information quality (Mali & Lim, 2021). Audit effort relates to the extent of procedures followed by the auditor in order to collect sufficient and appropriate evidence to discover material misstatements when auditing the firm's financial statements which would be reflected in the audit opinion (Xiao et al., 2020; Zhang & Shailer, 2021).

There are a number of factors affecting the audit effort which may pertain to the auditor, the auditee, or the professional environment. For example, auditor-related factors include industry specialization, auditor reputation, and skills; while auditee-related factors include the size, profitability, effectiveness of the audit committee, and accounting complexity (Che et al., 2018; Abdillah et al., 2019; Daemigah, 2020; Xue & O'Sullivan, 2023). Among items that can affect the accounting information quality and complexity, as auditee-related factors, is the implementation of the International Financial Reporting Standards (IFRS).

After the broad implementation of IFRS worldwide, numerous studies have been conducted into the impact of adopting IFRS on various areas at both firm and national levels. Improved comparability of financial statements across countries and industries, access to the international capital market, less capital costs, better market liquidity, and increased transparency are all advantages of reporting according to IFRS (e.g., Key & Kim, 2020; Mensah, 2021; Lunawat et al., 2023). However, it is not always the case, since there are negative effects including greater earnings management (e.g., Ahmed et al., 2013; Cameran et al., 2014; Ebaid, 2016), declined value relevance of intangibles (e.g., Cordazzo & Rossi, 2020), and increased cost of compliance (Deb et al., 2023).

Even though, for both firms that prepare financial statements in line with IFRS and auditors, adopting IFRS is expensive. That is, IFRS is distinguished by being principles-based and having more disclosures and fair-value measurements than local accounting standards leading to

increased audit work and procedures which, in turn, affects the charged audit fees. Because of implementing the more complicated accounting standards such as IFRS, auditors must deal with more complexities, investigate a larger variety of accounting alternatives and disclosures, and, in turn, exert more effort. Accordingly, IFRS implementation has been proven to offer a number of advantages, but also extra expenses in the form of higher audit fees (Nam, 2018; Azzali et al., 2021; Deb et al., 2023; Lunawat et al., 2023).

Concerning the Egyptian financial reporting environment, it offers a unique and interesting setting distinguishable from other international settings, in which to examine the relationship between audit fees and IFRS implementation. About adoption of IFRS in Egypt historically, it has adopted the International Accounting Standards (IAS) since 1997, with the issuance of Minister of Economy Resolution No. 503 of 1997 which obligated joint-stock firms and partnerships limited by shares to apply Egyptian Accounting Standards (EASs). In order to keep pace with the amendments to international standards, Minister of Economy Decree No. (345) of 2002 was issued to amend some provisions of Ministerial Resolution No. 503 of 1997, and then Minister of Investment Decree No. 243 of 2006 was issued regarding the issuance of 35 new EASs to replace the accounting standards in force at the time of issuance of this decree. Next, Egypt introduced 39 EASs in 2015 by Decree No. 110/2015 of the Minister of Investment released on July 9, 2015, replacing the 35 previously issued EAS that had been enacted in 2006 by Decree No. 243. These revised standards have to be implemented by firms whose fiscal year begins on or after January 1, 2016 (MOI, 2015). The later revised 2015 EASs agree with IFRS in many aspects. Recently, Ministerial Resolution No. 69/2019 and the Prime Minister's Decree No. 883/2023¹ have been introduced to amend some provisions of EASs issued by Minister of Investment Resolution No. 110 of 2015 (MOIIC, 2019).

To ensure that information contained in financial statements is stated in line with established standards, an audit of financial statements is conducted. For firms listed on the Egyptian Stock Exchange (EGX), the issuance of audited financial statements is a must. Their published financial

¹ Available at: <https://fra.gov.eg/>

statements must be audited by a neutral auditor, as such, auditors are expected to conduct professionally and adhere to any applicable laws or professional standards. Accordingly, publishing the financial statements to the public requires a monitoring mechanism such as the audit process which is a crucial part of properly adopting IFRS. Empirically, previous studies have dealt with three indicators for measuring audit effort; namely audit fees (e.g., Miah et al., 2020; Zhang & Shailer, 2021), the delay in issuing the auditor's report (e.g., Asante-Appiah, 2020; Xiao et al., 2020), and audit hours (e.g., Jung, 2016; Che et al., 2018; Mali & Lim, 2021). However, the empirical data remains debatable and inconclusive regarding the influence of the adoption of IFRS on the audit effort.

According to some research (De George et al., 2013; Musah et al., 2018; Raffournier & Schatt, 2018; Azzali et al., 2021), audit fees rose in the IFRS era. Whereas, in cases of new audit engagements, unspecialized auditors, or the late implementation of IFRS, it was found that there is a weak or insignificant correlation between audit fees and the implementation of IFRS, as these cases represent challenges to raising audit fees to reflect the anticipated audit work in audit market that is competitive (Miah et al., 2020; Kang et al., 2021; Tawiah, 2022; Kamarudin et al., 2022; Lunawat et al., 2023).

Fees for audits are related to the audit process's effort. Earlier research suggests that supply- and demand-side variables both influence audit fees (Mali & Lim, 2021; Yuan et al., 2023). Hence, the association between the implementation of IFRS and audit fees has been the subject of several empirical research providing mixed results. In the current research, this relation is to be tested in the financial reporting environment in Egypt. That is, the current research expands the literature to address the influence of the IFRS implementation on the audit effort, as reflected in audit fees, by testing the influence of applying the 2015 revised EASs, which agree with IFRS, on the auditor's effort. As a result, the **research question** "Does implementing the 2015 revised EASs among the nonfinancial firms listed on the EGX affect the auditor's effort?" represents the current **research problem** that is to be tested in the Egyptian context empirically.

Hence, the main **objective** of this research is to study and investigate the potential effect of implementing the 2015 revised EASs among the nonfinancial firms listed on the EGX affects the auditor's effort while controlling for some auditee's characteristics; namely, the financial results, current ratio, quick ratio, and cash flow from operating activities. To achieve this objective, the researcher used the audit fees as a measure of the auditor's effort, due to the availability of audit fees data, following some studies (e.g., Miah et al., 2020; Zhang & Shailer, 2021; Lunawat et al., 2023) among 105 firms from 8 sectors listed on the EGX from 2013 to 2022, resulting in 945 firm-year observations. Given that 2016 is the 2015 revised EASs' year of adoption, the sample size for the 2013–2015 pre-revised 2015 EASs is 315 firm-year observations, whereas the sample size for the 2017–2022 post-revised 2015 EASs is 630 firm-year observations. Additionally, the researcher conducted some other analyses that support the research findings from the main research model.

The **importance** of this research lies in the fact that it is directed to a vital field in the Egyptian environment which has an emerging capital market with policies and trends to support its role. The importance of the research stems from the substantial impact of the adoption of IFRS on the level of complexity of the financial statements resulting from the increase in disclosed information and the increase in the use of accounting estimates and the role of this impact on the effort of the auditor and the fees he obtains in the Egyptian stock market.

