

**The effect of audit quality, Board of Directors'
Characteristics and Environmental Uncertainty on
firms' tax avoidance activities: Evidence from the
Egyptian business environment.**

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(Evidence from the Egyptian business environment)**

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Abstract

The purpose of this study is to investigate the effect of audit quality , Board characteristics and environmental uncertainty on the Tax Avoidance activities, and further provide empirical evidence in Egypt of tax avoidance practices in firms listed on the Egyptian Stock Exchange .

In order to achieve the study objectives, Its examined the effect of audit quality by(audit office size , audit fees , audit tenure) , the board characteristics by(board size , board independence, CEO duality) and the environmental uncertainty on tax avoidance activities through the measure of the Current ETR . This study was applied on a sample of 30 Egyptian firms listed at the Egyptian stock Exchange during the period 2019-2022, Multiple regression analysis was used to ascertain the relationship between the independent variables and the dependent variable .

The results of the study , indicate the negative effect of audit quality by(the audit office size and audit fees) on the tax avoidance activities when measured through Current ETR, while audit tenure has positive effects on tax avoidance activities , Also, there is negative effect of the board characteristics by(board size and board independence) on the tax avoidance activities ,while CEO duality has positive effects on tax avoidance activities , besides positive effects of environmental uncertainty on tax avoidance activities and negative effect of the managerial ability on tax avoidance activities .

Depending on this: the study has recommended the necessity of studying all the variables that have an effect on tax avoidance practice in Egyptian firms to reduce tax avoidance activities , to avoid its harmful impact on the state and society

Keywords: The audit quality, The board characteristics, The environmental Uncertainty , Effective tax rate (ETR) , Tax avoidance activities .

تأثير جودة المراجعة وخصائص مجلس الإدارة وعدم اليقين البيئي

على أنشطة التجنب الضريبي للشركات: دليل من بيئة الأعمال المصرية

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ملخص الدراسة

الغرض من هذه الدراسة هو التحقق من تأثير جودة المراجعة وخصائص مجلس الإدارة وعدم اليقين البيئي على أنشطة التجنب الضريبي ، وتقديم أدلة تجريبية من بيئة الأعمال المصرية على ممارسات التجنب الضريبي في الشركات المدرجة في البورصة المصرية.

من أجل تحقيق أهداف الدراسة ، قامت الباحثة بفحص تأثير جودة المراجعة من خلال (حجم مكتب المراجعة ، رسوم المراجعة ، مدة ارتباط مكتب المراجعة بالعميل) وخصائص مجلس الإدارة من خلال (حجم المجلس ، استقلالية المجلس ، ازدواجية دور الرئيس التنفيذي) وعدم اليقين البيئي على أنشطة التجنب الضريبي وذلك من خلال قياس ETR الحالي، وقد تم تطبيق هذه الدراسة على عينة من 30 شركة مصرية مدرجة في البورصة المصرية خلال الفترة 2019-2022 ، وقد تم استخدام تحليل الانحدار المتعدد لتأكيد العلاقة بين المتغيرات المستقلة والمتغير التابع.

نتائج الدراسة : تشير النتائج الواردة في هذه الدراسة إلى التأثير السلبي لجودة المراجعة من خلال (حجم مكتب المراجعة BIG4 ورسوم المراجعة) على أنشطة التجنب الضريبي عند قياسها من خلال ETR الحالي ، في حين أن زيادة مدة عمل مكتب المراجعة مع الشركة (العميل) لها آثار إيجابية على أنشطة التجنب الضريبي ، أيضًا هناك تأثير سلبي لخصائص مجلس الإدارة من خلال (حجم مجلس الإدارة واستقلالية المجلس) على أنشطة التجنب الضريبي ، في حين أن ازدواجية دور الرئيس التنفيذي لها آثار إيجابية على أنشطة التجنب الضريبي ، إلى جانب الآثار الإيجابية لعدم اليقين البيئي على أنشطة التجنب الضريبي ودور القدرة الإدارية في تخفيف الآثار الإيجابية لعدم اليقين البيئي على أنشطة التجنب الضريبي. وبناءً على ذلك: أوصت الدراسة بضرورة دراسة جميع المتغيرات التي تؤثر على ممارسات التجنب الضريبي في الشركات المصرية للحد من أنشطة التجنب الضريبي بها ، لتأثيرها الضار على الدولة والمجتمع .

الكلمات المفتاحية : جودة المراجعة ، خصائص مجلس الإدارة ، عدم اليقين البيئي ، معدل الضريبة الفعلي (ETR) ، أنشطة التجنب الضريبي.

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The effects of audit quality, Board of Directors' Characteristics and Environmental Uncertainty on firms' tax avoidance activities

(Evidence from the Egyptian business environment)

1-Theoretical Framework

1-1: Introduction and Research Problem

Tax expense is an operating cost that reduces company profits, so tax avoidance is a way to increase companies' earnings (Lee and Kao, 2018). The management carries out tax avoidance activities, because tax cost component are quite high and the company does not benefit directly from the taxes paid. The reason that is often cited is that management has an incentive to carry out tax avoidance activities, therefore, diverting tax costs to increase company value (Ninik Lestan et al., 2019).

Some studies define tax avoidance in a wide range of legal activities aimed at reduce the level of tax liabilities (Carlos E. Jiménez , 2018), which finally results in lowering tax payments to the government , while another study (Mahdi Saleh et al., 2020) , sees tax avoidance activities are related to illegal activities that reduce the needed government incomes for the infrastructural affairs and welfare and public service, since some firms use many activities for tax avoidance to reduce their taxable income

Another studies, examined the firm's efforts to reduce tax expenses , which can be mentioned as examples of tax aggressiveness (Irenius Dwinanto Bimo et al., 2019) and tax planning (Evangelos Chytis et al.,2020).

Also, Some previous studies in accounting indicate(Hanlon, M., Maydew et al. , 2016) that tax avoidance activity is a challenging activity which companies may oblige to pay more taxes and financial punishments in the future by decreasing tax payments in the current period. Thus, tax avoidance is increased uncertainties in the future payments of tax and uncertainties about the total of government cash flows.

