



جامعة مدينة السادات

## The Impact of Classification Shifting on Firm Value (An Empirical Study)

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## ▪ Abstract

**Purpose:** This study seeks to examine the impact of classification shifting (CS) practices on firm value. The current study empirically investigates the impact of income classification shifting (ICS) and cash flow classification shifting (CFCS) on firm value. Two alternative measures were used to proxy for firm value which are market-to-Book ratio (MTB) and return on assets (ROA). ICS was measured by unexpected gross profit whereas CFCS was measured by unexpected net operating cash flows.

**Design/methodology:** The study was conducted on a sample consisting of 48 firms listed in the Egyptian Stock Exchange (ESE) during the period from 2017 to 2021. Generalized Least squares (GLS) regression test and Kruskal Wallis test were employed to test the research hypotheses.

**Findings:** The results found a significant positive impact of CFCS on MTB while ICS was negatively significant. As for the second measure ROA, the findings revealed that ICS and CFCS have a significant positive impact on ROA. Further, the results reported the existence of significant differences among sectors in ESE regarding MTB and ROA, but no significant differences concerning ICS and CFCS.

**Originality/value:** This study contributes to the existing literature by examining the impact of CS practices including ICS and CFCS on firm value. Most of the prior literature mainly focused on accrual-based earnings management and real earnings management practices. The current study adds to the body of research by providing novel evidence of CS practices in the Egyptian context. Moreover, a limited number of studies have investigated the impact of CS practices on the value of firms, therefore this study aims to fill this gap in the literature. Finally, the study findings are valuable for standards setters, investors, analysts, regulators, and auditors.

**Keywords:** Firm Value, Income Classification Shifting, Cash Flow Classification Shifting.

## ▪ الملخص:

تسعى هذه الدراسة إلى اختبار أثر ممارسات اعاده التصنيف المتمثلة في إعادة تصنيف بنود قائمة الدخل وإعادة تصنيف بنود قائمة التدفقات النقدية على قيمة المنشأة. وتم الاعتماد على مقياسين بديلين لقيمة المنشأة تمثل في نسبة القيمة السوقية إلى القيمة الدفترية ومعدل العائد على الأصول. وتم قياس ممارسات إعادة تصنيف بنود قائمة الدخل عن طريق مجمل الربح غير المتوقع، في حين تم قياس ممارسات إعادة تصنيف بنود قائمة التدفقات النقدية عن طريق صافي التدفقات النقدية التشغيلية غير المتوقعة.

**التصميم / المنهجية:** أجريت الدراسة على عينة مكونة من (٤٨) شركة مقيدة في سوق الأوراق المالية المصري خلال الفترة من ٢٠١٧ إلى ٢٠٢١. وقد تم استخدام طريقة المربعات الصغرى المعممة (GLS) واختبار كروسكال واليس لاختبار فرضيات الدراسة.

**النتائج:** خلصت نتائج الدراسة إلى وجود أثر إيجابي معنوي لممارسات إعادة تصنيف بنود قائمة التدفقات النقدية على نسبة القيمة السوقية إلى القيمة الدفترية، غير أنه كان لممارسات إعادة تصنيف بنود قائمة الدخل أثر سلبي. وفيما يتعلق بالمقياس الثاني لقيمة المنشأة (معدل العائد على الأصول)، توصلت نتائج الدراسة إلى وجود أثر إيجابي معنوي لكل من إعادة تصنيف بنود قائمة الدخل وإعادة تصنيف بنود قائمة التدفقات النقدية على معدل العائد على الأصول. علاوة على ذلك، توصلت نتائج الدراسة إلى وجود اختلاف بين قطاعات سوق الأوراق المالية المصري حول نسبة القيمة السوقية إلى القيمة الدفترية ومعدل العائد على الأصول، فضلا عن عدم وجود اختلاف حول إعادة تصنيف بنود قائمة التدفقات النقدية وإعادة تصنيف بنود قائمة الدخل.

**الإصالة / القيمة:** تساهم هذه الدراسة في الأدبيات الموجودة من خلال اختبار أثر ممارسات إعادة التصنيف المتمثلة في إعادة تصنيف بنود قائمة الدخل وإعادة تصنيف بنود قائمة التدفقات النقدية على قيمة المنشأة. ركزت غالبية الدراسات السابقة على ممارسات إدارة الأرباح بالاستحقاقات وإدارة الأرباح بالأنشطة الحقيقية، في حين تساهم هذه الدراسة في توفير أدلة تطبيقية على وجود ممارسات إعادة التصنيف في البيئة المصرية بالإضافة إلى ذلك هناك دراسات بحثية محدودة حول أثر ممارسات إعادة التصنيف على قيمة المنشأة وبالتالي تهدف هذه الدراسة إلى سد تلك الفجوة في الأدبيات الموجودة. تعتبر نتائج الدراسة ذات قيمة بالنسبة إلى واضعي المعايير، والمستثمرين، والمحللين الماليين، والمراجعين.

**الكلمات المفتاحية:** إعادة تصنيف بنود قائمة الدخل، إعادة تصنيف بنود قائمة التدفقات النقدية، قيمة المنشأة.

## 1. Introduction

The general purpose of financial reporting is to provide financial information about the reporting entity (IASB, 2018). Earnings are one of the most crucial accounting numbers in financial statements which attract the interest of many stakeholders like investors, creditors, and analysts, since it provides information about the firm's current performance and its prospects for the future (Oriby, 2017; Al Madbouly, 2021). The increasing use of earnings induces managers to exercise their discretion over financial reporting to manage earnings to achieve specific targets, leading to a significant impact on market valuation and ultimately the value of the firm (Darmawan, et al., 2019).

Essentially, firm value is considered as one of the most fundamental indicators that investors rely on when evaluating the firm's performance and making investment decisions. Moreover, maximizing the firm value is a strategic goal for management as it reflects its efficiency in managing the firm resources (Hussien, 2023). Firm value is the investor's perception towards the success of a firm. The increase in the value of the firm will attract investor

interest and foster the trust of stakeholders (Sukesti et al., 2019; Darmawan et al., 2019).

Earnings management (EM) is a widely spread phenomenon. Two broad approaches to identify and investigate EM have been employed in accounting literature. The first approach is accounting earnings management whereby managers intervene in the financial reporting to manipulate reported earnings without changing the underlying cash flows to maximize the firm value or fulfill their opportunistic needs, including accrual-based earnings management (AEM) and classification shifting (CS). An alternative EM approach is real earnings management (REM), which occurs when manager's decisions affect cash flow level as well as the reported earnings (Mohamed, 2017; Abdelwahed, 2018).