From the **academic** point of view, the importance of this research stems from its extension of previous studies in the field of implementing more complicated accounting standards such as IFRS and their impact on stakeholders. Despite the multiplicity of studies that dealt with the benefits of implementing IFRS, there is a relative lack of studies that dealt with its consequences for auditors, especially concerning the exerted audit effort. Therefore, this research represents an addition to accounting literature in general, and in Egypt in particular, by investigating the effect of applying the 2015 revised EASs, which agree with the IFRS, on the auditor's effort.

Additionally, this research derives its **practical importance** from its benefit to investors, standards setters, and other stakeholders in Egypt and other developing countries whose business environment is similar to the

Egyptian business environment, by analyzing the impact of adopting the revised EASs issued in 2015 on the auditor's effort exerted in the process of auditing the financial statements that are prepared in accordance with these standards. Thus, the importance of the research stems from the effect of this effort on the increase in the fees charged by the auditor, which, in turn, affects the cost of the agency and the contractual relationship among different stakeholders in the firm.

The rest of this research has been organized as follows. The development of IFRS and its Egyptian equivalent are discussed in **Section 2**. Based on pertinent theories and literature, **Section 3** derives the research hypothesis. The empirical study is described in **Section 4**, and its findings are provided and analyzed in **Section 5**. The outcomes of the additional other analyses are shown in **Section 6**. Lastly, **Section 7** brings the research to a conclusion.

2. The Development of IFRS and its Egyptian Equivalent

The proper application of accounting standards requires a high level of infrastructure for financial reporting, represented by the professional level of preparers and auditors of financial statements, which is usually lacking in developing countries, as most developing countries suffer from the deterioration of the financial reporting infrastructure compared to developed countries. The adoption of high-quality accounting standards is important to increase the quality of financial reports, but it is not sufficient to ensure the production of high-quality accounting information. As achieving a high-quality financial report requires not only the application of high-quality accounting standards but also a commitment to the proper application of those standards through the appropriate enforcement mechanisms (Mhedhbi & Zeghal, 2016; Ebaid, 2016; Katselas & Rosov, 2018; Mbir et al., 2020).

The auditor's report is considered the most important determinant of the level of quality of accounting information, and the most important element in raising confidence in the information disclosed in the financial reports because he is responsible for auditing financial statements and verifying the preparation and presentation of financial reports under the approved

accounting standards as well as the requirements of applicable laws. The auditor is responsible for detecting fraud and manipulation in the financial reports and giving reasonable assurance about the validity of the financial statements and their absence of material misstatements (IAASB, 2009).

Hence, the external audit plays an important role in increasing the credibility and reliability of accounting information. Accordingly, the accounting information cannot be described as of high quality just because of its qualitative characteristics only, but it must be audited by a qualified and independent auditor. Accordingly, the level of audit quality affects the level of quality and usefulness of the accounting information disclosed in the financial reports. It is worth noting that the audit quality level is part of the level of the financial reporting infrastructure represented by the professional level of the preparers and auditors of the financial statements, which has been considered to be low in developing countries (Nurunnabi, 2017).

The introduction of IFRS by the IFRS Foundation through the International Accounting Standards Board (IASB) in the first two decades of its existence completely changed the world's financial information environment. It has progressed to be the default accounting standard, trusted by investors everywhere, and mandated or permitted by 168 different countries as of 2023.²Historically, the International Accounting Standards (IAS) was released by the International Accounting Standards Committee (IASC). This committee was superseded by the IASB in 2001 which was given the mandate to create international accounting standards in order to bring about convergence between different national accounting standards. The new Board embraced the current IAS and developed new standards (IFRS). Since 2005, several countries have adopted the EU's model by formally adopting IFRS for public listed firms. Countries need to adopt IFRS as soon as possible due to the trend of globalization and the rise in international trade. The main goals of establishing accounting standards are to make accounting information more transparent and comparable and to enhance the information environment of businesses, which will help reduce income inequality (Ames, 2013).

²Available at :<https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/>

Unlike many developed countries, the regulatory structure of the Egyptian economy does not include a national accounting standards board, dedicated to examining the effects of economic activities and regulating these activities as part of a comprehensive economic vision or strategy. However, Egyptian accounting and auditing standards are developed, discussed, and approved by a ministerial committee, and then issued by ministerial decisions. So far, regarding the accounting standards, four main ministerial decisions, in the years 1997, 2006, 2015, and 2019, have been issued requiring the adoption of four amended versions of international accounting standards. Minister of Economy Resolution No. (503) of 1997 obligated joint-stock firms and limited partnerships by shares to apply the requirements of accounting standards. This decision included 20 accounting standards and allowed Egyptian firms to refer to IAS in cases that do not have similar accounting standards in the EASs, but the actual accounting practices of this version did not achieve its purpose due to insufficient knowledge of accountants of the provisions and rules of IAS, and the lack of appropriate implementation guidance for the Egyptian environment.

Therefore, Minister of Investment Decision No. (243) of 2006 was issued regarding the issuance of a new version of the EASs, listing (35) standards, by translating the international accounting standards prevailing during this period into Arabic with some amendments to them in order to be in line with Egyptian accounting practices, provided that the implementation of these standards will be effective from January 2007. Also, the ministerial decision clarified that this issuance aims to improve disclosure and transparency levels of the financial statements of firms listed on the EGX, increase their comparability, and facilitate the application of corporate governance mechanisms.³

As a response from the Egyptian government to fundamental changes in the global financial market, concerning its role in providing the infrastructure for accounting systems and setting a general framework for preparing financial reports, the Minister of Investment issued Ministerial Resolution No. 110 of 2015 with the most comprehensive set of international accounting standards in the history of the Egyptian accounting practice environment, which includes 39 accounting standards, in addition

³ Available at: <https://fra.gov.eg/>

to the framework for preparing and presenting financial reports, provided that these standards replace the preceding EASs as of January 2016.

Recently, the Minister of Investment and International Cooperation Decision No. (69) of 2019 was issued regarding the amendment of some provisions of the EASs issued under Ministerial Resolution No. (110) of 2015, and the addition of three new standards to be effective as of January 2021, namely Standard No. (47) for financial instruments corresponding to IFRS No. (9), and Standard No. (48) related to revenue from contracts with customers corresponding to IFRS No. (15), and finally Standard No. (49) related to lease contracts, corresponding to IFRS No. (16). In addition to the EAS No. (46) (MOIIC, 2019). However, this modification is outside the scope of the current research, but it is worthy to be mentioned in the context of the theoretical background of the research. Noting that, in 2022, the Prime Minister's Decision No. (1568) was issued to amend some provisions of the Egyptian Accounting Standard No. (13) amended in 2015 regarding the effects of changes in foreign exchange rates, to develop a special optional accounting treatment to deal with the implications of the exceptional fluctuation in the exchange rate. Furthermore, Ministerial Resolutions No. 883/2023 has been introduced to amend some provisions of the EASs issued by the Minister of Investment Resolution No. 110 of 2015.⁴

The researcher concludes from the foregoing that the radical shift in accounting practices at the international level, and in Egypt in particular, and the trend towards adopting a set of unified and internationally accepted accounting standards, to remove the differences between local accounting standards and their international counterparts is due to the response of regulatory bodies and standards setters to changes surrounding the business environment at the international level, including; increasing the globalization of financial markets, the spread of multinational firms and the complexity of interrelationships, and the increase in corporate competition globally for capital resources, more than ever before. That is adopting IFRS, or the 2015 Revised EASs, entails improving the quality of accounting information. At the same time, it requires more disclosures and

⁴ Available at: <https://fra.gov.eg/>

estimates in preparing the financial statements, hence, this leads to more auditor effort.