Tax avoidance has attracted the interest of several recent studies in accounting , where some studies discussed determinants of tax avoidance such as: the effect of internal control on tax avoidance: the case of Indonesia (Irenius Dwinanto Bimo et al. ,2019) , The influence of the interaction between corporate governance and external monitoring systems on companies' tax avoidance (Carlos E. Jiménez-Angueira , 2018) . The effect of auditor characteristics on tax avoidance of Iranian companies (Mahdi Salehi , 2020) , The moderating influence of audit quality on CEO compensation and tax avoidance: Evidence from Tunisian Context (Ferchichi Jihene, Dabboussi Moez, 2019) . On the impact of

corporate governance on tax avoidance, some Previous studies(Kadir, Olayiwola Abdulraheem , 2018- Ni Putu Sri et al., 2019 - Peter Rawlings Osebe et al.,2019) examined the effect of corporate governance mechanisms , such as boards of directors characteristics

and Auditing Committee on tax avoidance activities, which have mixed results. Some studies have shown that corporate governance is able to decrease the level of tax avoidance activities (Kiesewetter, 2017; Ni Putu Sri, 2019) , some other studies demonstrate that corporate governance has no effect on tax avoidance due to the less effective implementation of governance and the assessment of corporate governance in which using different components and measurements (Kourdoumalou, S. ,2016).

Some studies focused on the influence of audit quality on tax avoidance activities also has varied results . Some previous studies have proven that audit quality affects tax avoidance activities(Ferchichi Jihene et al., 2019 - Kiridaran Kanagaretnam, 2016 - Ninik Lestan & Sucitra Nedya, 2019) , while other studies have found that audit quality does not affect tax avoidance activities (Seong Ho. Bae, 2017).

The environmental uncertainty is defined as the degree of change or variability in the external environment of the organization, consisting primarily of customers, competitors, government regulations, and unions (Henry Huang, 2017).

Therefore, the environmental uncertainty is an external factor that can affect tax avoidance activities(Dhaliwal, D. S. , 2011) , Environmental uncertainty occurs due to changes in business elements, especially as changes in the market of products produced by the firm (Francis et al., 2015), such as changes in customer consumption patterns and the competitive structure of products produced.

Some previous studies on environmental uncertainty, shown that volatile environments result in significantly improved planning activity, which helps managers to cope with better volatile environments . A more volatile environment will lead then managers to seek more cost-saving opportunities such as tax avoidance to stabilize their cash flow and present a less-risky corporate image for shareholders (Mutiarra Kemala Ratu et al.2019).

Some studies reveal that management will adjust to environmental changes by changing strategy and operations (Joseph Zhang, 2017),

The practices carried out is aimed to adjust the operational cost structure , , where reactions to high uncertainty environments have an impact on control systems that can ultimately influence management behavior in making decisions about tax avoidance activities.

Although a number of studies handled determinants of corporate tax avoidance activities , but most of them focus on developed countries , ex.(Joseph Garcia et al. , 2020- Kiesewetter, Dirk et al., 2017),While a little studies Interested in studying this determinants of corporate tax avoidance activities of the emerging economies(Reza Jamei , 2017) Therefore , the influence of corporate governance (especially board characteristics) and audit quality in light of the environmental uncertainty on tax avoidance

activities need more investigation in the Egyptian companies , besides , the inconsistency results of previous studies that examine the effect of corporate governance (especially board characteristics) and audit quality in light of the environmental uncertainty on tax avoidance, which represents the main reason for this study .

This study is illustrious from previous studies that inspected the correlation between the Board of Director's characteristics and audit quality in light of the environmental uncertainty with tax avoidance activities in developed countries , while there are no previous studies that dealt with this variables in Egypt , so this study is the first of its kind in Egypt , which will study this relationships. In addition, this study will provide significant and useful information to the income tax and value added tax to decrease tax avoidance activities and increase tax acquiescence among taxpayers, particularly at a time when the budget in Egypt suffered from a huge fiscal shortfall and increase the size of external indebtedness .

In light of the above, this research aims to answer the following questions:

RQ1 : what Is the effect of the audit quality on tax avoidance?

RQ2 : what Is the effect of the corporate governance (especially board characteristics) on tax avoidance?

RQ3 : what Is the effect of the environmental uncertainty on tax avoidance?

RQ4 : What is the effect of the interaction of managerial ability and the environmental uncertainty on tax avoidance?

1-2 : The research aims

This research aims to analyses and obtain empirical evidence on the effect of audit quality and Board of Directors' Characteristics in light of Environmental Uncertainty on tax avoidance, the results of this research are expected to add a literature related to the effect of audit quality and Board of Directors' Characteristics on tax avoidance in the Egyptian firms.

1-3 : The research Objectives

The objective of this research seeks to find out whether audit quality and board characteristics have impact on corporate tax avoidance. Specifically, this study attempts to examine the impact of the board of directors independence, board size, separation of the roles of the board chairman and the CEO and the external audit quality in light of environmental Uncertainty on corporate tax avoidance activities.

In order to confirm the impact of audit quality and board characteristics on corporate tax avoidance ,Several research hypotheses were tested related to the impact of audit quality and board characteristics .

1-4 : The research contributions

This research is expected to numerous important contributions to the accounting literature , such as :

First, auditing quality offer a valued service by improving financial reporting quality , it contributes to this research by recording that auditing quality which is associated with a lesser probability of tax avoidance
Second, we contribute through this research in documenting that the association between corporate governance mechanisms especially Board of directors Characteristics and the likelihood of tax avoidance activities , hence it varies with different characteristics of the Board of directors .

This evidence is significant as most of the research on tax avoidance is lead primarily in developed countries. Third, this research contribute to the literature that examines determinants of tax avoidance activities , where is expected that the tax avoidance through countries is associated with country-level tax system features, Fourth, this research must be of attention to tax policymakers in Egypt , which concerned about decreasing corporate tax revenues and the increasing gap between reported incomes and taxable income, Fifth: This research measures the Previous variables effect on tax avoidance in the light of environmental uncertainty, where these variables are not discussed by any previous study in Egypt .

1-5 : The research limitations

This research is limited to audit quality variables measured by three proxies namely the audit office size, audit fees, and audit tenure and besides of measuring the Board of directors Characteristics by Board size , board independence and CEO Duality only. In addition to measuring the tax avoidance practices in this research is using Current Effective Tax Rate

1-6 : The research plan

The rest of this study is organized as follows:

- 2- Literature review and hypothesis development
- 3- Applied study methodology
- 4- The conclusions and Suggestions 5- The references

2- Literature review and hypothesis development

There are some previous studies that deal with the relationship of the audit quality, the Board of Directors characteristics and the

environmental uncertainty with tax avoidance activities, the most important of which are:

The study of (Dyrenge, S., et al., 2017) handle "the effect of managerial ability on tax avoidance" showed that managerial ability has a negative and significant effect on tax avoidance activities in the study period.

The study of (Reza Jamei, 2017) investigated whether the given granted incentives to managers reduce tax avoidance activities. Results showed that financial situation of the corporate, tax specialty of managers, and granted incentives that are dependent on managers performance has significantly and positively influenced by tax avoidance activities. The study of (Francis et al., 2017) under the title "managerial ability and tax avoidance" to study the relationship between management ability and tax avoidance whose results showed that high management ability has a negative relationship with tax avoidance activities.

