

The Impact of Applying Income Taxes Standard (24) on Tax Avoidance Practices in Multinational Companies: An Empirical Study

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Abstract:

The aim of this study is to measure the impact of applying Income Taxes Standard (24) on tax avoidance practices in multinational companies. The researchers relied on a sample consisting of 13 multinational companies listed on the Egyptian Stock Exchange during the period from 2016 to 2022. To achieve this, the researchers relied on a sample of 13 multinational companies listed on the Egyptian Stock Exchange during the period from 2016 to 2022. The data were analyzed using descriptive statistics, Pearson Correlation Matrix, Ordinary Least Square, and Panel-correlated Standard Errors. The results revealed a positive relationship between applying income taxes standard (24) and tax avoidance practices in multinational companies. The results indicate that increasing the level of tax disclosure is associated with improving the effective tax rate, thereby enhancing tax transparency in these companies. However, the analysis also showed that there is a turning point at which excessive increase in tax disclosure negatively affects tax effectiveness, indicating the existence of an optimal level of disclosure that must be considered. These results highlight the importance of balanced implementation of taxes standard in multinational companies to enhance tax efficiency and mitigate tax avoidance practices, demonstrating the need for well-thought-out tax strategies that contribute to achieving tax compliance and transparency.

Keywords: Income Taxes Standard – Tax Avoidance – Multinational Companies.

المستخلص :

الهدف من هذه الدراسة هو قياس أثر تطبيق معيار ضرائب الدخل (24) على ممارسات التجنب الضريبي في الشركات متعددة الجنسيات. وقد اعتمدت الباحثة في سبيل تحقيق ذلك على عينة مكونة من 13 شركة من الشركات متعددة الجنسيات المدرجة بالبورصة المصرية خلال الفترة من عام 2016 وحتى عام 2022. وقد قامت الباحثة بتحليل البيانات باستخدام اساليب الاحصاء الوصفي، ومعامل ارتباط بيرسون، والانحدار الخطي المتعدد. وقد أظهرت نتائج التحليل الإحصائي أن هناك علاقة موجبة بين تطبيق معيار الضرائب على الدخل (24) وممارسات التجنب الضريبي في الشركات متعددة الجنسيات. تُشير النتائج إلى أن زيادة مستوى الإفصاح عن الضرائب يرتبط بتحسين معدل الضريبة الفعلي، مما يعزز الشفافية الضريبية في هذه الشركات. ومع ذلك، أظهر التحليل أيضاً أن هناك نقطة تحول تبدأ عندها الزيادة المفرطة في الإفصاح عن الضرائب بالتأثير سلباً على فعالية الضريبة، مما يشير إلى وجود حد أمثل لمستوى الإفصاح يجب مراعاته. وتوضح هذه النتائج أهمية تطبيق متوازن لمعيار الضرائب في الشركات متعددة الجنسيات لتعزيز الفعالية الضريبية والحد من ممارسات التجنب الضريبي، مما يوضح مدى الحاجة إلى استراتيجيات ضريبية مدروسة تساهم في تحقيق الامتثال الضريبي والشفافية.

1. Introduction:

The evolution of accounting standards, especially in the context of multinational companies aligning with international norms, is crucial. This study focuses on the impact of applying Egyptian Accounting Standard No. 24 (EAS 24) on tax avoidance practices in these companies, exploring the link between strict accounting regulations and corporate tax policies. Significant reforms in Egyptian accounting, aimed at transparency and comparability, involve adopting EAS 24, which aligns with International Accounting Standard No. 12 on income tax accounting, especially deferred taxes, impacting financial management and disclosures (Elbannan, 2011; Gouda, 2020; Wong, 2006; Horngren et al., 2014).

Tax avoidance, a legal but complex aspect of corporate finance involving strategies to minimize tax liabilities, is under scrutiny. Researchers like Lanis and Richardson (2015) and Shin and Woo (2017) examine these strategies, raising questions about their ethical implications and economic impact. EAS 24's stringent reporting requirements on income taxes, particularly deferred taxes, may limit tax avoidance opportunities by demanding a more accurate depiction of tax obligations, thus potentially curbing aggressive tax planning in multinational companies listed on the Egyptian stock exchange.

2. Literature Review and Hypothesis Development:

2.1. First Group: Studies that dealt with the income taxes standard.

Research on International Accounting Standard 12 (IAS 12) on Income Taxes presents a spectrum of global perspectives. Studies by Kraal et al., (2015) and Chiladze (2018) express skepticism toward IAS 12, citing complexities and doubts about its practical benefits, particularly in deferred tax accounting. These concerns stem from difficulties in aligning IAS 12 with local practices and its impact on financial reporting. Conversely, studies by Allah and Al-Khalidi (2022) and Danescu and Soare (2022) offer a positive outlook, showcasing improvements in financial reporting within the Iraqi banking sector and emphasizing the role of IAS 12 in enhancing the accuracy of financial statements through better deferred tax accounting. Edeigba (2022) and Edeigba et al., (2023) explore the unintended consequences of IAS 12, notably the significant shifts in deferred tax values post-adoption, affecting financial reporting and market valuation. This highlights the complex interplay between tax and accounting rules under IAS 12.