Under AEM managers may borrow earnings from future periods to improve current period earnings or the opposite pushing earnings from the current period to future period earnings, through the manipulation of revenues and expenses recognition (i.e., acceleration or deceleration) (Al Maleeh, 2019; Bansal et al., 2023;). In this sense, such practices are more visible than other EM tools due to scrutiny from auditors and regulators as well as having the potential for reversal in future periods (Ezat, 2015).

A second tool of EM is REM which is characterized as deviating from normal operational activities to mask firm's true economic performance (Roychowdury, 2006). This is undertaken through taking various decisions affecting operating, investing, and financing activities (Chang et al., 2018). In such a case, REM activities imply that firms often abandon long term growth to attain short-term earnings which in turn impairs firm value in the long term and imposes costs on shareholders (Ge and Kim, 2014; Chung et al., 2021).

One recently established form of EM is classification shifting (CS), the primary incentive to engage in such practice comes from a manager's desire to meet or beat earnings benchmarks (Mc Vay, 2006). More importantly, managers may be motivated to engage in CS practices because of several reasons. Firstly, it is less costly than other EM tools as it is tough to be detected by auditors. Secondly, the firm is performing in weak corporate governance. Thirdly, the firm is in the decline stage, more specifically it is in a current or potential state of financial distress. Fourthly, when the ownership structure has some characteristics that incentivize managers to practice CS, especially family businesses or firms belonging to business groups (Al Maleeh, 2019).

CS was first defined by Mc Vay (2006) as the deliberate misclassification of items within the income statement thereby inflating core earnings while bottom line income remains unchanged. Managers are more likely to engage in CS when they perceive that user of financial statements, especially investors value core earnings higher than non-core items. That is, being a top line item indicates a higher likelihood of persisting in the future (Alfonso et al., 2015; Bansal et al., 2021). Conversely, special items are unusual in nature or infrequent in occurrence, and investors appear not to understand their nature and value income statement line items differently when making their investment decisions (Mc Vay, 2006; Zalata and Roberts, 2016; Darrough et al, 2017). Therefore, CS is less probable to be caught by auditors and regulators due to the transitory and infrequent nature of such non-recurring items (Usman et al., 2023).

Additionally, managers are likely to practice CS using discontinued operations account “An item that can be viewed as transitory or non-recurring expense, it represents the income and cash flow of a component of a business that the firm has already discontinued or plans to discontinue” (Darrough et al, 2017). Consistent with this, Barua et al. (2010) revealed that managers achieve CS by misclassifying operating expense as income decreasing discontinued operations to record increased core earnings. These findings are in line with research by (Anthonius and Murwaningsari, 2018; Skousen and Wu, 2019; Inoue, 2020).

Most of the previous studies have concentrated mainly on the manipulation of core earnings, however recent studies have provided evidence of gross profit manipulation through the shifting of cost of goods sold to operating expenses. These studies argued that gross profit is perceived by investors as more sustainable than core earnings due to its closer proximity to sales and therefore it represents an important performance indicator signaling the efficiency of operations of a firm (Poonawala and Nagar, 2019; Ezat, 2021).

Apart from expense misclassification, other studies expand the scope of CS to revenue misclassification by shifting non-operating revenue to operating revenue. Such manipulation could be explained by the investor’s tendency to pay more attention to operating revenue thus any increase in operating revenue is more valued by investors than a decrease in core expense (Malikov, et al. (2018).

On the other hand, CS practices may take the form of cash flow classification shifting CFCS where managers misclassify items within the cash

flow statement to record increased operating cash flows, holding the cash flow at the end with no change (Nagar and Raithatha, 2016; Baik et al. 2016; Nagar and Sen, 2016; Bansal, et al., 2021; Osman, 2022, Mahmoud, 2023). Managers may be motivated to manipulate operating cash flows to meet or beat analyst forecasts of cash flows as markets react positively to stock price of firms with favorable cash flow surprise. Another reason is the investors tendency to value operating cash flow to a great extent. They perceive that cash flow from operations is likely to have an impact on firm value (Nagar and Raithatha, 2016)

In addition to ICS and CFCS, managers may engage in CS practices over the balance sheet statement without changing the aggregate figure of total assets, total liabilities, and total owner equity. For instance, they are likely to misclassify short term liabilities as long-term liabilities, especially when their firm suffers from financial distress or to avoid reporting working capital deficit and debt covenant violations (tree et al., 2019).

Arguably, CS is considered a relatively less costly tool to manage earnings than AEM and REM as it elicits lower scrutiny by auditors and regulators, in addition, it does not result in accrual reversals in the following periods as AEM, nor forgone benefits or increased cost as REM. Moreover, it is less probable to negatively influence firm value than AEM and REM (Zalata and Roberts, 2017; Hwang et al., 2022; Usman et al 2023; Elsayed et al., 2023). However, such misclassification could mislead investors, especially less sophisticated investors as they are likely to be fooled by abnormally overstated earnings, implying higher market and earnings expectations for the future periods (Alfonso et al., 2015).

Significantly, the directional impact of CS practices on firm valuation is an empirical question. Conflicting evidence on the implications of CS practices on firm value exists. On the one hand, the market might perceive manager's opportunistic behavior negatively leading to a decrease in firm value (Tulcanaza-Prieto and Lee, 2022). On the other hand, a positive impact of CS on firm value could occur when managers adopt specific accounting policies and methods to communicate firm's specific information and convey their expectations of the firm's future flows (Garanina, 2023). In this sense, managers can make use of CS practices efficiently (Abbas and Ayub, 2019). They are likely to manage earnings to meet the expectations of analysts and stakeholders and show how their firms are more stable in the market to enhance its reputation which in turn reflects on the share price positively and



subsequently increases the value of the firm in the short term. Nevertheless, these prices are unreal and don't reflect the firm's realistic performance, leading to a negative impact on firm value in the future. (Abo Taleb, 2022). Furthermore, detecting such opportunistic practices may pose challenges to the users of financial statements (Habib et al., 2022). More importantly, under CS practices, even if managers attempt to make earnings more informative, it may provide invalid information for the prediction of performance for the following periods (Anagnostopoulou, et al., 2021). Moreover, such mispricing would cause investors to incorrectly evaluate these earnings and lose excess returns (WU, 2016).

***Given the above-mentioned discussion, the research gap can be determined by the following aspects:***

***Firstly:*** Since 2006, Mc Vay has opened up new avenues to conduct extensive studies related to measuring EM by CS to provide more evidence about this behavior, analyze its motivation, constraints, and measurements. Therefore, the current study seeks to investigate the existence of such practice in the Egyptian context.

***Secondly:*** Majorly, it is evident that prior literature has a clear contradiction in results concerning the impact of CS practices on firm value. Some studies denoted that CS positively affects firm value while other studies found a negative impact. This inconsistency in the findings emphasizes the need for future analysis to investigate the impact of CS practices including ICS and CFCS on firm value in the Egyptian setting.