Joseph Zhang, 2017, in a research under the title of "The environmental uncertainty on tax Avoidance" where This study examines the relationship between environmental uncertainty and tax avoidance activities. Where it posit that managers faced with more uncertain environments are likely to engage in more tax avoidance activities.

It also, found a significant and negative relationship between environmental uncertainty and effective tax rates, and found that high managerial ability mitigates the above relationship. Moreover, it found that small, highly leveraged, and innovative firms operating in uncertain environments engage in more tax avoidance.

The study of (Kovermann, J. et al., 2018), investigate the corporate governance influences on tax avoidance activities, where tax avoidance activities decreases by increasing the mechanisms of corporate governance, moreover, corporate governance influences

indirectly (by the moderating variable of financial reporting quality) on tax avoidance activities (KADIR,Olayiwola Abdulraheem ,2018) in a research under the title of “The Impact of Corporate Governance Mechanisms on Corporate Tax Avoidance in Nigerian Listed Manufacturing Companies” concluded that independence of board of directors and the separation of the roles of the board chairman and the CEO are statistically significant, while the independence of board of directors has negative significant impact on corporate tax avoidance, separation of the roles of the board chairman and the CEO has negative significant impact. On the other hand, the board size and the independence of audit committee are not statistically significant.

The results of some researches (Ferchichi Jihene, Dabboussi Moez , 2019) in a research under the title of “The Moderating Effect of Audit Quality on CEO Compensation and Tax Avoidance: Evidence from Tunisian Context” The purpose of this study is to inspect the influence of CEO return on corporate tax avoidance and examined the moderating influence of corporate governance, especially the audit quality on this association, this study found a positive and important relationship between change of CEO and tax avoidance besides to supporting the moderating influence of audit quality on the relation between change of CEO and tax avoidance, these results indicate that audit quality is effective corporate governance .

Nanik Lestan (2019), has a research under the title of “ The effect of audit quality on tax Avoidance ” concluded that the audit quality by audit office size and audit fees has negative influence on tax Avoidance, and audit tenure has positive influence on tax avoidance activities .

Mahdi Salehi et al., (2020) , in a research under the title of “The effect of auditor characteristics on tax avoidance of Iranian companies” where it investigates the effect of various factors such as audit fees ,auditor industry specialization, audit reports and auditor tenure on tax avoidance activities were examined. Where ,the study sample included listed companies in the Tehran Stock Exchange. The time period of study is six years from 2011 to 2016. Also in this study, firm size, leverage, firm age and auditor office size were controlled. Josep Garcia-Blandon et al., (2020) , in a research under the title of “Auditor-provided tax services and tax avoidance: evidence from Spain ” where, this study examine the relationship between auditor-provided tax services (APTS) and tax avoidance in Spain , This study results designate that the positive relationship between APTS and tax avoidance Spain. This result appears robust, as it holds independently of the proxy utilized for measuring tax avoidance, as well as across an array of compassion checks. This study has potentially exciting implications at both theoretical and applied levels.

It has been noted that most of the previous studies are related to developed countries and their results are conflicting, which gives importance to the necessity of studying these variables in the Egyptian business environment.

2-1 : The impact of audit quality on tax avoidance activities

The audit quality is all potentials might happen when the auditor checks the audited financial reports and finds defilement on it and reports it in the audited financial statements, Transparency as one of the significant elements in evaluating audit quality, this is produced by the existence of transparency will cause stakeholder knows information related to the taxation , In its relation the company with the taxation, the company tends to make avoidance the taxation in financial reports . For that matter, so . as to agreement information quality related to the taxation , so obligatory

from the audit office examine financial statements to guarantee the information reliability. The degree of reducing the tax avoidance is in spirit a kind of job between financial accounting standards and tax laws, so the auditors can influence the tax avoidance from the perspective of So, auditors will contribution or tax laws and financial accounting. oversee the audit client's tax avoidance, where there exist different impelling factors of auditing quality on tax avoidance, It can be explained as follows:

2-1-1: The impact of office Size on Tax Avoidance activities

Some Previous studies has examined the effect of audit quality that is profiled by the audit office size of against the tax avoidance by (Seong Ho Bae,2017) shows the quality of audit based on the audit office size negatively affects the tax avoidance activities measured by the use of the current ETR. It is supported by the study of (K. Suardana, 2014) which finds the result that the audit office size negatively affects the tax avoidance measured through the current ETR . According to (Ni Putu Sri, 2019) audit office size which was included in the Big Four class was able to provide audit quality than the Non Big Four .

The firm is more trusting of the audit conducted by the audit office size Big Four as it has more qualified skills and expertise than the audit conducted by the audit office size Non Big Four, where Audit office Size Big Four, which gained good reputation by the public that financial reports were reported with high credibility.

Therefore, this study discuss that firms using the Big Four in auditing will lower tax avoidance activities, so the first hypothesis of the current study ask is as follows :

H1a : Audit office Size has a negative effect on Tax Avoidance activities.

2-1-2: The impact of audit office Fees on Tax Avoidance Activities

The audit fees is the amount of reward gained by the audit office on the professional services in the audit process of the firms .

An audit office must maintain its independence when giving opinions, should not be influenced by how much reward the firm (client) provides. The determination of the audit process fees is determined by the audit office and the client(Firm) based on the contract, according to the time spent on the audit process, Other services provided by the audit office for the auditing (Rahmawati Hanny Y,2018) .

The study of (Josep Garcia-Blandon et al., 2020), showed that the audit fees increase was negatively affected on tax avoidance activities ,where indicated that auditors with independent competence will produce better quality audits ,therefore set a higher fees for client firms. These results indicates that the audit quality will make it difficult for the company to conduct tax avoidance, therefore the second hypothesis of this study as follows :

H1b: Audit Fees has a negative effect on Tax Avoidance activities .

2-1-3 : The impact of Audit tenure on tax avoidance activities

The Audit tenure is the term of job contract between the audit office and the firm (client) . This period of cooperation will create vicinity with management that can cause audit office tend to pay attention to the requirements of management than the public interest requirements, this is reduced the independent attitude of auditors (Carlos E. Jiménez , 2018). The independence of audit office that can be reduced due to the length of cooperation done with the firm likely affects the quality and competence of work in auditing and disclosing the errors contained in the firm's financial reports(S.Seok, 2015).