Overall, the body of research on IAS 12 illustrates a dynamic dialogue among practitioners, scholars, and standard-setters, reflecting a range of experiences from skepticism to positive impacts, and emphasizing the need for ongoing engagement to address the standard's complexities.

2.2. Second Group: Studies addressed tax avoidance practices in multinational companies.

Rego (2003) found a complex relationship between company size, profitability, and tax rates, suggesting that larger, more profitable MNCs are more adept at reducing their effective tax rates, demonstrating economies of scale in tax planning. Otusanya (2011) revealed that MNCs in Nigeria employ various tax avoidance and evasion strategies, significantly reducing government revenues. This study highlighted the role of offshore financial centers and local business elites in facilitating these practices, calling for tax reforms to address these issues. Oats and Tuck (2019) explored the effectiveness of transparency measures like country-by-country reporting and found that these initiatives might not be as effective in mitigating tax avoidance as anticipated due to potential dysfunctional consequences. Lenz (2020) provided an ethical analysis of aggressive tax avoidance strategies, suggesting such practices might be immoral and violate the moral duty to adhere to both the letter and the spirit of tax laws. Beer et al., (2020) synthesized literature on the mechanisms of corporate tax avoidance, finding a significant relationship between corporate tax rates and pre-tax income, and calling for further research to fully understand tax avoidance strategies. Oktaviani and Wulandari (2023) investigated factors influencing tax avoidance in Indonesian MNCs, concluding that being a multinational corporation has a significant impact on tax avoidance, whereas foreign ownership, foreign directors, and transfer pricing do not significantly affect tax avoidance practices.

These studies collectively offer a comprehensive view of tax avoidance practices among MNCs, ranging from the efficiency of tax planning in large corporations, the strategies that reduce government revenues, the limited effectiveness of transparency measures, to the ethical implications of aggressive tax avoidance. The findings underscore the complexity of tax avoidance practices, the need for more effective measures to curb these practices, and the ethical considerations that should guide corporate behavior in tax matters.

2.3. Third Group: Studies addressed the impact of applying IFRS/IAS on tax avoidance practices.

Braga (2017) and Huang et al., (2018) both find that IFRS adoption is associated with increased levels of tax avoidance, especially in environments with higher book-tax conformity and in countries with significant differences between domestic standards and IFRS. Conversely, Okafor et al., (2019) report a reduction in tax avoidance in Canada shortly after IFRS adoption, suggesting that the effects of IFRS on tax avoidance can vary. Sun et al., (2022) further elaborate that the impact of IFRS on tax avoidance is conditional, influenced by firms' initial levels of tax avoidance and institutional contexts. While, Namazi and Esmaeilpour (2020) and Hassan (2020) highlight the nuanced effects of IFRS adoption, with findings indicating that full adoption of IFRS may lead to reduced tax avoidance activities, particularly in Iran and the Gulf region economies.

These observations collectively underscore the complex and varied impact of IFRS adoption on corporate tax avoidance, influenced by a mix of regional, institutional, and initial conditions, pointing towards the need for contextual understanding and policy adaptation. As revised in the previous studies, exploring the relationship between Income Taxes Standard No. 24 and tax avoidance practices in multinational companies reveals a gap in the current academic literature. The search conducted did not yield specific studies that directly address this topic. However, there are related studies that touch upon aspects of tax avoidance and reporting practices in multinational companies, which may offer some contextual understanding, so the research hypothesis is formulated as follows:

H0: There is no relationship between applying Income Taxes Standard No. 24 and tax avoidance practices in multinational companies.

3. The Theoretical Framework:

3.1. History of Income Taxes Standard No. (24):

Egyptian Accounting Standard No. 24 (Income Taxes) was initially issued in 2006 and subsequently amended in 2015 and 2019. Key updates included guidance on the recognition of deferred tax assets, particularly regarding deductible temporary differences arising from research costs. Despite these changes, the standard has seen relatively few significant amendments since its introduction. In contrast, Egypt's Income Tax Law No. 91 of 2005 has undergone numerous amendments in a relatively short period, reflecting adjustments to align with evolving financial, economic, and tax environments.

3.2. Objective of Income Taxes Standard No. (24):

The income taxes standard aims to determine the accounting treatment of income taxes in how current and deferred tax consequences are accounted for:

-The future recovery or payment of the book values of assets or liabilities as shown in the Entity's Statement of Financial position.

-Transactions and other events in the current period that have been recognized in the entity's financial statements.