3. Research Hypothesis Formulation: Related Theories and Literature

In alignment with the Conceptual Framework for Financial Reporting, the **decision-usefulness theory** is considered the foundation theory for developing accounting standards in many countries. According to this theory, the main mission of preparing and publishing financial statements is to provide valuable and useful information for users to make economic decisions. Also, this theory addresses the concept of cost-benefit tradeoff which is an important aspect to consider when setting standards. Therefore, this theory explains the goal of developing high-quality IFRS to help financial statement users make sound decisions considering the costs and benefits of implementing IFRS (Soyinka et al., 2017; IASB, 2018; Kamotho et al., 2022). Besides that, according to the **signaling theory**, the adoption of IFRS can be seen as an indication of improved transparency and quality of financial reports presented to all market participants which motivates managers to demand high-quality level of the audit process to reflect their desire in reducing the potential perceived increased risk (Hlel et al., 2020; Hurley et al., 2021).

Moreover, how compliance with IFRS explains changes in audit effort and fees can be interpreted in light of some theories including agency, audit demand/supply, institutional isomorphism, economic bonding, and audit effort theories. The core theory that emphasizes the value of corporate governance as a tool for an oversight system that prevents managers from engaging in improper behavior is the **agency theory**. Using agency theory's underlying concepts, the use of IFRS would increase the owners' confidence by making it easier for them to resolve conflicts of interest and lower agency costs. Following the implementation of IFRS, more accounting information will be made available, which would limit the information gap between owners and management, which lowers agency issues, and improves information quality through transparent disclosure. According to this theory, the **audit fee** charged for the external auditor is a necessary agency cost since the external audit is frequently thought of as a main

control mechanism suggested by the agency theory that would enable owners to monitor, punish managers and compel them to act in their best interests (Hlel et al., 2020).

Based on **audit demand theory**, there are two possible reasons why both internal and external stakeholders may call for more audit effort. According to agency theory, managers may behave in their interests, therefore, audits can lessen the chance that managers will act against shareholders' interests and behave for their gain. Hence, to reduce agency conflicts, **shareholders will probably ask for more auditor effort** to improve monitoring and increase confidence by providing assurance that financial statements show a truthful and fair image of the business firm. Internally, management can also request additional audit services to increase their understanding of a firm's internal processes, since more hours spent on auditing could be viewed as communicating that the firm accounting system infrastructure is reliable. Consequently, additional audit fees may be evidence that clients want more audit services to enhance auditing procedures. However, according to the **audit supply theory**, the cost of an auditing service rises as client risk does. Given audit risk indicators such as industry and competitive risk, earnings management, and ineffective internal control, **audit firms, which supply the audit service, demand higher audit fees** when an auditor's assessment of a client's audit risk rises implying the increased risk of reputational damage due to the increased risk of failure to detect misreporting (Mali & Lim, 2021; Yuan et al., 2023).

The increased required professional judgments associated with the implementation of IFRS imply increased business risk, and hence, audit fees. For instance, the focus on fair value in IFRS is one of the factors that has caused audit fees to rise since managers must use more discretionary judgment when determining the value of assets and liabilities due to the greater reliance on fair value measurement on financial statements. This raises the likelihood of reporting mistakes and incorrect account numbers. Accordingly, **adopting IFRS is challenging for auditors** to comprehend new standards and perform audit procedures to assess the validity of the management's accounting estimations. In addition to the preparation of audit programs to help audit personnel comprehend new requirements which will

increase audit costs as well (Nam, 2018; Miah et al., 2020; Zhang & Shailer, 2021).

In addition, according to the **institutional isomorphism** hypothesis, while using IFRS, firms are vulnerable to pressure since they may be ruled by governmental and legislative bodies, shareholders, creditors, customers, or pressure from cultural and societal norms. Similarly, firms are under simulated pressure because of ambiguity about the implementation of IFRS, given its unclear translation and the greater flexibility in its application. To get social acceptance, firms will therefore emulate other firms, particularly those that are leaders in the same industry, in dealing with big 4 audit firms that often have expertise in auditing financial statements prepared under complicated IFRS, to satisfy users' expectations, in turn offering greater audit fees (Aburous, 2019; Abaidoo & Agyapong, 2022).

In this regard, audit firms may be charged higher fees which could reflect two opposing perspectives. One is based on the **economic bonding theory**, which claims that auditor independence may be compromised by auditors' financial reliance on their client payments, which could result in a lower-quality audit. The alternative perspective is supported by the **audit effort theory**, which contends that unusually high audit fees cover the extra work auditors put in to improve audit quality (Jung et al., 2016).

Therefore, concerning the relationship between the IFRS implementation and auditor exerted effort, theoretically, the auditor's effort is related to audit complexity and often rises under the introduction of IFRS which, in turn, plays an important role in determining fees for the audit. Depending on the business and financial reporting complexities of their clients, auditors should undertake varied extents of effort. When an audit effort is more massive, audit modifications may also happen more frequently, allowing the auditors to employ additional procedures for auditing to increase the accuracy of their misstatement discovery. Therefore, once faced with likely legal risk and reputational harm because of an increased risk of failing to find financial misreporting, auditors are more likely to impose an extra risk premium in the form of higher audit fees, hence, auditor's effort is associated with audit fees. In this context, earlier research has provided evidence that factors related to both the auditor

supply side and the preparers of the financial statements, as the demand side, influence audit fees (Florou et al., 2020; Mali & Lim, 2021; Yuan et al., 2023).

Moreover, the planning, gathering, and evaluating of the audit evidence, and, finally, the formulation of the audit opinion after the audit is complete are all complex processes that entail professional judgments which, in turn, affect the auditor's effort. Auditors, for instance, should determine whether complicated transactions are reported in compliant with the more complicated IFRS, and evaluate the client's estimations for determining the values of liabilities and assets. A high fee is intended to make up for the auditor's perception that working with a client with a higher risk profile will raise the likelihood that the auditor will suffer a reputational or monetary loss. Audit quality is anticipated to improve as a result of an increase in fees brought on by greater effort (Florou et al., 2020).

To sum up, the researcher concludes that the entire number of hours and days the auditor, along with his team, spends performing the appropriate audit procedures, which is known as the audit or auditor's effort, is necessary since it determines how much trust to put in the information provided by managers to reduce agency conflict. As a result, to successfully perform an audit, auditors must put in a lot of effort in planning, assessing, and responding to the estimated risk rising following the implementation of IFRS. This, in turn, may lead to increasing the fees for the audits.