The results of some previous studies that the audit tenure positively influenced the tax avoidance (Langli J.etal.,2017) . The study of (Darwin Marasi Purba, 2018) stating that increasing the period of cooperation between audit office and the firm has made audit office have the knowledge and experience to design effective audit procedures including in terms of assisting the firm in conducting tax avoidance activities due to the special relationship between audit office and Client , Based on the results, the length of relationship between audit office and firms(Clients) will increasing tax avoidance practices , therefore this hypothesis in the study ask as follows :

H1c: Increasing the period of work of the audit office with firm has a positive effect on Tax Avoidance activities

In light of the above, the first main hypothesis can be formulated as follows :

H1: There is Effect of Audit Quality by (audit office size, audit fees and audit tenure) on tax avoidance activities

2-2 : The impact of board of directors characteristics on tax avoidance activities.

Although tax management recognizes the significance of the board as an actual control tool to decrease tax avoidance , prior studies have not done much about the relationship of board characteristics with tax avoidance . In exercising, tax management within a firm is the privilege of the Board of Directors (Pilos,N.,2017), so , the Board has an vital role in corporate governance as well as the Board's financial commitment to shareholders and the provision of strategic error and direction (Luai Aburajab et al., 2019).

The Agency's theory indicate that the job of the board of directors is an internal control tool that works to protect shareholders from the opportunistic behavior of directors and to resolve the interests of directors and sharing the relationship between the structure of the board of directors and the firm value (Bosun- Fakunle et al., 2019) , while in fact the association between the board independence, the board size and the CEO duality with tax avoidance are significant elements of the accounting literature.

So this study focus on the influence of three The board of directors characteristic variables: board composition, board independence, and CEO duality on the tax avoidance, as explained bellow.

2-2-1 : The impact of Board size on Tax avoidance activities

Some Previous studies have reported mixed and inconclusive findings on the relationship between board size and tax avoidance . The study of (Li, H.Z., Terjesen et al., 2018) , indicate that small boards contribute to good tax management practices compared to large boards, therefore the small can more effect than the large boards on tax avoidance , a fact they attribute to ease in decision making, where this ease in decision making by small boards could deny the role of managers on tax avoidance .

The study of (Luai Aburajab et al., 2019) about the effect of board of director size on corporate tax avoidance found that the level of tax management is significantly affected by board size, where they conducted a study among listed Jordanian Firms and obtained results indicating a significant positive relationship between the size of the board and tax avoidance. The attribute this to the difficulty in arriving at a consensus, thus allowing management to take decisions that benefit themselves. Similarly, Khamoussi, Neifar and Abdelaziz (2016) found a negative and significant relationship between board size and effective tax rates among American firms listed on the NASDAQ 100.

From Previous studies which discuss the effect of board directors composition on tax avoidance , where indicted the small board have Greater impact on tax avoidance compared with large board.

According to the prior discussion, the following hypotheses are developed:

H2a: There is a negative relationship between board size and tax avoidance activities.

2-2-2 : The impact of Board Independence on Tax avoidance activities

The experience of the board members affect the monitoring job mainly, besides the independence of the board from management usually provides protection for shareholders from abusive administration behaviors (Ahmed Zemzem, 2013). Some studies have exposed that the independence of the board is linked to active oversight and an active corporate governance tool (Rimi Gusliana Mais et al.,2017). while , some prior studies have showed contradictory results regarding the influence of independent directors on tax avoidance , where Several researches have showed that there is a negative relationship between the independence of board members and the tax avoidance activities (Luai Aburajab et al., 2019- Kadir, Olayiwola Abdulraheem , 2018), in contrary, some researchers suggested that the efficiency of independent board members is a positive linked with the tax avoidance activities (Grant Richardson, 2013).

The presence of independent managers is a balanced power inside the board, moreover the presence of independent managers supports the elements of good governance in the firm , the study of (Reza Jamei, 2017) found that the increase in the independence of board members leads to a decrease of tax avoidance , where the good corporate governance elements lead to a strict tax policy. Moreover, through the role of board members as supervisors of the firm's strategic decisions. Some prior studies showed that the relationship between independent directors and

their efficiency in tax management from their collected experience is negative, where the independence of managers has a negative relationship with the potential for tax avoidance (Li, Y.W., Gong et al.,2018).

Also noted that the presence of more independent external managers is negatively related with the potential for tax avoidance , and that the existence of independent boards with good governance rules significantly reduces the potential for tax avoidance (Rimi Gusliana Mais et al., 2017) . Moreover, some studies have indicated that the board members quality rather than their independence only has to do with reducing the likelihood of tax avoidance(Kiesewetter, Dirk et al., 2017).

According to this discussion, the following hypothesis is developed:

H2b: There is a negative relationship between board independence and tax avoidance activities .

2-2-3 : The impact of CEO duality on Tax avoidance activities

CEO duality means that the CEO of the firm workings as a chairperson of the board of directors. To rise the efficiency of the firm control system, the job of the CEO must be separated from the Chairman position (Luai Aburajab et al., 2019) , there are many drawbacks for CEO duality like lack of transparency, gaining more influence that leads to interest in their personal interests and makes decisions at the expenditure of shareholders, Moreover, duality may lead to more exploitation and resort to deceitful methods in the absence of regulatory controls for the decision-making process (Luai Aburajab et al., 2019).

Although the CEO commonly is not a tax expert, he can conclusively affect the companies' operational and financial strategy and tax avoidance (Gomes, A.P.M. ,2016), where top management is assumed to have access to private information relating to permissible decreases in taxable income and may uses this information in increasing tax avoidance.

Generally, the problems of the agency are more Spartan when directors

have control over the board member, this happens when there is CEO duality . As a result, CEO duality leads to a reduction of the company value, but it is categorized by lower expenses due to the possibility of tax avoidance (Minnick, K. etal. ,2010) . Based on these , the following hypothesis is developed :

H2c: There is a positive relationship between CEO duality and tax avoidance activities.

In the light of the above, the second main hypothesis can be formulated as follows :

H2:There is Effect of the board of directors characteristic by (board of directors' size, independence, and CEO duality) on tax avoidance activities.

2-3 : The impact of environmental uncertainty on tax avoidance

Activities.

There are few studies about the effect of environmental uncertainty on tax avoidance. According to the study of environmental uncertainty leads to variability in revenue growth and increases information asymmetry between managers and outside stakeholders(Henry Huang , 2017), also when firm is operating in a highly volatile environment, Managers will have the discretion to reduce such variability by managing income figures.

Some studies(Henry Huang, 2017) uses environmental uncertainty as a factor in tax avoidance , where they found that the environment with high uncertainty has a positive influence on tax avoidance.

Also, another study(Gallemore, J. et al., 2015) , found that firms operating in higher environmental uncertainty benefited from the quality of their private information in helping them avoid paying taxes . When firm facing

higher environmental uncertainty, they will have more planning activities in overcoming the uncertainty. Where ,tax planning is used as the initial plan to tax avoidance because the firm considers taxes as a significant cost and deduction of shareholder wealth for the company (Koester, A. et al., 2016)

Tax avoidance activities can make an agency problem arise because of the rising of information asymmetry. According to, it is essential to mitigate the effect of tax avoidance when firm is in a volatile environment.