EAS No. (24) also clarified that one of the conditions for the recognition of the asset or liability in the financial statements is an entity's expectation to recover or settle the book value of that asset or liability also requires that tax effects of transactions and other events be accounted for by the fact that transactions and other events recognized in the income statement are also recognized in the income statement, In contrast, transactions and other events that are recognized outside the income statement either in other comprehensive income or directly in equity are also recognized directly by their tax effects outside the income statement.

3.3. Scope of Income Taxes Standard No. (24):

EAS No. 24 applies in income taxes accounting, which includes all domestic and foreign taxes levied on taxable profit and also includes other income taxes such as withholding taxes, which are payable by a subsidiary, associate, or joint venture on distributions to the reporting entity.

EAS No. 24 does not apply to the accounting treatment of government grants or investment tax credits. However, EAS applies to temporary differences that may arise from such grants or investment tax credits. Also, the standard contains accounting treatments and examples of certain tax practices that may be unmatched in Egypt's tax legislation. However, they are found in the tax legislation of other world regions and have been retained in the standard as in the International Accounting Standard No. 12 to identify such treatments as guidance for entities with foreign subsidiaries operating outside Egypt that are committed to applying this tax legislation.

3.4. Tax avoidance:

Khelil and Khlif (2023) defined tax avoidance as an attempt made by a company's management to reduce tax obligations. The act of using legal methods to reduce the tax amount in accordance with specific provisions in the tax code. (Payne and Raiborn, 2018)

Researchers around the world are chasing an important question: What are the determinants of companies' success? One element through which

companies' financial performance can be judged is profitability, where profitability is perhaps one of the most important reasons why companies survive in globalization, trade liberalization and privatization. It can be considered one of the most important indicators of companies' success. (Lanis et al., 2022)

3.5. Advantages of Tax Avoidance:

Investing in tax avoidance practices can significantly benefit organizations by reducing tax liability, thus enhancing after-tax cash flow and lowering overall expenses (Rego and Wilson, 2012). This increase in after-tax income can lead to a higher firm value, improved investor returns, and more opportunities for reinvestment, ultimately boosting shareholder wealth through increased dividends and stock value (Kothari, 2001). Additionally, the savings from avoided taxes can be allocated towards productive corporate initiatives like high-value projects, dividend payments, debt reduction, or other growth-enhancing activities, thereby improving the firm's financial position and potential for expansion (Wang et al., 2020).

3.6. Disadvantages of Tax Avoidance:

Investing in tax avoidance practices can pose several disadvantages for organizations, potentially deterring their pursuit of such strategies. Tax avoidance can reduce government revenue, affecting public services like education and healthcare. It can also unfairly increase the tax burden on those not using avoidance tactics and raise administrative costs for enforcement. Aggressive avoidance strategies can erode the tax base and damage public trust in the system. Developing countries may suffer as multinational firms avoid taxes, and the resulting complex tax regulations can increase compliance costs and uncertainty for everyone (Piketty, 2014).

3.7. Theories That Explain Tax Avoidance.

Agency Theory suggests that tax avoidance can be viewed as a principal-agent problem, where conflicts arise between owners and managers over the desired level of tax avoidance, driven by informational asymmetries and managerial opportunism (Slemrod, 2004; Desai and Dharmapala, 2006; Kovermann and Velte, 2019). To mitigate such conflicts and align interests, corporate governance mechanisms like independent boards and performance-based compensation are commonly implemented (Wahab and Holland, 2012; Shi et al., 2020).

Stakeholder Theory adds a layer by considering the impact of various stakeholders (clients, employees, lenders, etc.) on tax avoidance practices,

suggesting that the dominant stakeholders' preferences, as influenced by corporate governance structures, will dictate the firm's tax avoidance level (Chen and Chu, 2005; Kovermann and Velte, 2019). The theory posits that companies with high corporate social responsibility awareness are likely to engage less in aggressive tax avoidance practices (Gao et al., 2014).

These theories together underscore the multifaceted nature of tax avoidance, influenced by the dynamics between owners and managers, stakeholder influence, corporate governance mechanisms, and social responsibility considerations.

4. Empirical Study:

The researchers examine the validity of the developed hypothesis and models concerning the impact of income taxes standard (24) on tax avoidance practices in multinational companies listed on the Egyptian Stock Exchange. Thus, this section presents data preprocessing, descriptive statistics, diagnostic statistics, and hypothesis testing. Moreover, STATA 17 is used to conduct all the statistical analyses necessary to examine the research hypothesis.

4.1. Research Methods:

Research methods are considered an important part of the empirical study. They include specifying the population, sample type and size, the period of the study, data collection sources, variables definitions and measurements, the types of used statistical analysis techniques, and then designing the proposed research model.

4.1.1. Research Population and Sample:

The population consists of multinational companies listed on the Egyptian Stock Exchange. The sample consists of 13 multinational companies listed on the Egyptian Stock Exchange over the period from 2016 to 2022.