Accordingly, this study attempts to answer the following question: to what extent do classification shifting practices including income classification shifting and cash flow classification shifting have an impact on the value of firms listed in the Egyptian Stock Exchange?

The main objective of the current study is to empirically examine the impact of CS practices on the value of firms listed in the ESE. To achieve this, the main objective is divided into sub-objectives: Firstly, finding out the impact of ICS and CFCS on firm value. Secondly, exploring if there are differences among sectors in ESE regarding the study variables.

Using a sample of 48 firms listed in the ESE over the period 2017 – 2021, the current study empirically investigates whether CS practices including ICS and CFCS have an impact on firm value. Based on the methodology employed by Poonawala and Nagar (2019); Ezat (2021), ICS was measured by unexpected gross profit whereas CFCS was measured by unexpected net

operating cash flow consistent with Lee (2012); Nagar and San (2016); Nagar and Raithatha (2016). Generalized Least squares (GLS) regression test was employed to overcome the problems of autocorrelation, heteroskedasticity, and the normality of residuals and the results documented a significant impact of ICS and CFCS on the value of firms listed in the ESE.

This study contributes to the existing literature by providing empirical evidence on the impact of CS practices including ICS and CFCS on firm value. Prior research has extensively focused on AEM and REM while there has been limited research on the pervasiveness of CS practices in Arabian nations especially Egypt. In this regard, this study investigates the relatively new EM tool namely, CS within the Egyptian context. Moreover, this study investigates the impact of such practice on the value of firms listed in the ESE. Furthermore, the study findings are anticipated to have several practical implications for standards setters, investors, analysts, regulators, and auditors. For standards setters, the current study turns their attention toward setting enough standards and regulations that limit the manager's opportunistic behavior to exercise their discretion in financial reporting which in turn protect users of accounting information and help investors making better investment decisions. The findings are of particular importance to auditors to increase their awareness on the seriousness of CS practices to search for a relevant technique to limit and constrain such behavior in firms.

The remainder of this study is organized as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 describes the study methodology followed by the results and discussion in Section 4, and Section 5 provides the conclusion, recommendation, and points to future research.

## **2. Literature Review and Hypothesis Development**

The previous studies which are related to the current study can be classified into two main categories. The first focuses on CS as an earnings management tool. The second demonstrates the impact of CS on firm value.

### **2.1 Studies on Classification Shifting as an Earnings Management Tool:**

EM is one of the most studied areas in accounting research. Literature has documented three main tools of EM which are AEM, REM, and CS. The latter has been the main concern of several recent research due to the long time focus of AEM and REM. CS was first introduced by Mc Vay (2006). Majorly, she developed a methodology to identify the evidence of CS practices among US firms. By using a sample of 76901 firm - year observation covering the period



1988 to 2003, she found that managers opportunistically shift core expense (cost of goods sold and selling, general and administrative expense) to income decreasing special items to inflate their core earnings. Beginning with Mc Vay (2006), initial empirical study, a stream of studies has begun to empirically investigate the practice of CS and provide additional evidence. For instance, by using quarterly data, Fan et al. (2010), concluded that managers engage in CS by shifting core expenses to income decreasing special items and that such practice is more prevalent during the fourth quarter than in the interim quarter. While Barua, et al. (2010) undertook a study aimed at investigating whether managers use CS to manage earnings by allocating operating expense to discontinued operations in order to meet or beat analysts' forecasts. Based on a sample of 79643 firm - year observations through the period from 1988 to 2006, the results reported a positive association between income decreasing discontinued operations and unexpected core earnings. In the same vein, using a sample of 1230 Korean firms in 2011, Noh et al. (2016) argued that when managers wish to inflate their reported operating income and therefore influence the markets' perceptions, they use non-operating income as well as special expense items for expense misclassification in the IFRS adoption period. While Wu (2016) investigated the pervasiveness of CS practices among European firms based on a sample of 1125 firm - year observations during the period 2005-2015. The results found a significant positive relation between unexpected core earnings and non-recurring items. In the UK context, Zalata and Robert (2017) investigated the misclassification of recurring items as non-recurring items in the post era adoption. Based on a sample of 1552 firm - year observation over the period 2008 to 2010, the results denoted that managers tend to engage in CS practices following the IFRS adoption showing a significant positive relationship between non-recurring expense and unexpected core earnings.

On the other hand, another group of researchers shed light on gross profit manipulation rather than core earnings. Using a sample containing 319518 firm quarter observations during the period 1988-2012, Fan and liu (2017) argued that when managers are motivated to attain gross profit benchmarks, they tend to misclassify cost of goods sold but not selling, general, and administrative expenses as income decreasing special items. Besides, Poonawala and Nagar (2019) examined whether managers misclassify the cost of goods sold as operating expense in order to manipulate gross profits upwards. By utilizing a sample of 70,224 firm - year observations covering the period from 1988 to

2016, the results revealed that managers are more likely to shift cost of goods sold to operating expense to inflate their gross profits whereas they tend to shift cost of goods sold to research and development than to selling, general, and administrative expenses in order to just meet prior years gross profits. In the Egyptian context, Ezat (2021) examined CS practices through the manipulation of gross profit. He argued that gross profit figure is more comparable than core earnings and that investors use this figure when making their decisions. The study was conducted on a sample of 494 Egyptian listed firm - year observation during the period 2016 to 2018 and the results reported that Egyptian firms tend to shift other operating income to total operating revenue to report a gross profit increase rather than shift cost of goods sold to selling, general, and administrative expenses.

Besides, Malikov, et al. (2018) expand the scope of expense classification shifting by investigating the misclassification of revenues items within the income statement based on a sample of 12804 firm year - observations covering the period from 1995 to 2014. They argued that managers are more likely to shift non-operating revenues as operating revenues to increase their operating revenue after mandatory IFRS adoption, showing a negative association between unexpected operating revenue and non-operating revenue.

On the other side, Nagar and Sen (2014), provided empirical evidence of CFCS, where firms shift operating cash outflows to investing and financing cash outflows, and investing and financing cash inflows to operating cash inflows, thereby increasing operating cash flows. Similarity, based on a sample of 3130 Korean firms that mandatorily adopt IFRS, Baik et al. (2016) denoted that managers shift interest payment from operating to financing cash flows to record an increase in operating cash flows. While tree et al. (2019) investigated the use of CS practices at the level of balance sheet statement. Based on a sample of 67045 firm year - observations during the period 1999 to 2019, they provided empirical evidence that firms are more likely to shift current liabilities to long term liabilities to avoid reporting working capital deficit.