The managerial ability of Board of Directors is considered an important factor because managers-specific features have an influence on economic outcomes, therefore stakeholders will trust more capable manager than incompetent manager which can mitigate tax avoidance (Henry Huang , 2017) .Some studies(Mutiara Kemala Ratu, et al., 2019) has found that managerial ability of Board of Directors has a significant negative effect on tax avoidance, where it indicates that more capable managers may play a role in mitigation tax avoidance activities (Koester, A. et al., 2016).

This study also using managerial ability to mitigation the effect of environmental uncertainty on tax avoidance activities , where prior studies has found that managerial ability has a significant negative effect on tax avoidance where it indicates that more capable managers may play a role in mitigation the opportunistic behavior of managers such as tax avoidance activities.

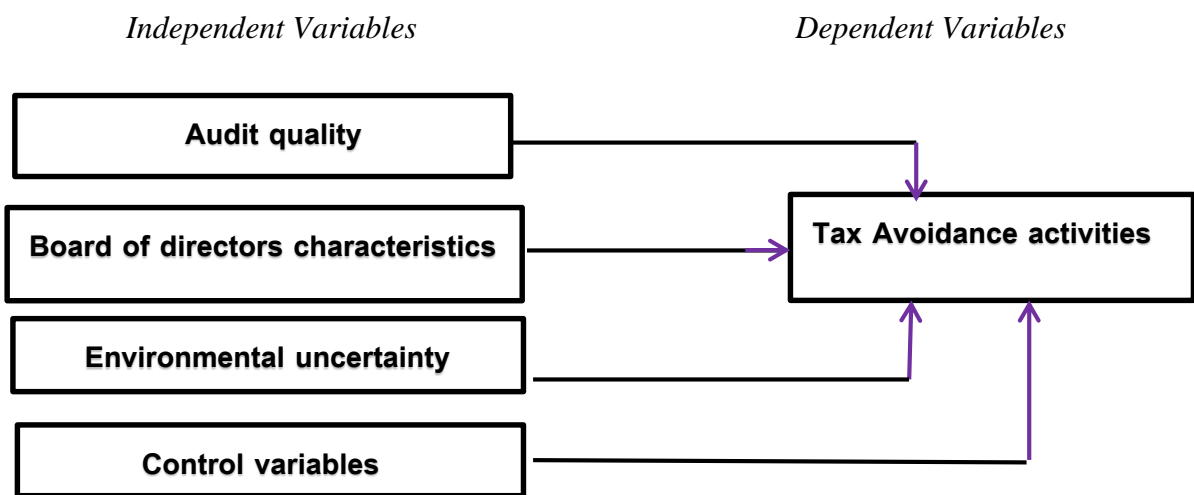
The managerial ability can also be the company option in engaging stakeholders , where more capable managers will have better ability in their business so that they will be better able to make adequate assessments and estimates (Wang, Z. et al., 2017).

Generally , when firms are in a volatile environment, they will be more

likely to engage in tax avoidance activities, the high managerial ability of the board mitigate from positive effect of environmental uncertainty on tax avoidance , Based on the above :

H3: The positive effect of environmental uncertainty on tax avoidance activities becomes weaker in light of high managerial ability.

The relationship between the independent and dependent variables can be represented by the following figure .



3: Applied study methodology

3.1: Society and study sample

This section presents the research method, which determines the sample and data sources, clarifies the variables' measurement, specifies the study models, and explains the statistical analysis tools.

The population of this study is all companies listed on the Egyptian Stock Exchange , while the sample of this study are 30 firms from the non-financial Egyptian firms as follow:

Table (1): Sample and Composition

Sector	Companies	Observations	% Observ .
Basic Resources	4	32	14%
Real Estate	3	24	10%
Food, Drinks and Tobacco	5	40	17%
Tourism and Leisure	6	48	20%
Building Materials	5	40	16%
Health and Medicine	7	56	23%
Total	30	240	100%

These companies were selected according to the following criteria:

- The non-financial firms registered in Egyptian Stock Exchange period 2019-2022.
- This firms do not delisting and do not conduct IPO through the study period .
- This firms have an annual financial reports through the study period. - This firms does not suffer any losses or Pre Tax Income (negative or zero) during the study period.
- This firms have complete data about the variables during the study period.

The researcher relied on collecting data and information about these companies during the study period on the financial statements, reports, the complementary clarifications and the reports of the Board of Directors

This is through website (Argamm.com) and direct information website (WWW.Mubasher.Info) and the site of Egypt for the dissemination of information (WWW.egidegypt.com) as well as the Egyptian Stock Exchange website (WWW.egx.com.eg)

3.2: Study variables

The dependent variables in this study is tax avoidance practices , other independent variables are audit quality , Board of Directors' Characteristics and Environmental Uncertainty. This study uses four control variables are profitability, leverage, firm size, and market to Book value of the assets. The tax avoidance is measured through an Effective Tax Rate (ETR), where the low ETR value illustrates the increasing tax avoidance practices and vice versa. The Current ETR measurement aims to view the amount of tax charges currently charged or within the period of the current year that can be seen in the firm's income statement.

Where the dependent variable, independent variables and control variables are measured according to the following table.

Table (2) Measurement of study variables

Variables	Abbreviations	Pre.	Measures used
Effective Tax Rate	ETR i,t		The tax avoidance practice in the study is measured through an Effective Tax Rate (ETR) value. The low ETR value illustrates the increasing tax avoidance practices and vice versa. The formula to determine the Current ETR value is: Current Income Tax Expense ÷ Pre-Tax Income.
Audit Office Size	Aud. Size. i,t	+	A dummy variable that equals 1 if firm i is audited by a Big 4 during year t and 0 otherwise .
Audit Fees	Aud.Fees i,t	+	the natural log of audit fees for firm i during year t
Audit Tenure	Aud.Tenu. i,t	-	a dummy variable that equals 1 if firm I is audited by the Same office for at least 3 years and 0 otherwise.
Board Size	B.Size i,t	+	Natural logarithm of the total number of directors
Independent Directors	INDEP i,t	+	% of Independent Directors in the board of director
Duality	DUA i,t	-	A variable takes the value 1 when the CEO is the chairman and 0 otherwise
Environmental uncertainty	EU i,t	-	it can use the coefficient of sales variation(year sales t - year sales t-1) ÷ assets total t, where can measure environmental uncertainty by sales volatility ,Whenever there is a major change in the coefficient of sales variation through five-year period , there is indicates environmental uncertainty(Joseph Zhang et al., 2017).
Managerial ability	M.A. i,t	+	The efficiency of the managerial ability can be measured by the ratio of net profit pre- tax to total assets .
Profitability	ROA i,t	-	profitability measured through a return on asset ratio, the formula of Return on Asset is: Net Profit for the year ÷ total Asset
Leverage	LEV i,t	-	Leverage measured through debt to asset ratio, here is the formula of debt to Asset Ratio is : Total Liability ÷ Total Asset.
Firms size	F.Size i,t	+	Measurement of firms size is measured natural logarithm total assets.
Market to Book Value	MBV	+	MBV used in controlling the growth of firms ,Ratio is measured by : the firm's market value ÷ the firm's book value

3.3 : Model specifications

To achieve the objectives of this study, the study hypotheses were formulated and tested on the sample companies, and developed several models of study hypotheses to measure the effect of independent variables on the dependent variable, as follows :

-The first model

Where measure this model effect audit quality on tax avoidance activities.