4.1.2. Methods of Data Collection and Analysis:

The research depends on the secondary data collected from the multinational companies' annual financial statements reports over the period from 2016 to 2022, which were available through the Egyptian Stock Exchange website (www.egx.com.eg), Mubasher info (www.mubasher.info).

4.1.3. The Research Variables and Their Measures:

According to the investigation and analysis of prior studies, the research variables can be specified as follows:

Dependent Variable: Tax Avoidance.

The measure of tax avoidance is generally based on the data contained in the financial statements. Many studies (e.g., Cook et al., 2008; Chen et al., 2010; Hanlon and Heitzman, 2010; Kim et al., 2011; Armstrong et al., 2012) have indicated that ETR can be relied upon when measuring the level of tax avoidance. The Current Effective Tax Rate (C_ETR) is calculated by dividing current tax by pre-tax accounting income. Thus, this measure reflects the company's tax deferral strategies because it uses income tax expenses for the current year and not total income tax expenses (current and deferred) and is therefore distinct from GAAP ETR, which uses total income tax expenses. A lower current ETR suggests a lower tax burden relative to pre-tax accounting income, indicating potential tax avoidance activities. (Salihu et al., 2013).

Independent variables: Income taxes standard (24).

A structured content analysis of the company's annual reports can be implemented to measure the level of applying the Egyptian Accounting Standard (EAS) 24 related to income taxes in multinational companies. This technique entails a detailed examination of the annual reports to spot specific disclosures that reflect compliance with the various requirements of EAS 24. During the content analysis, each identified item relevant to EAS 24 was checked for its disclosure within the annual reports. This process is operationalized by assigning a score of 1 to each item if it is disclosed, indicating applying, and a score of 0 if it is not disclosed, indicating non-applying.

Indicators for measuring the level of applying of the Egyptian accounting standard (24) of income taxes are as follows (Ibrahim, 2017):

No.	Table (4/1) Indicators for Measuring Income Taxes Standard (24)
1.	Recognition of deferred tax assets and liabilities resulting from depreciation or differences between accounting and tax bases, such as unrecognized fair value estimates for tax purposes, when recognition criteria are met - using the applicable tax rate.
2.	Recognition of tax assets (their utilization) resulting from the creation of provisions (their use or the absence of their purpose) when recognition criteria are met or disclosing reasons for non-recognition.
3.	The correctness of using the tax rate to measure deferred tax assets and liabilities.
4.	Disclosure of the nature of deferred tax assets and the evidence relied upon for recognition.
5.	Offsetting deferred tax assets against deferred tax liabilities.
6.	Disclosure of the components of deferred tax assets and liabilities.

7.	Separate disclosure of the main components of the tax burden or income as per paragraph (80) of the standard.
8.	Proper presentation of deferred tax assets and liabilities in the financial position statement as non-current items.
9.	Explaining the relationship between the tax burden (income) and accounting profit in a numerical reconciliation that links the tax burden (income) to the accounting profit multiplied by the applicable tax rate.
10.	Recognition of deferred tax within comprehensive income items (or directly within equity if related to items recognized within other comprehensive income or equity).
11.	Recognition of tax assets resulting from carried forward tax losses when recognition criteria are met or disclosing reasons for non-recognition - provided that there are tax losses.

4.2. Descriptive Statistics

The importance of descriptive statistics stems from the simplicity of presenting the basic properties of a large set of observations. Also, the appropriate statistical techniques used to analyze the data are chosen based on the underlying characteristics of the data included in the study sample.

The main statistical features of all continuous variables used to examine the impact of applying income taxes standard (24) on tax avoidance practices in multinational companies listed on the Egyptian Stock Exchange are shown in Table (4/2).

Table (4/2) Descriptive Statistics					
Variable	Mean	Std. Dev.	Min	Max	Observations
C_ETR	0.262	0.118	0.029	0.480	N = 67
Dis	0.839	0.124	0.609	1.000	N = 67
Size	22.916	1.573	19.536	25.459	N = 67
Tang	0.361	0.230	0.030	0.922	N = 65
Lev	0.266	0.198	0.000	0.779	N = 66
ROA	0.067	0.085	-0.020	0.330	N = 67
NDTS	0.025	0.023	0.001	0.101	N = 67
CH	0.115	0.087	0.010	0.397	N = 67
FCFF	0.023	0.090	-0.270	0.261	N = 67
Cpx	0.039	0.034	0.001	0.151	N = 67
Age	16.507	7.842	0.000	28.000	N = 67

The above table (4/2) shows:

- The current effective tax rate (C_ETR) averages 26.2%, slightly above Egypt's 22.5% tax rate, suggesting minimal tax avoidance with uniform practices among listed multinationals.
- Income tax disclosures (Dis) average 83.9%, indicating consistent adherence to tax standard 24 across these firms.
- Average firm size (Size) is 22.9, showing uniformity among listed multinationals in size.
- Tangibility (Tang) of assets averages 36.1%, with varied asset structures across firms but consistency within each firm.
- The leverage ratio (Lev) at 0.261 indicates low reliance on debt, with varied capital structures across firms but consistency within each.
- Return on assets (ROA) averages 6.7%, showing moderate profitability with variations across firms but consistency within each.
- Non-debt tax shields (NDTS) average 0.025, with diverse strategies across firms but uniformity within each.
- Cash holdings (CH) represent 11.5% of total assets, with significant variation across firms but consistency within each.
- Free cash flow (FCFF) averages 2.3%, with high variability both across and within firms.
- Capital expenditures (Cpx) average 3.9% of total assets, with diverse levels across firms but consistency within each.
- The average firm age (Age) is 16.5 years, showing uniformity in the age of listed multinationals.

4.3. Pearson's Correlation Test:

Pearson's correlation coefficient shows the direction and the strength of the linear association between any two variables included in the current research. Moreover, Pearson's correlation coefficients are used to detect the possible multicollinearity between any two independent variables included in the same regression model. Table (4/3) shows Pearson's correlation coefficients for all the study variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) C_ETR	1.000										
(2) Dis	0.433***	1.000									

	(0.000)										
(3) Size	0.130	0.119	1.000								
	(0.293)	(0.339)									
(4) Tang	-0.242*	-0.155	-0.518***	1.000							
	(0.053)	(0.218)	(0.000)								
(5) Lev	0.484***	0.245**	0.461***	-0.156	1.000						
	(0.000)	(0.047)	(0.000)	(0.219)							
(6) ROA	-0.318***	-0.158	-0.384***	0.067	-0.260**	1.000					
	(0.009)	(0.202)	(0.001)	(0.598)	(0.035)						
(7) NDTs	0.125	0.054	-0.238*	0.526***	0.153	0.078	1.000				
	(0.315)	(0.665)	(0.052)	(0.000)	(0.221)	(0.530)					
(8) CH	-0.003	-0.059	-0.328***	0.158	-0.226*	0.466***	0.137	1.000			
	(0.982)	(0.634)	(0.007)	(0.208)	(0.068)	(0.000)	(0.269)				
(9) FCFE	-0.222*	-0.116	-0.227*	0.240*	-0.211*	0.576***	0.330***	0.351***	1.000		
	(0.071)	(0.350)	(0.065)	(0.054)	(0.089)	(0.000)	(0.006)	(0.004)			
(10) Cpx	0.126	0.045	-0.113	0.348***	0.137	0.140	0.491***	0.411***	-0.072	1.000	
	(0.310)	(0.717)	(0.364)	(0.004)	(0.272)	(0.258)	(0.000)	(0.001)	(0.562)		
(11) Age	-0.189	-0.270**	0.328***	-0.080	-0.138	-0.565***	-0.390***	-0.469***	-0.290**	-0.443***	1.000
	(0.125)	(0.027)	(0.007)	(0.529)	(0.268)	(0.000)	(0.001)	(0.000)	(0.017)	(0.000)	
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$											

From the previous table (4/3), it can be concluded that:

- There is a positive significant direct association between current ETR and book tax difference ($r = 0.320$; $p\text{-value} = 0.000$). which means these measures are complementary measures of tax avoidance for multinational companies listed on the Egyptian Stock Exchange. Thus, the impact of income taxes standard (24) on tax avoidance practices in multinational companies listed on the Egyptian Stock Exchange may be different.
- There is a positive significant direct association between tax avoidance as measured by current ETR and income tax disclosures according to standard (24) ($r = 0.433$; $p\text{-value} = 0.000$). which means income tax disclosures according to standard (24) negatively impact tax avoidance.
- There is no significant direct association between tax avoidance as measured by current ETR and firm size ($r = 0.130$; $p\text{-value} = 0.293$).
- There is a negative significant direct association between tax avoidance as measured by current ETR and asset structure as measured by assets tangibility ($r = -0.242$; $p\text{-value} = 0.053$). which means assets tangibility positively impacts tax avoidance.
- There is a positive significant direct association between tax avoidance as measured by current ETR and capital structure as measured by leverage ($r = -0.484$; $p\text{-value} = 0.000$). which means leverage negatively impacts tax avoidance.

- There is a negative significant direct association between tax avoidance as measured by current ETR and firm profitability as measured by ROA ($r=-0.318$; $p\text{-value}=0.009$). which means firm profitability positively impacts tax avoidance.
- There is no significant direct association between tax avoidance as measured by current ETR and non-debt tax shield ($r= 0.125$; $p\text{-value}=0.315$).
- There is no significant direct association between tax avoidance as measured by current ETR and cash holding ($r= -0.003$; $p\text{-value}=0.982$).
- There is a negative significant direct association between tax avoidance as measured by current ETR and free cash flow ($r=-0.222$; $p\text{-value}=0.071$). which means free cash flow positively impacts tax avoidance.
- There is no significant direct association between tax avoidance as measured by current ETR and capital expenditure as measure for opportunity growth ($r= 0.126$; $p\text{-value}=0.310$).
- There is no significant direct association between tax avoidance as measured by current ETR and firm age ($r=-0.189$; $p\text{-value}=0.125$).