Further, Bansal et al. (2021) addressed the three forms of CS practices which are revenue misclassification, expense misclassification, and cash flow misclassification. By utilizing a sample of 12870 Bombay Stock Exchange listed firm - year observation over the period from 2010 to 2018, the findings confirmed that managers are more inclined in misclassification of revenues rather than misclassification of expense. In addition, the results revealed the

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existence of cash flow misclassification among Indian firms by shifting investing and financing cash flow to operating cash flow.

Accordingly, based on the above-mentioned studies CS practices can be summarized in the table (1) as follows:

<b>Table (1) Summary of the Nature of Classification Shifting Practices</b>	
<b>Definition</b>	Deliberate misclassification of items within the financial statements (income statement, cash flow statement, and balance sheet statement) thereby inflating sub-aggregate figures while the bottom-line figure remains unchanged.
<b>Forms</b>	<p><b>1. <u>Income Classification Shifting</u></b></p> <ul style="list-style-type: none"><li>• <b>Expense Classification Shifting</b></li></ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"><li>➤ Shifting core expenses (COGS, SG&amp;A) to income decreasing special items to inflate core earnings.</li><li>➤ Shifting core expenses (COGS, SG&amp;A) to income decreasing discontinued operations to inflate core earnings.</li><li>➤ Shifting core expenses (COGS, SG&amp;A) to non-operating expenses.</li><li>➤ Shifting COGS to operating expenses to inflate gross profit.</li></ul> <ul style="list-style-type: none"><li>• <b>Revenues Classification Shifting</b></li></ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"><li>➤ Shifting non-operating revenues to operating revenues to inflate core earnings.</li><li>➤ Shifting other operating revenues to total revenues to inflate gross profit.</li></ul> <p><b>2. <u>Cash Flow Classification Shifting</u></b></p> <p><i>Example</i></p> <ul style="list-style-type: none"><li>➤ Shifting investing or financing cash flows to operating cash flows.</li></ul> <p><b>3. <u>Balance Sheet Classification Shifting</u></b></p> <p><i>Example</i></p> <ul style="list-style-type: none"><li>➤ Shifting current liabilities to long term liabilities.</li></ul>

Source: prepared by the researcher.

### 2.2 Studies on the Impact of Classification Shifting on Firm Value

Generally, the impact of EM practices on firm value is unpredictable. Prior studies examined the managerial intent toward manipulation of earnings and so distinguished between opportunistic EM (to mislead investors) and informative

EM (to view a good image to the stakeholders about a firm's performance), (Idris, 2012; Ali & Kamardin, 2018).

In this context, most studies stated that EM is a negative behavior as misalignment of managers and shareholder's incentives could induce managers to manage earnings opportunistically thereby creating distortion in the reported earnings, which deteriorates the firm value and resource allocation. Alternatively, other studies concluded that EM practices may be efficient because it potentially enhances the quality, predictivity of information, makes earnings more informative to investors and subsequently enhance the value of the firm (Jiraporn, et al., 2008; Sirega & Utama, 2008; Ismail, 2017; Abbas & Ayad, 2019; Potharla et al., 2021). Relatedly, EM is "a collection of managerial decisions that result in not reporting the true short-term, value-maximizing earnings as known to management. EM can be beneficial: it signals long-term value; pernicious: it conceals short- or long-term value; neutral: it reveals the short-term true performance" (Ronen and Varada, 2008, p27).

Significantly, CS practices may affect the firm's valuation. Managers may be motivated to engage in CS due to its relatively low opportunity cost and its impact on stock price, moreover they believe that it lacks the negative economic consequences made by REM and thus it does not harm firm value (Chae & Nakano, 2015). Meanwhile, CS may have adverse implications for firm value according to the overvaluation of earnings. Thus, given the focus of the market participants on core items, CS practices could influence the decision-making of market participants and their perceptions of persistence and growth associated with a firm (Nagar et al., 2021). Such results indicate that investors are potentially fooled by overvaluation of earnings due to the notion "*Higher earnings today implies higher earnings in the future*" (Zalata and Roberts, 2017, p.55). Accordingly, Lattanzio and Thomas (2019) demonstrated that the impact of CS practices on firm value is conflicting. On one hand, CS may create additional value for shareholders by allowing firm to obtain lower cost financing or avoid costly debt covenants violations, in addition, managers may use CS to enhance the quality and predictivity of core items to help investors better predict future performance which in turn results in higher stock price informativeness (positive effect). On the other hand, managers may exploit CS for opportunistic behavior to increase their own compensation or delay turnover because of poor actual performance, eventually resulting in lowering firm value (negative effect).

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Arguably, there are evident inconsistencies among empirical findings about the impact of EM on firm value. Besides that, the existing body of literature largely focuses on the impact of AEM and REM on firm value while there has been limited research regarding CS practices. For instance, Lattanzio and Thomas (2019) examined whether firm's use of CS is persistent over time, is influenced by peer firm's engagement in reporting strategy, and has consequences for firm value by utilizing a sample of 33106 firm year observations during the period 1990–2017. The study found a positive relationship between expense classification shifting and firm valuation. More specially, the results provided evidence that firms engagement in expense classification shifting practices in the current year (t) relates positively to its Tobin's Q and stock returns in the following year (t +1). Furthermore, the study pointed out that the positive relationship between CS and firm value is stronger for firms having higher levels of institutional ownership and when firms are leveraging up their capital structure. That is, the results revealed that the use of CS practices is consistent with the desire to increase debt capacity and generate additional firm value. While Deef (2022) examined the economic consequences of the relationship between EM by CS and managerial ability. i.e., whether highly competent managers are more likely to engage in CS practices than other managers and its influence on the value of the firms listed in the Saudi Capital Market based on a sample of 625 observations through the period from 2015 to 2019. By using Mc Vay 2006 model as a proxy for CS and Tobin's Q to measure the firm value, the results provided empirical evidence that increased managerial ability can mitigate CS practices which positively reflected on firm value and might enhance financial reporting transparency as a result. In the Egyptian context, Osman (2022) undertook a study aimed at testing the effect of CFCS practices on firm value based on a sample of 415 observations for Egyptian firms listed in the ESE over the period from 2016–2020. By employing an unexpected cash flow model to measure CS and Tobin's Q to measure firm value the study found that CFCS has an inverse impact on firm value.

Given the above discussion, prior literature addressed three forms of CS including income classification shifting, cash flow classification shifting, and balance sheet classification shifting. Most of the studies were conducted in different countries such as, UK, US, East Asian countries while there is scant literature in the Egyptian context.

Furthermore, it is evident that prior literature has a clear contradiction in results concerning the impact of CS practices on firm value. Some studies denoted that CS positively affects firm value while others found a negative impact. This inconsistency in the findings emphasizes the need for future analysis to investigate such impact in the Egyptian setting.