Concerning audit fees, they are a function of predicted legal liabilities related to the risk that an auditor will not detect and report on a material misstatement in the auditee's financial statements, and costs associated with the auditor's effort. Therefore, if the audit risk is low and the audit market is more competitive, then there is less opportunity to increase audit fees. However, if the audit risk is high and the audit market is more concentrated, then auditors can compensate for their increased effort associated with auditing financial statements prepared in accordance with IFRS. The key source of risk is the focus IFRS places on fair value, which suggests that auditors would need to charge an extra audit fee premium to account for the complexity and increased audit risk associated with financial statements prepared under IFRS (Kim et al., 2012; Jung et al., 2016; Chen et al., 2019).

From the foregoing, **the researcher** concludes that the audit fees are the amount that the auditor receives from his client, in return for carrying out the audit process in the best way, as the audit fees represent a reflection of the effort and the risks expected from carrying out the audit process. This depends on the skill and knowledge required for the type of work being done, the level of training and experience of the team members, and constrained by the time required to complete the engagement.

Concerning the determinants of audit fees, many studies (e.g., ElGammal & Gharzeddine, 2020; Widmann et al., 2021; Xue & O'Sullivan, 2023) have dealt with factors influencing audit fees, either in terms of workload-specific factors, and risk-specific factors, or in terms of auditee-specific factors, auditor and audit firm-specific factors, and other factors. Regarding the **auditee**-specific factors that affect the determination of fees charged to the auditor, they are represented by **risk** and **complexity** indicators such as the size of the firm under audit, the ratio of financial leverage, the value of inventory, the rate of inventory turnover, net working capital; **profitability** indicators such as net profits, rate of return on assets; **liquidity** indicators such as current ratio, quick ratio, net cash flows from operating activities; **corporate governance** indicators such as the strength of the internal control structure, the extent to which the auditor relies on the internal audit, the legal form of the firm under audit, and the ownership structure.

The factors related to the **auditor** and the **audit firm** that influence the determination of audit fees are the size of the audit firm in terms of whether it is one of the four big audit firms, the number of auditors, the volume of the annual revenue, the number of audits carried out by the audit firm, the industrial specialization, the auditor's assessment of the audit risk, the length of the contract period between the audit firm and the auditee, and the reputation of the audit firm. Finally, the various **other factors** are represented by the existence of binding accounting and auditing legislation and standards, the existence of compulsory ethics rules for the conduct of the profession, competition among audit firms, and the allowed period between the date of the engagement and the date of submitting the audit report (Widmann et al., 2021; Song et al., 2023; Xue & O'Sullivan, 2023).

Studies have repeatedly established a significant correlation between audit fees and the size, complexity, and risk of an engagement, all of which are characteristics that are theorized to influence audit efforts and are expressly linked to the auditing standards concerning risk-based auditing. As a result, the new potential for increased risks associated with the audit client's implementation of IFRS would necessitate more audit costs because it would have taken more time and effort to discover, evaluate, and mitigate the risks. Additionally, more auditing efforts should have been put into planning as well as perhaps more testing of controls (Zhang & Shailer, 2021).

Concerning the timing of the audit report in the Egyptian reporting environment, Article No. (46) of the rules for listing and delisting securities on the EGX, issued by the Financial Regulatory Authority (FRA)'s Board of Directors Decree No. (11) of 2023, indicated that listed firms shall provide the Authority and the EGX with a copy of the annual financial statements accompanied by the auditor's report, provided being approved by the general assembly of the shareholders within a period not exceeding three months from the date of the end of the fiscal year. Accordingly, there are no differences between the date of the auditor's signing of the audit report and the date of publication of the financial reports in the Egyptian business environment (FRA, 2023). However, there are no requirements regarding disclosing the audit hours spent by the auditors.

The **researcher** concludes that the extra audit effort is related to the amount and extent of the procedures followed by the auditor to collect sufficient and appropriate evidence that enables him to issue the appropriate opinion on the audited financial statements prepared in accordance with more complicated accounting standards. There are three indicators usually used for measuring audit effort, namely, audit fees, delay in issuing the auditor's report, and audit hours. In the current research, the researcher utilizes the **audit fees** as a reflection of the **effort** that arises from the expected risks of carrying out the audit process. Regarding its determinants, the researcher focuses in the current research on the **auditee**-specific determinants of the fees the auditor receives from his client in exchange for carrying out the audit process in an optimal manner.

Most studies that addressed the IFRS implementation have a common objective of examining its implications at the economic or financial statements levels. Some research (e.g., Li et al., 2021; Owusu et al., 2022) has focused on the economic benefits of adoption in terms of economic growth, market liquidity, and decreased information asymmetry. Some other research (e.g., Habib et al., 2019; Abdullahi & Abubakar, 2020; Klish et al., 2022; Houcine et al., 2022) has investigated how IFRS affects the quality level of financial reports.

However, the literature that relates the IFRS implementation and auditing focused on areas such as auditor type, audit quality, audit report lag, and audit fees. Prior studies found that a higher level of IFRS compliance is related to hiring Big 4 auditors experienced with IFRS, and the greater audit quality (e.g., Wieczynska, 2016; Lin & Yen, 2016; Bhattacharya & Banerjee, 2020). Regarding the audit report lag, prior studies (e.g., Amirul & Salleh, 2014; Habib, 2015; Asante-Appiah, 2020; Xiao et al., 2020) provided evidence that the implementation of IFRS can lead to lengthening the time it takes management to prepare financial statements and, in turn, auditor delays in issuing his report, which results in an extended audit report lag.

Regarding methodologies, most studies (e.g., De George et al., 2013; Raffournier & Schatt, 2018; Miah et al., 2020; Kang et al., 2021; Tawiah, 2022; Kamarudin et al., 2022; Lunawat et al., 2023) conducted an archival study on samples of listed financial or nonfinancial firms in different developed countries either at the year of mandatory adoption or pre- and post-comparison. **Regarding measures**, previous studies have dealt with three indicators for measuring audit effort; namely auditor's report delay, audit hours, and audit fees. Regarding the delay in issuing the auditor's report some studies (e.g., Asante-Appiah, 2020; Xiao et al., 2020), found that the extra audit work necessary to generate a reliable audit opinion expands the period it takes to be issued. Others (e.g., Jung, 2016; Che et al., 2018; Azzali et al., 2021; Kang et al., 2021; Mali & Lim, 2021) used audit hours as a proxy for audit effort since shareholders may require the auditor to work more hours in order to mitigate agency problems and be more confident in the financial statements. Also, it may be the request of the management of firms to signal their high performance in countries that

require the disclosure of audit hours. Whereas, the most commonly used measure is audit fees (e.g., Miah et al., 2020; Zhang & Shailer, 2021).

Theoretically, there are three possibilities for the effect applying more complicated accounting standards has on the auditor's effort. **First**, more effort is exerted, and more overtime is spent, using the unique skills and experiences of other specialists which leads to **increased audit fees**. **Second**, audit fees remain mostly **unchanged** if the audit effort is unchanged. That is, without increasing the overall number of hours the engagement team must work, auditors can simply rearrange the scheduling of procedures. For instance, auditors can increase the amount of testing done on an interim basis. **Third**, auditors may significantly alter the engagement plan by increasing reliance on a client's internal controls, internal audit, offshore lower-level work, and leveraging more technology. As a result of the reduced audit work, audit fees may be also **reduced** (Calabrese, 2023).