4.4. Testing Hypothesis:

The Impact of Income Taxes Standard (24) on Tax Avoidance as Measured by Current Effective Tax Rate Using OLS.

The static regression model used to study the impact income taxes standard (24) on tax avoidance as measured by current effective tax rate using OLS is presented as follows:

$$C_ETR_{i,t} = \beta_0 + \beta_1 Dis_{i,t} + \beta_2 Size_{i,t} + \beta_3 Tang + \beta_4 Lev_{i,t} + \beta_5 ROA_{i,t} + \beta_6 NDTs_{i,t} + \beta_7 CH_{i,t} + \beta_8 FCFF_{i,t} + \beta_9 Cpx_{i,t} + \beta_{10} Age_{i,t} + \varepsilon_{i,t}$$

Where, $C_ETR_{i,t}$ is the current effective tax rate, measured as current taxes divided by pre-tax accounting income.

$Dis_{i,t}$ is disclosure of income taxes standard items, calculated using content analysis. 1 if the item is disclosed and 0 otherwise.

$Size_{i,t}$ is the size of the firm, typically measured as the natural logarithm of total assets.

$Tang$ is the tangibility of assets, measured as net property, plant, and equipment divided by total assets.

$Lev_{i,t}$ is the leverage, measured as total Liabilities divided by total assets.

$ROA_{i,t}$ is the return on assets, computed as net income divided by total assets.

$NDTs_{i,t}$ is the non-debt tax shield, which can be calculated as depreciation divided by total assets.

$CH_{i,t}$ is the change in cash holdings, measured as the change in cash and cash equivalents to total assets.

FCFF_{i,t} is the free cash flow to the firm, calculated as free cash flow to firm divided by total assets.

Cpx_{i,t} is capital expenditures, often measured as capital expenditures divided by total assets.

Age_{i,t} is the age of the firm, typically the number of years since the firm's initial public offering.

In which i relates to each firm (i=1...13) t = each year (2016-2022), the error term is represented by ε_{it} . Finally, all variables are computed based on annual report data.

Testing the validity of the developed research hypothesis concerning the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate for multinational companies listed on the Egyptian Stock Exchange starts by conducting an initial pooled OLS regression, and conducting some goodness of fit tests to determine whether the model best fits the sample data, or some statistical issues need to be solved before ensuring the validity and the reliability of the model. Therefore, the results of the initial model cannot be considered reliable until the model's goodness of fit is confirmed. There are some goodness of fit tests that should be conducted to confirm that the hypothesized model applied in the current study best fits the sample data. These tests are multicollinearity, heteroskedasticity, omitted variables, and auto-correlation. If any of the problems (multicollinearity, heteroskedasticity, omitted variables, and auto-correlation) are evidenced, they should be considered while estimating the final pooled OLS model.

Table (4/4) OLS Goodness of Fit (C_ETR model)	
Variable	VIF
Std ROA	7.919
Std ROA2	5.415
Ln Age	5.332
Size	4.032
CH	2.842
FCFF	2.704
Cpx	2.432
NDTS	2.384

Tang		2.327
Lev		2.068
Dis		1.817
Dis2		1.612
Mean VIF		3.407
Normality of residual	z-Statistics	1.160
	P-Value	0.123
Heteroskedasticity	Chi2 Statistics	1.114
	Prob>Chi2	0.2859
Omitted variables	F Statistics	3.56
	Prob>F	0.0212
Autocorrelation	F Statistics	2.922
	Prob>F	0.125

Table (4/4) shows the goodness of fit tests to assess the validity of the pooled OLS regression results.

- Table (4/4) reveals the normality of model residual. Therefore, the null hypothesis is supported because the p-value is greater than 5%, which states that the residual of C_ETR is normally distributed.
- There is no multicollinearity among the regressors for the model of the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate in multinational companies listed on the Egyptian Stock Exchange. As Landau and Everitt (2004) and Field (2005) state, multicollinearity exists when the variance inflation factor (VIF) of any independent variable exceeds 10 and when the tolerance factor (1/VIF) is less than 0.10. Therefore, there is no multicollinearity among the explanatory variables included in the model because all explanatory variables show a VIF coefficient less than 10, and a tolerance coefficient greater than 0.10.
- Moreover, Table (4/4) reveals there is no heteroskedasticity problem which means that the error variances are constant for research model. Therefore, the null hypothesis is supported because the p-value is greater than 5%. Rejecting the alternative hypothesis states that the variances of errors are non-constant across observations for model of the impact of income taxes standard (24) on tax avoidance practices as measured by

current effective tax rate in multinational companies listed on the Egyptian Stock Exchange.