***Based on the aforementioned preceding literature, the present study aims to identify the impact of CS practices including ICS and CFCS on firm value in the Egyptian context through the following hypothesis:***

***H1:*** Income classification shifting and cash flow classification shifting have an insignificant impact on the value of firms listed in the Egyptian Stock Exchange.

***H2:*** There are insignificant differences among sectors in the Egyptian Stock Exchange regarding the study variables.

### **3. Empirical Methodology**

The study methodology comprises of sample selection, data collection method, variables description and measurement, model specification, and statistical techniques used in the study. This can be illustrated as follows:

#### **3.1 Sample Selection**

The initial sample includes all firms listed in the ESE during the period from 2017 to 2021. Banks and financial services firms have been excluded from the sample because of the unique nature of their activities, moreover, they are subjected to different rules and regulations. Four main criteria are employed for the inclusion in the sample: Firstly, all firms pulled from the population must have been listed in the ESE during the period from 2017 to 2021. Secondly, all financial statements must have been issued in the Egyptian pound. Thirdly, all financial statements must have been prepared on 31/12 to achieve the consistency of the financial year. Fourthly, firms must have enough financial data to measure CS practices. According to these criteria, the final study sample consists of 48 firms from 7 sectors with 240 observations throughout 5 years from 2017 to 2021. Table (2) summarizes the study sample as follows:

**Table (2): The Study Sample**

No.	Sector	Total Firms Number	Excluded Firms Number	Final Sample
1	Contracting and Construction Engineering	11	5	6
2	Health care, pharmaceuticals	19	12	7
3	Basic resources	13	6	7



4	Travel & Leisure	9	2	7
5	Building materials	11	5	6
6	Industrial goods, services, and Automobiles	6	--	6
7	Real estate	33	24	9
total		102	54	48

Source: prepared by the researcher

### **3.2 Data Collection Method**

The study used secondary data. Data for all study variables are obtained from annual financial statements of Egyptian listed firms and reports from the ESE to obtain the stock prices. The required data are often available on the firm's website, The Mubasher Info Egypt website, The Egyptian Stock Exchange website, and The Investing website.

### **3.3 Variables Description and Measurement**

The study relied on a set of variables. The independent variables are ICS and CFCS. The dependent variable is represented by the firm value which is measured by market-to-book ratio (MTB) and return on assets (ROA). With relation to control variables, the study incorporated five control variables that could affect the firm value such as BIG4, Firm age, Firm size, Leverage, and Asset growth.

#### **• Dependent Variable**

The study employed two alternative measures of firm value as dependent variables: The first measure is MTB which is measured as the ratio of the market value to book value of equity (Bandanuji and Khoiruddin, 2020; Atiningsih and Izzaty, 2021; Marpanung et al., 2022; Sutejaet al., 2023). The second measure is ROA which can be computed by dividing net income after tax over total assets (Agung et al., 2021; Atiningsih and Izzaty, 2021).

#### **• Independent Variables**

##### **▪ Classification Shifting**

The present study employed two measures of CS (ICS and CFCS); this can be illustrated as follows:

##### **➤ Income Classification Shifting**

Following (Fan and Lee, 2017; Poonawala and Nagar, 2019; Ezat, 2021), the present study concentrates mainly on unexpected gross profit manipulation to proxy for ICS. Expected gross profit is estimated through the following regression model:

$$\frac{GP_{it}}{A_{it-1}} = \alpha + \beta 1 \left( \frac{1}{A_{it-1}} \right) + \beta 2 \left( \frac{GP_{it-1}}{A_{it-1}} \right) + \beta 3 \left( \frac{TACC_{it-1}}{A_{it-1}} \right) + \beta 4 \left( \frac{TACC_{it}}{A_{it-1}} \right) + \beta 5 \left( \frac{S_{it}}{A_{it-1}} \right) + \beta 6 \left( \frac{CH\_S_{it}}{A_{it-1}} \right) + \beta 7 \left( \frac{NEG\ CH\_S_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

Where:

$GP_{it}$  = Reported gross profit for firm (i) in year (t).

$A_{it-1}$  = Total assets for firm (i) in year (t-1).

$GP_{it-1}$  = Reported gross profit for firm (i) in year (t-1).

$TACC_{it}$  = Total accruals for firm (i) in year (t).

$TACC_{it-1}$  = Total accruals for firm (i) in year (t-1).

$S_{it}$  = Total sales for firm (i) in year (t).

$CH\_S_{it}$  = Percentage change in sales (sales growth).

$NEG\ CH\_S_{it}$  = (1) if  $\Delta sales_t$  is less than 0, and (0) otherwise.

Next unexpected gross profit ( $UGP$ ) is measured as the difference between reported gross profit and expected gross profit.

Afterward the current study basically investigates whether Egyptian firms engage in CS practices through misclassifying cost of goods sold (COGS) as operating expense OEXP and misclassifying other operating income (OI) as total revenues in order to inflate gross profit.

Accordingly, the study employs the below expected selling, general and administrative expense model to estimate unexpected selling, general and administrative expense (USGA) as computed by the difference between reported and expected values. The model specification is the following:

$$\frac{SG\ \&A_{it}}{A_{it-1}} = \alpha + \beta 1 \left( \frac{1}{A_{it-1}} \right) + \beta 2 \left( \frac{SG\ \&A_{it-1}}{A_{it-1}} \right) + \beta 3 \left( \frac{TACC_{it-1}}{A_{it-1}} \right) + \beta 4 \left( \frac{TACC_{it}}{A_{it-1}} \right) + \beta 5 \left( \frac{S_{it}}{A_{it-1}} \right) + \beta 6 \left( \frac{RET_{it}}{A_{it-1}} \right) + \beta 7 \left( \frac{RET_{it-1}}{A_{it-1}} \right) + \beta 8 \left( \frac{CH\_S_{it}}{A_{it-1}} \right) + \beta 9 \left( \frac{NEG\ CH\_S_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

Where:

$SG\ \&A_{it}$  = Selling, general and administrative expenses for firm (i) in year (t).

$A_{it-1}$  = Total assets for firm (i) in year (t-1).

$SG\ \&A_{it-1}$  = Selling, general and administrative expenses for firm (i) in year (t-1).

$TACC_{it-1}$  = Total accruals for firm (i) in year (t-1)

$TACC_{it}$  = Total accruals for firm (i) in year (t).

$RET_{it}$  = Stock returns for firm (i) in year (t).

$RET_{it-1}$  = Stock returns for firm (i) in year (t-1).

$S_{it}$  = Total sales for firm (i) in year (t).

$CH\_S_{it}$  = Percentage change in sales (sales growth).

$NEG\_CH\_S_{it}$  = (1) if  $\Delta sales_t$  is less than 0, and (0) otherwise.