However, the **empirical** findings remain debatable and inconclusive regarding the influence of the adoption of IFRS on the audit effort measured by the audit fees. According to some research (De George et al., 2013; Lin & Yen, 2016; Ye et al., 2018; Musah et al., 2018; Raffournier & Schatt, 2018; Zhang & Shailer, 2021), audit fees rose in the IFRS era as a result of the required extra effort represented by greater budgeted work hours, and increased extent of testing. While other studies (e.g., Miah et al., 2020; Kang et al., 2021; Tawiah, 2022; Kamarudin et al., 2022; Lunawat et al., 2023) found that in cases of new audit engagement for the auditor, unspecialized auditors, or small audit firms, there is a weak or insignificant correlation between audit fees and the implementation of IFRS, as these cases represent challenges to raising audit fees to reflect the anticipated audit work in audit market that is competitive.

Due to the limited availability of data regarding the spent audit hours among the nonfinancial listed firms on the EGX, the researcher expresses in this research the auditor's effort in terms of the fees charged. Accordingly, there are two contrasting perspectives regarding the effect the 2015 revised EASs implementation has on audit fees. One perspective implies the increase in audit fees subsequent to the implementation due to the increased audit effort associated with the increased complexity and risk.

In contrast, there may be no change in audit fees after the implementation due to competition among audit firms. The financial reporting environment in Egypt provides a distinct environment from other international contexts to study the changes in audit fees after IFRS implementation since it has a modified version of IFRS to suit the prevailing laws, economic, and governance structure. However, considering the opposing arguments collectively discussed above, it may be challenging to determine the direction of the relationship between the 2015 revised EASs implementation and the auditor's effort. **Therefore, the main research hypothesis (RH) can be formulated, in its undirected alternative form,** as follows, while controlling for some auditee's characteristics:

RH: Implementing the 2015 revised Egyptian Accounting Standards (EASs) among nonfinancial listed firms on the EGX significantly affects the auditor's effort.

4. The Empirical Study

This section aims to empirically test the research hypothesis to conclude whether the implementation of the revised EASs, which is considered a modified version of IFRS that suits the Egyptian context, influences the auditor's effort after controlling for some auditees' characteristics that are frequently used in prior studies in the Egyptian reporting environment. Measures of research variables and the research model that is estimated to test the research hypothesis are described in the next subsections.

4.1 Revised EASs Implementation and Auditor's Effort Model Specification

The research hypothesis reveals that the dependent variable is the auditor's effort. It is proxied by audit fees, the most commonly used measure following some prior studies (e.g., Miah et al., 2020; Zhang & Shailer, 2021) due to the availability of data. Because of the labor-intensive nature of audit work, which needs processing a lot of data to get a conclusion on which auditors can base their opinion, an increase in audit fees is frequently a result of the increased workload (Bustos-Contell et al., 2022). The independent variable is the 2015 revised EASs implementation, which involves more disclosures and estimates, which is expected to

increase the auditor's effort when auditing the financial statements prepared following those standards. This association is tested while controlling for some variables that may affect the auditor's effort; namely, net loss, current ratio, quick ratio, and cash flow from operating activities. **Figure 1** illustrates the resulting research model.

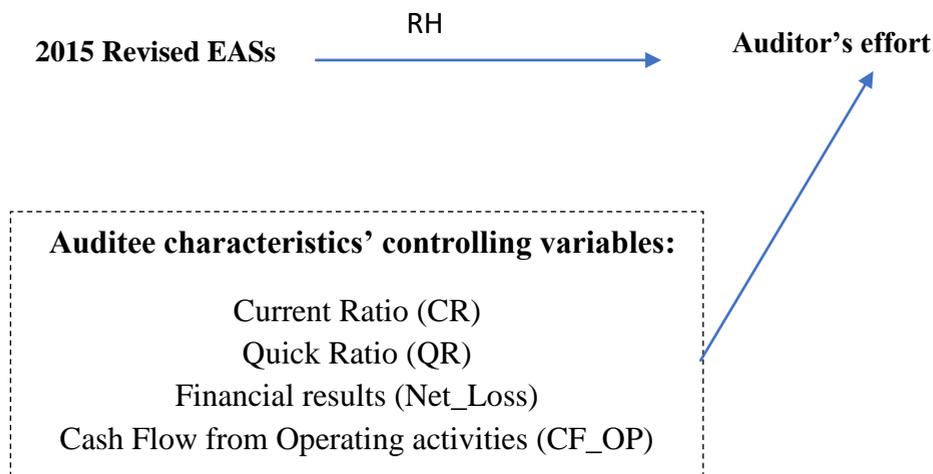


Figure 1: The Research Model
Source: Prepared by the researcher

Typically, panel data provides the foundation for panel regression models where the same firms are gathered throughout several years and regression is then performed on both of those dimensions; i.e., cross firms over years (Gujarati & Porter, 2009). Therefore, to empirically test the main research hypothesis (RH), regarding the effect of implementing the 2015 revised EASs, among nonfinancial listed firms on the EGX, on the auditor's effort, first, the Hausman test is conducted.⁵ As a result, a random panel regression model is estimated as follows:

$$\text{Effort}_{it} = \beta_0 + \beta_1 \text{New_EAS}_{it} + \beta_2 \text{CR}_{it} + \beta_3 \text{QR}_{it} + \beta_4 \text{CF_OP}_{it} + \beta_5 \text{Net_Loss}_{it} + \varepsilon_{it} \quad \text{Model (1)}$$

⁵ This test offers a statistical evaluation of whether the data support the fixed or random effects models. The null hypothesis for the Hausman test states that the panel fixed least squares regression model is not the best for testing the underlying data (Gujarati & Porter, 2009). By conducting the Hausman test, the resulting p-value = 0.871, which is greater than 0.05, indicating the appropriateness of the panel random regression for testing the underlying data.

Where **Effort_{it}** is measured by the natural log of audit fees agreed upon on the minutes of the annual general assembly shareholders' meeting (Miah et al., 2020; Zhang & Shailer, 2021; Lunawat et al., 2023). **New_EAS_{it}** is the explanatory variable representing the 2015 revised EASs implementation to be measured as an indicator variable equal to 1 for fiscal years 2017 through 2022 (post-2015 revised EASs), and 0 for fiscal years 2013 through 2015 (pre-2015 revised EASs) following some studies (e.g., Azzali et al., 2021; Lunawat et al., 2023). β_1 , the explanatory variable estimated coefficient, if it is positive (negative), then it would mean the increase (decrease) in the auditor's effort reflected in audit fees post-implementing the revised EASs issued in 2015, which are considered a modified version of IFRS that suit the Egyptian reporting environment, as compared to the pre-implementation period. Current Ratio (CR), Quick Ratio (QR), and Cash Flow from Operating activities (CF_OP) as measures of liquidity are expected to have negative coefficients since more liquidity decreases the possibility of managerial misconduct, hence, requires less auditor's effort. In addition, the auditee's financial results measured by the net loss (Net_Loss) are included as a control variable since management of firms achieving losses are more likely to engage in earnings management practices, therefore, it is expected to have a positive coefficient as it would require the auditor exert more effort (Azzali et al., 2021; Kang et al., 2021; Yuan et al., 2023). **Table 1** lists the research variables, their symbols used in the statistical analysis, the expected effect on the dependent variable, and the way of measuring each variable.