- Concerning the specifications, Gujarati (2015) stated that model specification errors may arise from the omission of essential explanatory variables from the model, the inclusion of irrelevant explanatory variables, or the incorrect functional form of independent and dependent variables. As shown in Table (4/4), the p-value of the omitted variables test is less than 5%. Therefore, the null hypothesis is rejected, which states that the functional form is incorrect and has omitted variables in model of the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate in multinational companies listed on the Egyptian Stock Exchange.
- In addition, autocorrelations do not exist, which means that the model's residuals are not serially correlated because the p-value is greater than 5% for model of the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate in multinational companies listed on the Egyptian Stock Exchange.

In conclusion, the researchers added a year fixed effect to treat the problem of autocorrelation and added a quadratic term of Dis and ROA to treat model specification error using generalized least square GLS to test the final fitted model of the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate in multinational companies listed on the Egyptian Stock Exchange as follows:

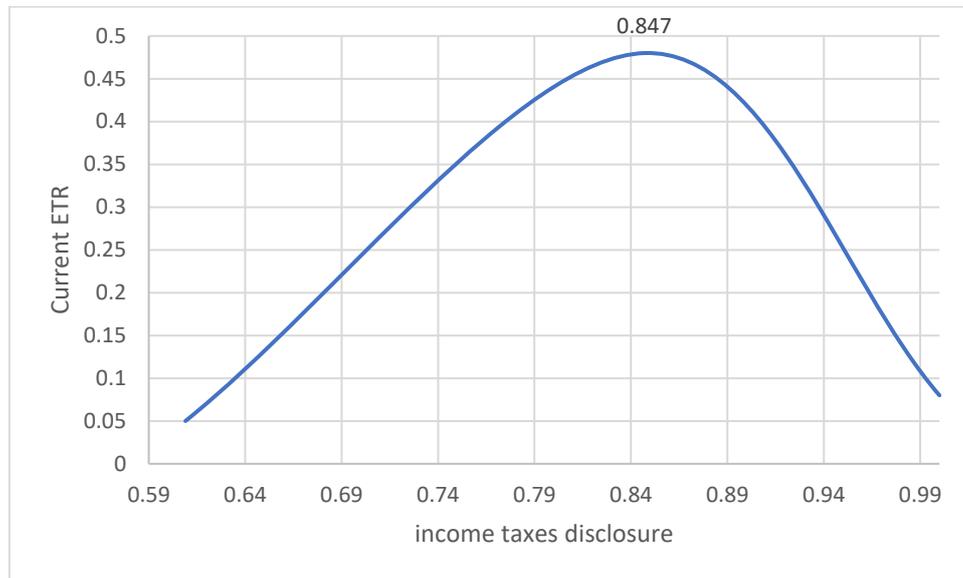
Table (4/5) Final Fitted Model of C_ETR Using GLS.

C_ETR	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
Dis	.3	.1	3.01	.004	.1 .501	***
Dis2	-.177	.066	-2.69	.01	-.309 -.045	***
Size	-.016	.013	-1.21	.232	-.043 .011	
Tang	-.226	.077	-2.93	.005	-.381 -.071	***
Lev	.2	.063	3.15	.003	.073 .327	***
Std_ROA	-.087	.029	-2.98	.005	-.145 -.028	***
Std_ROA2	.035	.012	2.84	.007	.01 .059	***
NDTS	.833	.65	1.28	.206	-.474 2.139	
CH	.269	.21	1.28	.207	-.153 .692	

FCFF	-.024	.124	-0.19	.85	-.273	.226	
Cpx	.035	.599	0.06	.953	-1.168	1.238	
Ln_Age	.007	.031	0.21	.835	-.056	.069	
Constant	.434	.287	1.51	.136	-.142	1.011	
Mean dependent var	0.253		SD dependent var		0.113		
R-squared	0.563		Number of obs		62		
F-test	6.383		Prob > F		0.000		
Akaike crit. (AIC)	-121.213		Bayesian crit. (BIC)		-93.560		
*** p<.01, ** p<.05, * p<.1							