Next unexpected gross profit is regressed with operating expenses ( $OEXP$ ) and other operating income ( $OI$ ) as follows:

$$UGP_{it} = \alpha + B_1 OEXP_{it} + \beta_2 \left( \frac{OI_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

Where:

$UGP_{it}$  = Unexpected gross profit for firm (i) in year (t).

$OEXP_{it}$  = Operating expense for firm (i) in year (t) computed as [unexpected selling, general and administrative expense ( $SG\&A$ ) + other operating expenses ( $OOEXP$ )] scaled by previous total assets.

$A_{it-1}$  = Total assets for firm (i) in year (t-1).

If the Egyptian firms misclassify  $COGS$  as  $OEXP$ , then the coefficient  $B_1$  should be positive while, if these firms misclassify  $OI$  as total revenues, then the coefficient  $B_2$  should be negative.

#### ➤ **Cash Flow Classification Shifting**

Based on prior studies (Lee, 2012; Nagar and Raithatha, 2016; Nagar and San, 2016; Bansal et al., 2020) the present study measure cash flow classification shifting through unexpected net operating cash flows model as follows:

$$\frac{CFO_{it}}{A_{it-1}} = \alpha + \beta_1 \left( \frac{1}{A_{it-1}} \right) + \beta_2 \left[ \frac{S_{it}}{A_{it-1}} \right] + \beta_3 \left( \frac{\Delta S_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

Where:

$CFO_{it}$  = Net operating cash flows for firm (i) in year (t).

$A_{it-1}$  = Total assets for firm (i) in year (t-1).

$S_{it}$  = Total sales for firm (i) in year (t).

$\Delta S_{it}$  = Change in sales for firm (i) in year (t).

The difference between actual net operating cash flow and expected net operating cash flows is used as a proxy for unexpected net operating cash flows ( $UCFO$ ).

Next the study tests whether Egyptian firms misclassify operating cash flow as investing or financing cash flows through the following regression model:

$$UCFO_{it} = \alpha + \beta_1 \left( \frac{INV_{it}}{A_{it-1}} \right) + \beta_1 \left( \frac{FIN_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

Where:

$UCFO$  = Unexpected net operating cash flows for firm (i) in year (t).

$INV_{it}$  = Investing cash flows for firm (i) in year (t).

$FIN_{it}$  = Financing cash flows for firm (i) in year (t).

If the Egyptian firms misclassify operating cash flows as investing or financing cash flows, then the coefficient  $B_1$  and  $B_2$  should be negative.

▪ **Control Variables**

The study used five control variables that are indicated in the literature as significantly influencing the firm value. These variables could be measured as follows:

**BIG4:** is a dummy variable equals one if the audit firm is a big 4 firm and zero otherwise.

**Age:** is the firm's age measured by the natural logarithm of firm age.

**Size:** is the firm's size measured by the natural logarithm of total assets.

**LEV:** a firm's financial leverage calculated as total debt divided by total assets.

**Growth:** is the assets growth computed as total assets of the current year less total assets of the previous year divided by total assets of the current year.

**Table (3): Description and Measurement of Variables**

Abbreviation	Variable	Measurement	References
<b>Dependent Variables</b>			
MTB	market-to-book ratio	The ratio of the market value to book value of equity.	(Bandanuji and Khoiruddin, 2020) ( Atiningsih and Izzaty, 2021) ( Marpanung et al. 2022) ( Nurdiansari et al. 2022) ( Suteja et al., 2023)
ROA	Return on Assets	Net income after tax /total assets	(Agung et al., 2021) (Atiningsih and Izzaty, 2021)
<b>Independent Variables</b>			
ICS	Income Classification Shifting	Is measured by unexpected gross profit model	(Fan and Lee, 2017) ( Poonawala and Nagar, 2019) ( Ha and Thomas, 2019) (Anagnostopoulou et al. 2021) (Ezat, 2021)

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Abbreviation	Variable	Measurement	References
CFCS	Cash flow Classification Shifting	Is measured by unexpected net operating cash flows model.	(Lee, 2012) (Nagar and San, 2016) (Nagar and Raithatha, 2016) (Bansal et al. 2021)
<b>Control Variables</b>			
BIG4	Big 4 auditing firms	A dummy variable equals one if the audit firm is a big 4 firm and zero otherwise.	(Imeni et al., 2021) (Darmawan et al. 2019) (Suffian et al. 2014)
Age	Firm Age	The natural logarithm of firm age.	(Imeni et al. 2021) (Deef, 2022)
Size	Firm Size	The natural logarithm of total assets.	(Atiningsih and Izzaty, 2021) (Agung and Huzaimal, 2021) (Marpanung et al. 2022) (Sutejaet al., 2023)
LEV	Leverage	Total debt/total assets	(Gill et al., 2013) (Siboni and Pourali, 2015) (Imeni et al., 2021)
Growth	Asset Growth	(Total assets of the current year- total assets of the previous year) / total assets of the current year.	(Fajari and Isnalita, 2018) (Nurdiansari et al. 2022) (Marpanung et al., 2022)