The first hypothesis postulates that there is a negative relationship between the audit office size, audit office fees and a positive relationship of Audit tenure with tax avoidance activities, and can test this hypothesis by using the following equation :

$$ETR_{i,t} = \alpha_i + \beta_1 \text{Aud O..Size}_{i,t} + \beta_2 \text{Aud.Fees}_{i,t} + \beta_3 \text{Aud.Tenu.}_{i,t} + \beta_4 \text{ROA}_{i,T} + \beta_5 \text{LEV.}_{i,t} + \beta_6 \text{F.Size}_{i,T} + \beta_7 \text{MBV}_{i,t} + \varepsilon_{i,T}.$$

- The second model

Where measure this model effect board of director's characteristics on tax avoidance activities.

The second hypothesis postulates that there is a negative relationship between the board size, board independence and a positive relationship of duality with tax avoidance, and can test this hypothesis by using the following equation :

$$ETR_{i,t} = \alpha_i + \beta_1 \text{B.Size}_{i,T} + \beta_2 \text{B.Indep}_{i,T} - \beta_3 \text{DUAL}_{i,T} - \beta_4 \text{ROA}_{i,T} - \beta_5 \text{LEV.}_{i,t} + \beta_6 \text{F.Size}_{i,T} + \beta_7 \text{MBV}_{i,t} + \varepsilon_{i,T}.$$

-The third model

Where measure this model effect environmental uncertainty and managerial ability on tax avoidance activities.

The third hypothesis postulates that there is a positive relationship between the environmental uncertainty and tax avoidance activities , but the

managerial ability will mitigate the positive effect of environmental uncertainty on tax avoidance activities, and can test this hypothesis by using the following equation:

$$ETR_{i,t} = \alpha_i - \beta_1 EU_{i,T} + \beta_2 B.M.Abili._{i,t} + \beta_3 EU * M.Abili._{i,t} - \beta_4 ROA_{i,T} - \beta_5 LEV_{i,t} + \beta_6 F.Size_{i,t} + \beta_7 MBV_{i,t} + \epsilon_{i,T}$$

3.4 : Statistical analysis of the data

The appropriate statistical methods were used to analyze the data using the Statistical Package for Social Science version (22), where it uses a program (SPSS) in applied and social studies, and the selection of appropriate methods in this analysis to test the study hypotheses as follows :

3.4.1 : Descriptive statistics of the study variables

Based on the results of the descriptive statistical test in table (3) , it is known that the amount of data used in this study is 240 observations of 30 firms through 4 years(2019 -2022) , This study tests the dependent variable (tax avoidance activities) where measured by Current ETR.

The average value of Current ETR Of the tax avoidance variables equal 0.18 and St.D (0.132) , where this indicating the current tax rate.

In the Egyptian firms(according to the study sample) through study period is lower than the Income tax payable according to Egyptian tax Law 91 of 2005 (22.5%) .

The independent variables in the study consist of three variables are audit quality , board characteristics and environmental uncertainty . The audit quality variable consists of three proxies are audit office size, audit office fees, and audit tenure , the board characteristics variable consists of three proxies are board size , board Independent and CEO duality .

Table (3) shows a summary descriptive analysis of variables, by the mean, and standard deviation of all variables , average firms using the service of Big Four of 30% which is 9 firms from 30 firms and the remainder of 70% i.e. as many as 21 firms from 30 firms not using the service of Big Four, also average of audit fees 23.09 Which means 23% of firms paid high fees, also average of audit tenure 3.7 (1.690) which means the auditor tenure is more than 3 years in study sample , moreover, the mean, standard deviation for the board size is 0.20 (0.131), while, the mean, standard deviation for the board independence is 4.21 (0.184), furthermore, 56% of the study firms have CEO duality .

Also, this study uses four control variables are, profitability, leverage, company size, and Market to Book Value, first control variable ,profitability is measured by using a return on asset (ROA) ratio which has an average value of 0.12. It can be interpreted that the average firm

can generate a net profit of 12% of the total assets, the second control

variable of leverage is measured using Debt to Asset Ratio which has an average value of 0.43 It can be interpreted that 43% of the firm's total assets can still cover debts with assets owned, the third control variable is the firm size measured through the natural logarithm of the firm's total assets, has an average value of 8.31 and the fourth control variable of MBV has an average value of 2.57.

Table (3) :Descriptive Statistics

Variable	Mean	Min.	Max.	St. Deviation
ETR	0.18	0.07	0.38	0.132
Aud.Size(BIG4)	0.30	0.18	0.64	0.129
Aud.Fee.	23.09	17.28	29.38	2.070
Aud.Ten.	3.70	1	6	1.690
B.Size	0.20	0	0.86	0.131
B.Ind.	4.21	0	0.79	0.184
DUA.	0.56	0	1	0.367
EU	0.22	0.06	0.83	0.182
M.Abili.	0.021	0.07	0.62	0.130
ROW	0.12	0.04	0.42	0.110
LEV	0.43	0.12	0.84	0.160
F.Size	8.31	5.43	11.75	1.312
MBV	2.57	1.94	5.37	1.123

3.4.2 : Search hypothesis testing

3.4.2.1 : First hypothesis test

The researcher used the appropriate statistical methods to analyze the data by using the Statistical Package for Social Science Program No. (22), where the SPSS program is used in applied and social studies.

The first hypothesis relates to the measurement of the effect of audit quality (audit office size – audit fees – audit tenure), where it states: **H1: There is an effect of the audit quality by (audit office size, audit office fees and audit tenure) on tax avoidance activities.** The effect measure of independent variables on the dependent variable by the first applied model to measure that relationship , as follow :

$$ETR_{i,t} = \alpha_i + \beta_1 Aud.Size_{i,T} + \beta_2 Aud.Fees_{i,T} + \beta_3 Aud.Tenu_{i,T} + \beta_4 ROA_{i,T} + \beta_5 LEV_{i,t} + \beta_6 F.Size_{i,T} + \beta_7 MBV_{i,t} + \epsilon_{i,T}$$

From Table (4) we present a summary of the first main hypothesis results testing between the dependent variable(ETR) , the independent variables (audit office size, audit office fees and audit tenure) and the control variables in this study.