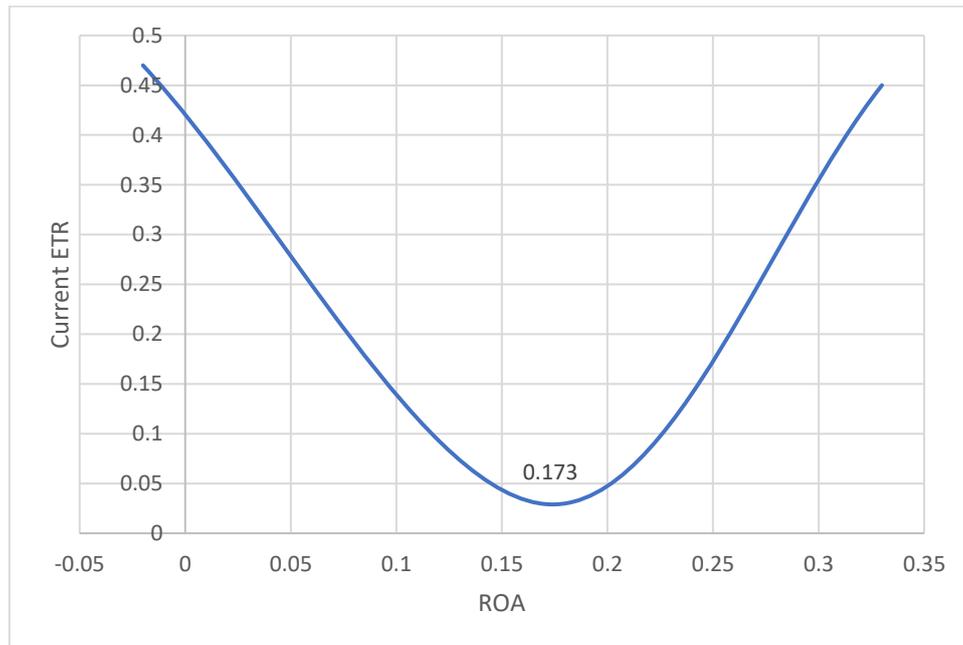
The above table (4/5) shows:

- The overall model can be accepted as a reliable model of the impact of income taxes standard (24) on tax avoidance practices as measured by current effective tax rate in multinational companies listed on the Egyptian Stock Exchange because the Prob > F is less than 5%.
- In addition, income tax disclosures according to standard (24) can explain 56.3% of the variation in current effective tax rate in multinational companies listed on the Egyptian Stock Exchange by using GLS. Implying that tax avoidance is driven by income tax disclosures according to standard (24).
- This research reveals that a curvilinear relationship exists between income tax disclosures according to standard (24) and tax avoidance practices as measured by current effective tax rate, which means the existence of an optimal level of income tax disclosures according to standard (24) to maximize current effective tax rate and minimize tax avoidance practices in multinational companies listed on the Egyptian Stock Exchange. Any deviation will lead to a negative impact on tax avoidance practices; there is an inverted U shape between current effective tax rate and income tax disclosure according to standard (24); (i.e., there is a (U) shape between tax avoidance and income tax disclosure according to standard (24)). Where the Dis parameter is positive (>0) and significant, and the Dis squared is negative and significant, the turning point in the association between C_ETR and Dis: Dis = 0.847.



- This means Dis from 0 to 0.85 shows a positive association between Dis and C_ETR. In addition, a Dis exceeding 0.85 will negatively impact C_ETR, Which implies multinational companies listed on the Egyptian Stock Exchange must have an optimal level of income taxes disclosure to increase current effective tax rate (i.e., multinational companies listed on the Egyptian Stock Exchange must have a minimum level of income taxes disclosure to decrease tax avoidance).
- There is no direct significant impact of firm size on current effective tax rate as a measure of tax avoidance for multinational companies listed on the Egyptian Stock Exchange.
- There is a negative direct significant impact of assets structure as measured by assets tangibility on current effective tax rate as a measure of tax avoidance for multinational companies listed on the Egyptian Stock Exchange. Implies that tangibility has a positive impact on tax avoidance practices for multinational companies listed on the Egyptian Stock Exchange.
- There is a positive direct significant impact of capital structure as measured by leverage on current effective tax rate as a measure of tax avoidance for multinational companies listed on the Egyptian Stock Exchange. Implies that leverage has a negative and good impact on tax avoidance practices for multinational companies listed on the Egyptian Stock Exchange.
- This research reveals that a curvilinear relationship exists between profitability as measured by ROA and tax avoidance practices, which means the existence of an optimal level of profitability as measured by ROA to minimize tax avoidance practices for multinational companies listed on the Egyptian Stock Exchange. Any deviation will lead to a negative impact on tax avoidance practices; there is a (U) shape between

ROA and current ETR. Where the ROA parameter is negative (<0) and significant, and the ROA2 squared is positive (>0) and significant, the turning point in the association between ROA and C_ETR: ROA=1.242 standardized value, which is equivalent to 0.173 of total assets.



- This means a ROA from negative profitability as measured by ROA to 0.173 shows a negative association between ROA and C_ETR. In addition, a ROA exceeding 0.173 will positively impact C_ETR. Which implies multinational company listed on the Egyptian Stock Exchange must have an optimal level of profitability as measured by ROA 0.173 to decrease tax avoidance practices.
- There is no direct significant impact of cash holding, free cash flow, capital expenditure, and firm age on current effective tax rate as a measure of tax avoidance for multinational companies listed on the Egyptian Stock Exchange.

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