Table 1: Variables' Measurement

Variable	Symbol (Expected sign)	Measures
Auditor's effort "Dependent"	$Effort_{it}$	Proxied by the natural log of audit fees agreed upon on the minutes of the annual general assembly shareholder meeting (Miah et al., 2020; Zhang & Shailer, 2021; Lunawat et al., 2023).*
Revised EASs "Independent"	New_EAS_{it} (+/-)	The dummy variable takes the value of 1 if the year is equal to 2017 or later to 2022, and 0 if the year is equal to 2013-2015, the three years preceding the cutoff year of 2016 (Azzali et al., 2021; Lunawat et al., 2023).
Current Ratio "Control"	CR_{it} (-)	Calculated as the total current assets divided by total current liabilities at year (t) end (Kang et al., 2021; Lunawat et al., 2023; Yuan et al., 2023).
Quick Ratio "Control"	QR_{it} (-)	Calculated as the total current assets minus inventories divided by total current liabilities at year (t) end (Azzali et al., 2021).
Cash Flow from Operating activities "Control"	CF_OP_{it} (-)	Cash flow from operating activities in a year (t) scaled by total assets at (t-1) (Azzali et al., 2021; Yuan et al., 2023).
Financial results "Control"	Net_Loss_{it} (+)	The dummy variable takes the value of 1 if the auditee reported a net loss during the year, and 0 otherwise (Azzali et al., 2021; Kang et al., 2021; Yuan et al., 2023).

*An example of disclosed fees extracted from the annual shareholder meeting's minutes published on one of the sampled firms' websites without mentioning actual names:

"The firm's ordinary general assembly approved the appointment of auditor "X" affiliated with the audit firm "ABC" for the fiscal year ending 31 December 2021, and the assembly also decided to set a net yearly fee of 250,000 Egyptian pounds".

Source: Organized by the researcher.

4.2 Sample Selection

The researcher collected the required data for measuring the underlying research variables from the listed firms' websites and the website of "Mubasher Misr Information". The research sample involves financial statements prepared in the local Egyptian currency for all nonfinancial firms listed during the period 2013–2022 on the EGX with the fiscal year ending on December 31, after excluding the financial sector, and firms that lack the needed data pertain to the current research variables.

As summarized in **Table 2**, data for measuring variables are collected for 105 listed firms, representing 74.5% of the study population (141 firms), restricted by the data being available, from eight industries with a total of 945 firm-year observations for the period 2013-2022. This leads to final observations of 315 and 630 firm-year observations for the 2013-2015 pre-2015 revised EASs and the 2017-2022 post-2015 revised EASs periods, respectively.

Table 2: Selection of the research sample

Panel A: Criteria for selecting the final research sample		Firms
All listed firms as of 2022		229
<u>Less:</u>		
	Financial services	47
	Firms with other than December 31 fiscal year-end	40
	Firms with insufficient data of interest	37
Final sampled firms		105
Firm-year observations for the 2013-2015 pre-new 2015 EASs		
Firm-year observations for the 2017-2022 post-new 2015 EASs		
Total Firm-year observations		945

Panel B: Research sample by industry

	Populatio	sample firms	%
	n		
Basic Resources	16	8	7.6
Health Care & Pharmaceuticals	21	11	10.5
Industrial goods, Services, and Automobiles	6	6	5.7

Real Estate	33	26	24.8
Travel & Leisure	13	8	7.6
Food, Beverages, and Tobacco	29	23	21.9
Contracting & Construction Engineering	12	12	11.4
Building Materials	11	11	10.5
Total	141	105	100%

Source: Organized by the researcher.

5. Statistical Results

In this section, descriptive statistical data for research variables utilized in the panel regression model are discussed, followed by the findings of hypothesis testing.

5.1 Descriptive Statistics

The descriptive statistics for each variable employed in the research model's analysis during the sample period 2013-2022 are shown in **Table 3**. This table indicates that the means of the research variables lie between the minimum and maximum limits, which indicates that the data are homogeneous, which is supported by the standard deviation (SD) values, which are less than the mean for the same variables. However, the SD for each of CF_OP, and Net_Loss is greater than their means, which explains the variation of these variables in the financial statements of the sample firms, which is a normal situation since the sample includes 105 firms from different sectors in different years of prosperous and inactivity. In addition, the mean of the dependent variable **Effort_{it}**, is 5.238 which represents the mean of the natural log. of audit fees during the sample period 2013-2022. For the **New_EAS_{it}**, independent variable, the mean is 0.67, depicting that most of the sample are beyond the application of the revised 2015 EASs covering 6 fiscal years 2017-2022.

Table 3: Summary of descriptive statistics for the full sample (n=945)

Variables	Min	Median	Max	Mean	SD
Effort _{it}	5	5.136	5.653	5.238	0.204
New_EAS _{it}	0	1	1	0.67	0.47
CR _{it}	0.11	1.8	10.95	2.82	2.42
QR _{it}	0.01	1.7	10.85	2.67	2.61
CF_OP _{it}	-0.095	0.017	3.96	0.26	0.78
Net_Loss _{it}	0	0	1	0.46	0.49

Source: Organized by the researcher.

The level of relationship that exists among the research variables was estimated using Pearson's correlation coefficient because the sample data have a normal distribution. Given that all of the correlation coefficients between the independent and control variables are less than 0.7 as shown in **Table 4**, there is no multicollinearity problem. Hence, regression analysis can be carried out without any issues. In addition, there is a significant direct relationship between the dependent variable **Effort** and the independent variable **New_EAS**, since Pearson's coefficient is 0.635.

Table 4: Correlation among research variables for the full sample (n=945)

Variables	Effort	New_EAS	CR	QR	CF_OP	et_Loss
Effort	1					
New_EAS	0.635*	1				
CR	-0.216*	-0.073*	1			
QR	-0.108*	-0.102*	0.319*	1		
CF_OP	-0.189*	-0.236*	0.098*	-0.028	1	
Net_Loss	0.783*	0.563*	0.101*	-0.037	0.353*	1

Source: Organized by the researcher.

5.2 Empirical Results of the Revised EASs Implementation and Auditor's Effort Model

Table 5 organizes the results of the random panel regression that tests the effect of implementing the 2015 revised EASs on the auditor's effort, which is measured by the natural log of audit fees. The results of the statistical test support the model as a whole (P-value = 0.000), which means the validity of the model to test the relationship under study. Additionally, the adjusted R² indicates that 71.52% of changes in the audit fees, as a measure of the auditor's effort, can be attributed to the application of the 2015 revised EASs while controlling for some auditee's related factors. Furthermore, the coefficient of the New_EAS (0.110) is positive and significant indicating that there is a direct relationship between applying the revised accounting standards and the exerted auditor's effort. This result is consistent with the positive correlation (0.635) between the application of the 2015 revised EASs and the auditor's effort reported in **Table 4**. These results **support the research hypothesis (RH)**.