Table(4) Results of multiple linear regression analysis (according to the first model)

Variables	Coefficient	Prob.	VIF
ETR	0.201	0.0149**	
Aud.Size(BIG 4) H1a	0.053	0.004***	1.674
Aud.Fee(H1b)	0.032	0.003***	1.601
Aud.Ten ,H1c	-0.012	0.014**	1.031
ROA	-0.082	0.0738*	1.097
LEV	-0.005	0.502	1.098
F.Size	0.051	0.120*	1.131
MBV	0.042	0.018**	1.582
R.Squared		0.623	
Adjusted R.Squared		0.539	
F.Statistic		0.000	
Std . Error		0.14	

*Note: This table presents the result of testing the first main hypothesis (H1) including Sub variables(H1a,H1b,H1c) , the dependent variable uses tax avoidance through Current ETR and the independent variable is audit size(H1a) ,audit fees(H1b) and audit tenure(H1c). The degree of significance *** 1%, ** 5%, * 10%.*

Table (4) presents the results of multicollinearity test for audit quality (audit office size, audit fees, audit tenure), and control variables (profitability, leverage, firm size, and market to book value) are smaller than 10.0, so it is concluded that this variable is not affected by multicollinearity problems.

Audited financial statements by Big 4 firms according to some trusted references are more qualified so that have a lower level of fraud than the firms of Non Big 4.

The negative relationship between the audit office size and the tax Avoidance is shown by the significance value indicating the value of 0.053 (0.004) at a significance level of 1% , its caused by the big offices (BIG 4) are more efficient and professional, thus having more knowledge on how to detect tax avoidance measures , this indicates that the firm that is audited by the (Big 4) will difficult to do tax avoidance activities. Also, the audit fees negatively affects tax avoidance activities measured using Current ETR , this is shown by the significance value indicating the value of 0.032 (0.003) at a significance level of 1% . The audit fees can improve the audit quality, making it difficult for the firm to conduct tax avoidance

greater the audit fees practices, the results of this study indicate that the established by the audit office will result in better quality of audit that will lower tax avoidance activities.

Also, audit tenure positively affect the tax avoidance activities measured by using Current ETR, where the results of the table (4) showed that the audit tenure has positively affect on the tax avoidance activities ,this is evidenced by the significance value indicating the value of 0.012 at a significance level of 5% , therefore, It can concluded that the study was

in line with the study's results of (Nanik Lestari,2019- S. Seok,, 2015) , where the longer the audit tenure, the more tax avoidance practices is increased, the value of Current ETR is getting smaller, where Long-time relationships between audit office and firms will create proximity so that they can cause audit office to pay attention to management interests and to affect the audit quality , in other words ,the longer the contract between the audit office and the firm to audit the company's accounts will produce a weak audit that will increase tax avoidance practices.

The researcher concluded from the previous table (4) that the value of the modified determination coefficient (Adjust R²= 0.539) , In addition the value of F- statistic = 0.000, which reflects the explanatory power above the mean for the regression model, where given that most of the changes can be explained from through this model . From the foregoing, we can accept the first hypothesis, which indicate the negative relationship between (audit office size , audit fees) with the tax avoidance activities and positive relationship between the audit tenure with the tax avoidance activities

3.4.2.2 : Second hypothesis test

The second hypothesis relates to the measurement impact the board of directors characteristic (the board composition ,the board independence and the CEO duality) on tax avoidance activities, where it states:

H2: There is Effect of the board of directors characteristic by (board of directors' composition, independence, and CEO duality) on tax avoidance activities.

The effect measure of independent variables on the dependent variable

by the second applied model to measure that relationship , as follow :

$$ETR_{i,t} = \alpha_i + \beta_1 B.Size_{i,T} + \beta_2 B.Independ_{i,T} + \beta_3 DUA_{i,T} + \beta_4 ROA_{i,T} + \beta_5 LEV_{i,t} + \beta_6 F.Size_{i,T} + \beta_7 MBV_{i,t} + \varepsilon_{i,T}$$

From Table (5), it can present a summary of the second main hypothesis results testing between the dependent variable(ETR) , the independent variables(board of directors' size, independence, and CEO duality) and the control variables in this study.

Table(5) Results of multiple linear regression analysis (according to the second model)

Variables	Coefficient	Prob.	VIF
ETR	0.211	0.013**	
B.Size ,H2a	0.051	0.007**	1.749
B.Independ ,H2b	0.093	0.063*	1.684
DUA ,H2c	-0.087	0.019**	1.631
ROA	-0.082	0.073*	1.097
LEV	-0.005	0.502	1.098
F.Size	0.051	0.120*	1.131
MBV	0.042	0.018**	1.582
R.Squared		0.312	
Adjusted R.Squared		0.261	
F.Statistic		0.000	
Std . Error		0.27	

Note: This table presents the result of testing the second main hypothesis (H2) including Sub variables(H2a,H2b,H2c) , the dependent variable uses tax avoidance through Current ETR and the independent variable is B.Size (H2a) , B.Independ.(H2b) and

DUA.(H2c). The degree of significance *** 1%, ** 5%, * 10%

From table (5) , we find that the negative relationship between the board size and the tax Avoidance is show by the significance value indicating the value of 0.051 (0.007**) at a significance level of 5% , this indicates that the firm has a big number of the Board of Directors, so will difficult to do tax avoidance activities .

Also, the board independence negatively affects on tax avoidance activities measured using Current ETR , this is show by the significance value indicating the value of 0.093 (0.063**) at a significance level of 10%, this indicates that the firm has a big number of outside members in the Board of Directors, will made difficult for the firm to conduct tax avoidance practices.

Also, CEO duality positively affect the tax avoidance activities measured by using Current ETR, where the results of table (5) showed that the CEO duality has positively effect on the tax avoidance activities ,this evidenced by the significance value indicating the value of 0.087 at a significance level of 5% , therefore, It can concluded that the study was in line with the study's results of (Li, H.Zet al., 2018 - Ahmed Zemzem et al. , 2013) , when the Occupy the CEO for the board membership , the more tax avoidance practices is increased, the value of Current ETR is getting smaller, where the membership of the Board of Directors helps of the executive director to encourage management to increase tax avoidance practices.