Source: prepared by the researcher

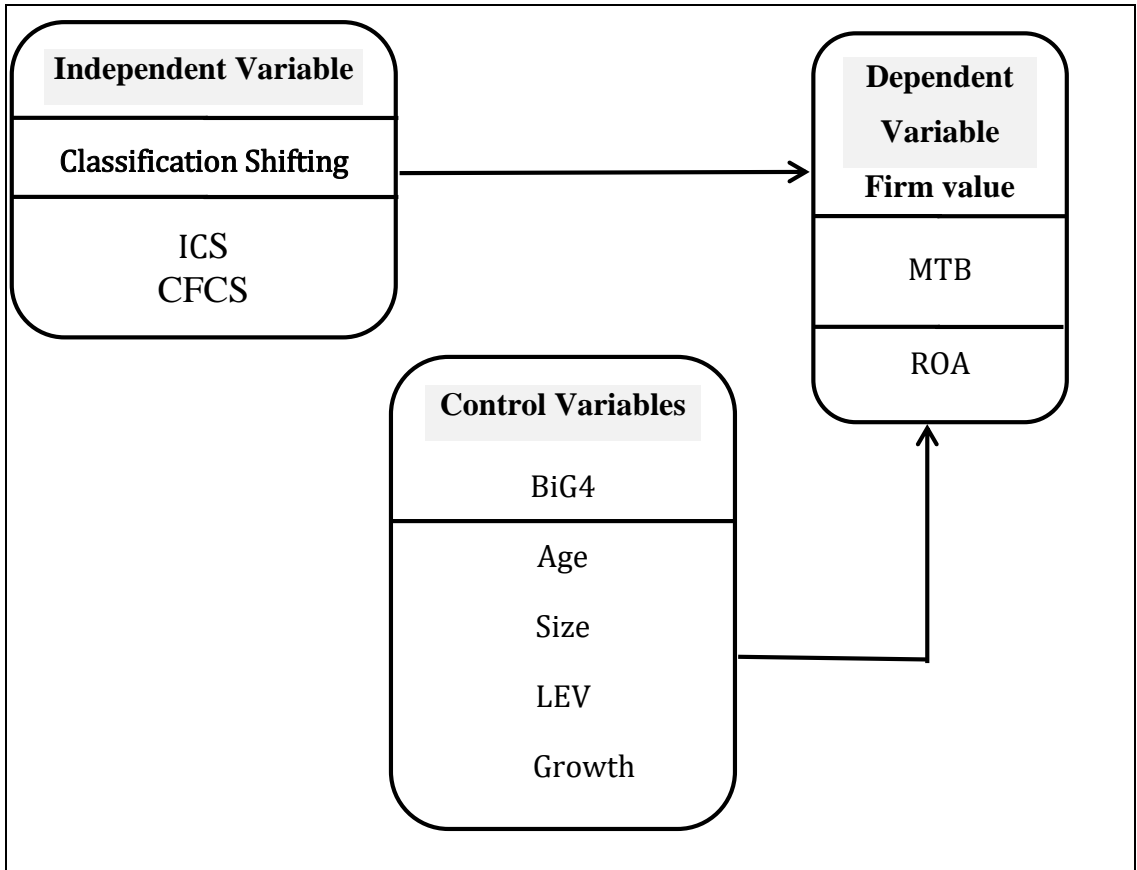


Figure (1): The Relationship among the study variables

### 3.4 Model Specification

The current study depends on two models to achieve its objectives. Two alternative measures of firm value, which are MTB and ROA, were used to investigate the impact CS practices including ICS and CFCS on firm value. The study proposed the following models:

#### Investigating the Impact of Income Classification Shifting, and Cash Flow Classification Shifting on Firm Value

**Model (1):**  $MTB_{it} = \alpha + B_1 ICS_{it} + B_2 CFCS_{it} + B_3 BIG4 + B_4 Age_{it} + B_5 Size_{it} + B_6 LEV_{it} + B_7 Growth_{it} + \varepsilon_{it}$ .



**Model (2):**  $ROA_{it} = \alpha + B_1 ICS_{it} + B_2 CFCS_{it} + B_3 BIG4 + B_4 Age_{it} + B_5 Size_{it} + B_6 LEV_{it} + B_7 Growth_{it} + \epsilon_{it}$ .

### **3.5 Statistical Techniques:**

The present study uses the following statistical techniques to test hypotheses and obtain results:

#### ▪ **The Normal Distribution Tests**

Used to test whether the study variables follow the normal distribution, in addition to determining the parametric and non-parametric techniques which are compatible for analyzing the study data. The study used Kolmogorov – Smirnov and Shapiro – Wilk tests.

#### ▪ **The Normality Test**

Used to test the normality of residuals, this test determines whether sample data have skewness and kurtosis that match a normal distribution. The study used the Jarque-Bera test.

#### ▪ **The Multicollinearity Test**

Used to detect the existence of the multicollinearity problem in the study models. The study relied on the collinearity diagnostics by determining the value of variance inflation factor (VIF) and tolerance.

#### ▪ **The Autocorrelation Test**

The study used the Wooldridge test to detect the existence of autocorrelation problem in the study models.

#### ▪ **The Heteroskedasticity Test**

The study relied on Whites' tests to check for heteroscedastic errors in regression analysis. It examines if the independent variable affects error variance non-linearly.

#### ▪ **Descriptive Statistics**

Descriptive statistics are used to describe the basic features of the study data using the mean, standard deviation, maximum and minimum values, in addition to the frequency of the dummy variables.

#### ▪ **Regression Analysis**

A Generalized Least Square (GLS) test on the Stata is employed to increase the models' efficiency. FGLS is used for solving the normality of residuals, autocorrelation and heteroskedasticity problems in the panel data.

#### ▪ **Kruskal Wallis Test**

Used to examine the significant differences among sectors in terms of the study variables.

## **4. Empirical Results and Testing Hypotheses**

This section presents the testing of hypotheses and illustrates the empirical results found using the statistical analysis techniques including Generalized Least Square (GLS) test and Kruskal Wallis Test.

#### 4.1 The Normal Distribution Test

For testing whether the study variables follow the normal distribution, the study depended on the Kolmogorov-Smirnov and Shapiro-Wilk tests, where the variables follow the normal distribution if the p-value (sig.) is more than (.05). This can be illustrated by the following table (4):

**Table (4): Results of the Normal Distribution Test**

Variable	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
MTB	.323	.000	.467	.000
ROA	.200	.000	.481	.000
Age	.115	.000	.967	.000
Size	.068	.009	.979	.001
LEV	.055	.078	.959	.000
Growth	.137	.000	.806	.000

Results in the table (4) indicate that the significance values for Kolmogorov-Smirnov and Shapiro-Wilk tests were less than (.05) which reflects that the study variables are not normally distributed except for LEV which reveals a significance value more than (.05) and so follows the normal distribution. However, there is no effect for the non-normality of the research variables on the accuracy of the research model as the sample size was more than 30.

In accordance with ICS, CFCS, and BIG4 variables, they have not been included in the normal distribution test because they are dummy variables with binary values not subject to the conditions of the normal distribution.

#### 4.2 Descriptive Statistics

Table (5) shows descriptive statistics by dividing the study variables into continuous variables and interval variables through panel (A) and panel (B) as follows:

**Table (5): Descriptive Statistics Results**

Panel A: Continuous Variables				
Variable	Mean	Std. Dev.	Min.	Max.

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MTB	.969	2.424	-27.644	9.281
ROA	.0323	.13481	-1.68	.53
Age	3.344	.436	2.079	4.736
Size	20.898	1.92	16.414	24.938
LEV	.482	.243	.009	1.831
Growth	.102	.251	-.51	1.531
<b>Panel B: Interval Variables</b>				
<b>Variable</b>	<b>Value (1)</b>		<b>Value (0)</b>	
	<b>Frequency</b>	<b>Percent</b>	<b>Frequency</b>	<b>Percent</b>
ICS	108	45	132	55
CFCS	118	49.17	122	50.83
BIG4	80	33.33	160	66.67

As shown in table (5), the mean value of MTB was (.969) with a minimum and maximum (-27.644, 9.281) respectively, these findings are slightly below average values revealed by Zaher (2019); Elsayed (2021); Osman (2022) which reached (1.114, 1.955, 1.33) respectively. Regarding the second measure of firm value ROA, it showed a mean value of (.0323) and a minimum and maximum value (-1.68, .53) respectively. This result goes in the same vein as those of Majeed and Yan (2021); Hussien (2023) which showed mean values of (.0348, .0420) respectively; the negative value of ROA indicates a quite poor performance in some of the Egyptian firms in the study sample.