Table 5: Panel regression model's results

$Effort_{it} = \beta_0 + \beta_1 New_EAS_{it} + \beta_2 CR_{it} + \beta_3 QR_{it} + \beta_4 CF_OP_{it} + \beta_5 Net_Loss_{it} + \varepsilon_{it}$		
<u>Variable</u>	<u>β</u>	<u>P-value (t-statistics)</u>
Intercept	4.980	0.000 (498.0686)
New_EAS	0.110	0.000 (11.7143)
CR	-0.015	0.000 (-9.2080)
QR	--0.012	0.000 (-8.5164)
CF_OP	-0.021	0.001 (-4.2578)
Net_Loss	0.268	0.000 (29.3836)
R ²		0.7167
Adjusted R ²		0.7152
F-statistic (Model Sig.)		475.1299 (0.000)

* The significance level is 5%, and the model is run for a sample of 945 firm-year observations for the fiscal years 2013-2022.

Source: The EViews 10's output is organized by the researcher.

Accordingly, the resulting significant positive relationship between implementing the revised issued version of the EASs and the audit fees charged by the auditor for the increased effort is logical. This finding is consistent with other studies' findings (e.g., Miah et al., 2020; Zhang & Shailer, 2020), as well as theories of audit supply and demand. The researcher believes that the positive impact of implementing the revised EASs on the auditor's effort is due to the fact that the revised standards are in alignment with the IFRS which involve more estimates and judgments in preparing the financial statements that require more effort to be exerted by the auditor.

6. Other Analyses

To test the effect of implementing the 2015 revised EASs on the auditor's effort without including the control variables, **Table 6** reports the results of the random panel regression. The regression model is significant since the p-value is less than 0.05, and the adjusted R² implies that the application of the New_EASs interprets 40.25% of changes in the auditor's effort, as proxied by the natural log. of audit fees. The coefficient of the New_EAS (0.2743) indicates that there is a significant positive association between the auditor's effort and the application of the revised EASs even in the absence of the control variables.

Table 6: Results of the panel regression model without control variables

$\text{Effort}_{it} = \beta_0 + \beta_1 \text{New_EAS}_{it} + \varepsilon_{it}$			
<u>Variable</u>	<u>β</u>	<u>t-statistics</u>	<u>Sig.</u>
Intercept	5.0559	539.5387	0.0000
New_EAS	0.2743	23.8971	0.0000
R ²		0.4032	
Adjusted R ²		0.4025	
F-statistic (Model Sig.)		637.1086 (0.0000)	

* The significance level is 5%, and the model is run for a sample of 945 firm-year observations for the fiscal years 2013-2022.

Source: Organized by the researcher using the EViews 10's outputs.

Furthermore, by dividing the full sample into two subsamples, for the 2013-2015 pre-implementation of the revised EASs, and the 2017-2022 post-implementation of the revised EASs, the relevant statistics are reported in **Table 7**. As shown in **Table 7, panel A**, the mean of the audit fees, as a measure of the auditor's effort, in the post-implementation period (5.330) is slightly greater than in the pre-implementation period (5.056). To test whether this difference in means (0.274) is statistically significant, the two-sample **t-test** is utilized. It is found that there is a significant difference between the pre and post New_EASs implementation regarding the audit fees charged to the auditor ($t = -25.241$ and $p\text{-value} = 0.000$) on behalf of the post-implementation period.

Table 7: Pre- versus post- 2015 revised EASs' statistical test

Panel A: Descriptives							
Variables		Min	Median	Max	Mean	SD	Mean diff. (t-stats)
Effort_{it}	Pre	5	5.041	5.114	5.056	0.037	
	Post	5.117	5.243	5.653	5.330	0.191	-0.274 (-25.241)*
CR_{it}	Pre	0.95	1.35	10.95	2.562	2.705	
	Post	0.11	2.24	10.95	2.941	2.257	-0.379 (-2.269)*
QR_{it}	Pre	0.20	2.12	10.85	3.052	2.645	
	Post	0.01	1.4	10.85	2.489	2.571	0.563 (3.142)*
CF_OP_{it}	Pre	-0.082	0.004	0.076	-0.0004	0.035	
	Post	-0.095	0.038	3.955	0.3902	0.928	-0.391 (-7.461)*
Net_Loss_{it}	Pre	0	0	1	0.069	0.255	
	Post	0	1	1	0.666	0.472	-0.597 (-20.966)*

Panel B: Pre- versus post-2015 revised EASs' results of the panel regression model

$$\text{Effort}_{it} = \beta_0 + \beta_1 \text{CR}_{it} + \beta_2 \text{QR}_{it} + \beta_3 \text{CF_OP}_{it} + \beta_4 \text{Net_Loss}_{it} + \varepsilon_{it}$$

Variable	2013-2015 pre-2015 EASs			2017-2022 post- 2015 EASs		
	β	t-statistics	P-value	β	t-statistics	P-value
Intercept	5.0945	1847.478	0.0000	5.0996	474.8309	0.0000
CR	-0.0134	-9.3387	0.0000	-0.0187	-8.5431	0.0000
QR	-0.0237	-14.4778	0.0000	-0.0066	-3.5356	0.0004
CF_OP	-0.2610	-4.2159	0.0000	-0.0248	-4.4875	0.0000
Net_Loss	0.0049	0.7459	0.0635	0.3023	27.6601	0.0000
F-statistic (Sig.)	139.9414 (0.000)			249.7248 (0.000)		
R ²	0.6435			0.6151		
Adjusted R ²	0.6389			0.6126		
Sample size	315			630		

Source: Organized by the researcher.

To further check the causality effect of implementing the revised EASs on the auditor's effort, the eta squared (η^2), as a common measure of comparing means' effect size, is calculated for the difference in mean of the dependent variable, Effort, pre and post the implementation of the 2015 revised EASs. It classifies the effect into small (if $\eta^2 = 0.01$), medium ($\eta^2 = 0.06$), and large ($\eta^2 = 0.14$) effects (Pallant, 2016). The resulting untabulated η^2 is 0.403 which implies a large effect according to the thumb rule of η^2 .

As demonstrated in **panel B of Table 7**, model (1) is re-estimated with the control variables for the pre and post-implementation periods separately. The liquidity control variables still have a negative significant effect on the auditor's effort. The adjusted R² of the 2013-2015 pre-2015 revised EASs versus the adjusted R² of the 2017-2022 post-2015 revised EASs is 0.6389 and 0.6126, respectively. To test the significance of the differences between the explanatory power (R²) of the pre and post-models (difference in adjusted R² = 0.0263), Cramer's z-test equation is relied upon. Through the calculated Z, using the equation depicted below, and the tabular Z comparison, if the tabular Z value exceeds the calculated Z value, the null hypothesis cannot be rejected while the alternative is rejected, as there are no significant differences between the two adjusted R² for the two models (Mohammed et al., 2018). **The following is the Z calculation equation:**

$$Z = \frac{R^2_{pre} - R^2_{post}}{\sqrt{[\text{var}(R^2_{pre})\text{var}(R^2_{post})]}}$$

$$\text{var}(R^2) \sim \frac{4}{n}R^2(1-R^2)^2 - \left[1 - \frac{2(q+1)+3}{n}\right]$$

Where R^2_{pre} denotes the model's explanatory power in the 2013-2015 pre-revised EASs implementation period, and R^2_{post} denotes the model's explanatory power in the 2017-2022 post-2015 revised EASs implementation period. The $\text{var}(R^2_{pre})$ stands for the variance of the model's explanatory power in the pre-2015 revised EASs implementation period, while $\text{var}(R^2_{post})$ stands for the variance in the model's explanatory power in the post-2015 revised EASs implementation period. Additionally, “n” refers to the number of firm-year observations, while “q” refers to the number of independent variables. In the case of the calculated value of Z is greater than or equal to its tabular value at a significance level of 0.05, the null hypothesis that “there are no significant differences between the coefficient of determination R^2 before and after the implementation of the 2015 revised EASs” cannot be accepted, and then the alternative hypothesis is accepted that says that “there are significant differences between the adjusted R^2 of the model before and after the implementation of the 2015 revised EASs (Mohammed et al., 2018).