We note that the Adjusted R.Squared (R2 Adj.) is 0.261 which mean 26.1% of effective tax rate (ETR) variability can be explained by this independent variables. We also note that the lowest p-value from this variables is (B.Size) with p-value equals to 0.007. Furthermore, We note that there is a negative relationship between some of the control variables (F. size - MBV) and tax avoidance activities and a positive relationship between (ROA- LEV) with tax avoidance activities.

The researcher concludes from the previous table (5) that the value of the modified determination coefficient (Adjusted R2 = 0.261) and the value of F- statistic = 0.000.

From the foregoing, can accept the second hypothesis, which indicate the negative relationship between (board size , board independence) with the tax avoidance activities and positive relationship between the CEO duality with the tax avoidance activities .

3.4.2.3 : Third hypothesis test

The third hypothesis relates to the measurement impact the environmental uncertainty and managerial ability on tax avoidance activities , where it states :

H3: The positive effect of environmental uncertainty on tax avoidance activities becomes weaker in light high managerial ability.

The effect measure of independent variables on the dependent variable by the third applied model to measure that relationship , as follow :

$$ETR_{i,t} = \alpha_i + \beta_1 EU_{i,T} + \beta_2 B.M.Abili._{i,t} + \beta_3 EU * M.Abili._{i,t} + \beta_4 ROA_{i,T} + \beta_5 LEV_{i,t} + \beta_6 F.Size_{i,T} + \beta_7 MBV_{i,t} + \varepsilon_{i,T}.$$

From table (6) , we present a summary of the third hypothesis results testing between the dependent variable(ETR) , the independent variables(The environmental uncertainty ,The managerial ability) and the control variables in this study.

Table(6) Results of multiple linear regression analysis (according to the third model)

Variables	Coefficient	Prob.	VIF
ETR	0.127	0.019**	
EU	-0.027	0.023**	1.863
M.Abili.	0.071	0.008***	1.021
EU* M.Abili.	0.058	0.012**	1.472
ROA	-0.082	0.073*	1.097
LEV	-0.005	0.502	1.098
F.Size	0.051	0.120*	1.131
MBV	0.042	0.018**	1.582
R.Squared		0.169	
Adjusted R.Squared		0.136	
F.Statistic		0.000	
Std . Error		0.31	

Note: This table presents the result of testing the third hypothesis (H3), the dependent variable uses tax avoidance through Current ETR and the independent variable is EU , M.Abili. and EU M.Abili. The degree of significance(*** 1%, ** 5%, * 10%)*

To test whether environmental uncertainty and board managerial ability impact effective tax rate , From table (6) we find the positive relationship between the environmental uncertainty and the tax Avoidance activities is show by the significance value indicating the value of 0.027 (0.023**) at a significance level of 5% , this indicates that the increasing volatilities in the environment (the environmental uncertainty) , will lower the effective tax rate(ETR), and thus increasing the tax avoidance activities.

Also, the board managerial ability negatively affects tax avoidance activities measured using current ETR , this is show by the significance value indicating the value of 0.071 (0.008) at a significance level of 1%, this indicates, if the firm has a strong Board with high managerial ability and more efficient and professional, thus having more knowledge on how to detect tax avoidance measures , thus will made difficult for the firm to conduct tax avoidance practices . On the impact of environmental uncertainty and managerial ability

together (EU* M.Abili.) on tax avoidance practices , Through the table (5), we find the negative relationship between the (EU* M.Abili.) and the tax Avoidance is shown by the significance value indicating the value of

0.058 (0.012) at a significance level of 5% , this indicates that the higher managerial ability of the Board of Directors will mitigate the positive effect of environmental uncertainty on tax avoidance activities, this study results was in line with the study's results of (Mutiara Kemala Ratu et al., 2019 - Henry Huang et al. , 2019) .

We note that the Adjusted R. Squared (R2 Adj.) is 0.136 which mean 13.6% of effective tax rate (ETR) variability can be explained by this independent variables. .

The researcher concludes from the previous table (6) that the value of the modified determination coefficient (Adjusted R2 = 0.136) and the value of F- statistic = 0.000 .

From the foregoing, can accept the third hypothesis, which indicate the positive relationship between environmental uncertainty with the tax avoidance activities , but the higher managerial ability will mitigate the positive effect of environmental uncertainty on tax avoidance activities

4- Conclusions and Suggestions

This study examines the relationship between audit quality, board characteristics and environmental uncertainty on tax avoidance at Egyptian firms. Using a study sample of 30 firms during the period 2019-2022, we used a regression model to examine the effect of audit quality(H1) by (audit office size- audit fees- audit tenure) , board characteristics (H2) by(board size -board independence-CEO duality) and environmental uncertainty (H3) on the tax avoidance activities ,

consistent with the previous studies conducted in the context of developed countries.

From the applied study ,its found a negative relationship between The audit quality based on(audit office size – audit fees) with tax avoidance activities , this means that the audit office size is large(BIG4) with the greater the audit fees set by the audit office ,this will produce good audit quality, therefore decreasing the tax avoidance activities , also there is

positive relationship between the audit tenure and tax avoidance activities , where the contract length of audit office is effect on its independence, thereby increasing the tax Avoidance activities . Also, Its found a negative relationship between board characteristics(board size-board independence) with tax avoidance activities, while there is positive relationship between the CEO duality and tax avoidance activities, this results indicate that the presence of external members in the Board of Directors reduces the agency problem and therefore decreasing the tax avoidance activities, also this study documents a negative relationship between board independence and tax avoidance activities , where this finding is consistent with the agency theory expectation.

Also, Its found that the results of the third hypothesis testing as predicted, whereas environmental uncertainty proved to be significantly positive to affect tax avoidance activities , where a volatile environment will lead to increased risks ,this risks that leads to tax avoidance activities, while Managerial ability will significantly mitigate the positive effect of environmental uncertainty on tax avoidance activities , In addition to some control variables (the return on assets ROA - leverage) is positively

In the end can say ,the governance associated with the tax avoidance. Mechanisms (audit quality- board characteristics) can be used as a way of addressing agency issues and decreasing the tax avoidance practices that are conducted in a volatile environment (environmental uncertainty).

There are some limitations in this study that can affect the results of the study and which could open research of the future studies , first, This study is limited to a small sample of Egyptian firms (30 firm only Because of the difficulty in obtaining data) . Secondly, the study period was done only in 2019-2022,it is a relatively short period ,thus it could not be generalized its results . Thirdly, this study used some independent variables but not all of them of the audit quality and board characteristics , Finally, developing countries substantially vary in terms of tax policies and

therefore, the generalizability of our findings on all developing countries could be questionable . There are

some suggestions for further studies on expanding firm

Samples , and Add a longer span of time to measure the direct and

indirect effect of the firm's tax avoidance activities .

Also additional other variables can be added to this study models and can use data sets from different developing countries for future comparative studies.

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