By applying the previous equation to the results of **Table 7**, the calculated $Z = 0.0267$ which is less than the 1.96 tabulated value of Z at the significance level of 5% two tails. Then, the null hypothesis cannot be rejected and the alternative is rejected, as there are no significant differences between the two regression models of the sample before application compared to after application of the revised EASs. Accordingly, by testing the significance of the difference between the adjusted R^2 of both the pre- and post-2015 revised EASs implementation period, it is revealed that there is no significant difference between the two models' explanatory power. **This justifies relying on the full sample in the primary analysis.**

To summarize, concerning the main research hypothesis, the results of the primary analysis agree with the results of the other analyses. That is, implementing the 2015 revised EASs significantly and positively influences the auditor's effort as evidenced by the increase in audit fees among the

nonfinancial firms listed on the EGX. Overall, the outcomes of the other analyses agree with those of the primary analysis, demonstrating the validity of the research findings.

7. Conclusion

To raise the level of trust in the information provided by managers and decrease agency conflict, audit effort is an essential element influencing audit quality. The external auditor plays a role in resolving agency disputes between shareholders and managers through the audit process, which interprets the relationship between agency theory and the increased audit fees related to the increased auditor's effort.

Therefore, by using a sample of 945 firm-year observations of 105 nonfinancial listed firms on EGX over the period 2013-2022, the current research investigated and supported the causal relationship between implementing the 2015 revised EASs and the auditor's effort, as measured by the natural log of fees charged to the auditor, while controlling for measures of auditee's liquidity including the Current Ratio (CR), Quick Ratio (QR), and Cash Flow from Operating Activities (CF_OP). As expected, they are found to have negative coefficients which indicate that more liquidity decreases the motivation of managerial misconduct, hence, requires less auditor's effort. Additionally, the net loss, as a measure of the auditee's financial results control variable, has a positive effect on the increased auditor's effort.

Moreover, by conducting other analyses represented by testing the causal relationship between implementing the 2015 revised EASs and the auditor's effort without including the control variables, the relationship remains positive and significant. In addition, by dividing the full sample into the fiscal years 2013-2015 before implementing the revised EASs, and 2017-2022 beyond the implementation, the difference in audit fees, as a proxy for the auditor's effort, is proven to be statistically significant with a large effect size. Finally, by comparing the explanatory power of the two regression models conducted before and beyond the implementation of the 2015 revised EASs, it is evidenced that conducting the panel regression

using the full sample is the appropriate method, which is done in the primary analysis.

Generally, the reported statistical results of hypothesis testing imply the following interpretations. Regarding the Egyptian reporting context, there is a significant and positive association between implementing the 2015 revised EASs and the auditor's effort among the nonfinancial listed firms. This outcome is validated since by re-testing this relationship using alternative models and statistical tests, results also support the research hypothesis. The research findings agree with theories of audit supply and demand in addition to signaling and agency theories. That is, the resulting increase in audit fees after the implementation of the 2015 revised EASs can be interpreted as a response of listed firms to gain their shareholders' confidence, and as compensation for auditors' overwork to complete the audit process effectively.

However, the findings of the current research have to be explained in light of some **limitations**. **First**, the interpretation of the research findings should be within the limits of the research objective, the utilized sample and its selection conditions, the covered period, and the geographical limitation. **Second**, using other institutional contexts, such as small-sized firms, non-listed firms, those with financial statements prepared in foreign currency, and the financial services sector, may lead to different results. **Third**, only some auditee's related characteristics are examined. Thus, another limitation of this research is the exclusion of other auditee and auditor's characteristics that may influence the auditor's effort such as the audit client's sales growth rate, leverage, firm age, and the audit firm size and reputation. **Finally**, this research adopts the perspective of using audit fees as a proxy for audit effort, however, there are other measures such as audit report lag and audit hours.

Despite these limitations, for academics, regulators, auditors, and firm management, the current research on how the application of IFRS has affected the Egyptian auditing environment has some substantial **implications**. By focusing on the auditing profession, **this research** adds to earlier research that addressed the role of the external auditor in complying with IFRS, since it would help regulators understand the actual influence of

applying the 2015 revised EASs, which is consistent with IFRS, on the auditor's effort and the associated cost. It points out that if there is an improper legal and institutional context, the costs of applying the revised standards may outweigh the related advantages.

For the professional bodies, the current research highlights that the implementation of the 2015 revised EASs may have an impact on the Egyptian audit market. This research demonstrates how the introduction of these revised standards may require more effort to complete the audit process. As a result, professional bodies should mandate that local audit firms increase professional education and staff training to lessen the negative impact of the 2015 revised EASs implementation on the audit market's competition. However, auditors must also be aware of the possibility of material misstatement in the financial statements prepared under these standards and consider the effect on their audit opinion. **Moreover**, this research highlights, for business firms, the necessity of being aware of the adverse consequences of the revised EASs implementation on the increased audit fees in order to lessen the negative effects on their profitability. **Finally**, accounting departments in Egyptian universities should pay attention to teaching IFRS at the undergraduate and postgraduate levels.

Based on the foregoing, the researcher recommends that the EGX and the FRA should be interested seeking to enhance the accounting and auditing profession in Egypt and activating corporate governance mechanisms to create an environment for applying the 2015 revised EASs standards.

Last but not least, the researcher recommends conducting **future research** to provide further evidence on the consequences of applying the 2015 revised EASs among the listed firms on the EGX. The **researcher recommends** conducting this research on the banking sector or insurance firms over a longer period. In addition to conducting this research as a comparative study between several countries including a sample of developing countries, and a sample of European Union countries, to obtain a better understanding of the impact of implementing IFRS on the quality of financial statements and the required auditor's effort in different cultural and economic environments. Moreover, there are other relevant research opportunities, for example, testing the impact of applying the revised EASs on the audit plan and opinion. Besides, investigating the role of Big 4 audit firms in helping in achieving digital transformation in financial reporting, and examining how to account for digital currencies and their effect on the auditor's effort would be useful. Additionally, testing the effect of disclosure in the financial reports about the use of artificial intelligence tools on the value of the firm and the effort of the auditor, and the influence of increasing audit fees above normal levels on audit quality. Furthermore, it would be valuable to study the consequences of the revised EASs in terms of the effect on earnings management practices, and the cost of capital.

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