Turning to control variables, (Age) has a mean value of (3.344) with a minimum and maximum value of (2.079, 4.736). This result is consistent with the values reported by Elsayed et al. (2023); Elhabashy et al. (2023) which reached mean values of (3.406, 2.745) respectively. Moreover, (Size) ranged from (16.414 to 24.938), with a mean value of (20.898). This finding goes in the same vein as these reported by Elsayed (2021); Osman (2022); Almaleeh et al. (2023) which revealed mean values of (20.494, 20.50, 20.711) respectively. For LEV, the mean value was (.482) with a minimum and maximum value of (.009, 1.831) respectively. This result comes in line with the findings of Zalata and Robert (2017); Zaher (2019); Elhabasy and Elkelety (2023) where the mean values were (.48, .425, .553) respectively; a high value of leverage indicates that firms in the study sample highly depend on liabilities to finance their activities. As for Growth, its minimum and maximum value reached (-.51, 1.531) respectively, with a mean value of (.102) this value comes in line with the average value of Hussien (2023) which reached (.133).

Regarding the interval variables represented in ICS, CFCS, and BIG4, the study found that the percentage of firms engaged in ICS reached (108)

observations at (45%). Additionally, the number of firms observations that engaged in CFCS reached (118) at (49.17%) Finally, the results indicated that around 33% of the study sample is being audited by BIG 4 firm with (80) observations.

### **4.3 Validation Tests of the OLS Models**

The degree of study models' validity and acceptability for statistical analysis can be ensured by performing four preliminary tests. These tests are normality of residuals, multicollinearity, autocorrelation, and heteroscedasticity. This can be explained as follows:

#### **4.3.1 Jarque-Bera Normality Test**

For testing the normality of residuals, the Jarque-Bera test was conducted. That is, if the P-value of the Jarque-Bera test is more than 0.05, this means that the residuals are normally distributed (Thadewald and Büning, 2007). This can be exhibited in table (6) as follows:

**Table (6): Jarque-Bera Normality Test Results**

<b>Models</b>	<b>MTB</b>		<b>ROA</b>	
	<b>Test statistic</b>	<b>P-value</b>	<b>Test statistic</b>	<b>P-value</b>
<b>1&amp;2</b>	29000	.000	130000	.000
<b>Result</b>	<b>Normality of residuals Problem</b>			

The results as illustrated in table (6), reveal that the P-value of the Jarque-Bera normality test for all study models were lower than 0.05, indicating that the residuals are not normally distributed.

#### **4.3.2 The Multicollinearity Test**

To verify the quality and validity of the study models, The multicollinearity test was conducted to detect the existence of the multicollinearity problem. As such problem may result in imprecise regression coefficients, failure to reach statistical significance, change in the predicted signs of coefficients, and substantial changes in the estimated coefficients when adding or removing a few observations (Asteriou and Hall, 2007). The study uses the collinearity diagnostic measure to identify two values of Variance Inflation Factor (VIF) and Tolerance. If the VIF value is less than (10) and the tolerance is greater than (.05), this indicates that there is no multicollinearity problem, and that the study models can explain the impact of EM practices on firm value (Shrestha, 2020). This can be illustrated in the table (7) as follows:

**Table (7): The Multicollinearity Test Results**

<b>Variables</b>	<b>Collinearity Statistics</b>
------------------	--------------------------------

	VIF	TOL
ICS	1.277	.783
CFCS	1.289	.776
BIG4	1.385	.722
Age	1.119	.894
Size	1.65	.606
LEV	1.513	.661
Growth	1.022	.978
<b>Result</b>	<b>No Multicollinearity Problem</b>	

As shown in table (7), the findings confirm the inexistence of multicollinearity problem as all study variables show VIF values less than (10) and tolerance values greater than (.05).

#### 4.3.3 The Autocorrelation Test

The study conducted an autocorrelation test to ensure that the residuals are not serially correlated because this problem may cause estimated variances of the regression coefficients to be biased and inconsistent and therefore, hypotheses testing is no longer valid (Asteriou and Hall, 2007). To identify the problem of serial autocorrelation, Wooldridge test was performed. That is, if the Wooldridge p-value is more than (.05), this infers no autocorrelation problem (Drukker, 2003). This can be illustrated in the table (8) as follows:

**Table (8): Wooldridge Test Results**

Models	MTB		ROA	
	F test	P-value	F test	P-value
1&2	186.500	.000	28.107	.000
<b>Result</b>	<b>Autocorrelation Problem</b>			

The results reported in table (8) show that the p-values of Wooldridge test for all study models were less than (.05), implying the presence of serial autocorrelation problem among the study variables.

#### 4.3.4 The Heteroscedasticity Test

To check for heteroscedasticity, or differences in variance of the errors in regression model, the study performed the White's test. A heteroskedasticity problem would be present if the p-value of White's test is less than (.05) (Asteriou and Hall, 2007). This can be explained in the table (9) as follows:

**Table (9): The Heteroscedasticity Test Results**

Models	MTB		ROA	
	Chi <sup>2</sup>	P-value	Chi <sup>2</sup>	P-value
1&2	46.89	.0434	231.70	.000
<b>Result</b>	<b>Heteroskedasticity Problem</b>			

As table (9) shows, the p-values of White's test were less than (.05) which indicates that the study models suffer from heteroskedasticity problem (having non constant variance of errors).

Accordingly, due to the presence of normality of residuals, autocorrelation, and heteroskedasticity problems in the study models; linear regression is no longer the best linear unbiased estimator, and the generalized least square regression (GLS) is to be employed because of its proper estimation for solving normality of residuals, autocorrelation, and heteroskedasticity problems and it has been adopted by previous studies such as (Al-Absy et al. 2018; Chakroun et al. 2021; Elhabasy and Elkelety, 2023; Musa et al. 2023; ; Almaleh et al., 2023; Mahmoud et al., 2023).

#### 4.4 Statistical Analysis for Testing Hypotheses

In this section, the findings of hypotheses testing, and results interpretations are presented.

##### 4.4.1 Investigating the Impact of Classification Shifting practices on Firm Value

For Investigating the impact of CS practices including ICS and CFCS on firm value, two alternative measures of firm value were utilized including MTB and ROA. To test the first hypothesis, the study employed GLS regression analysis. This can be explained by table (10) as follows:

**Table (10): GLS Regression Analysis Results for the Impact of ICS and CFCS on Firm Value**

Variable	Model (1): MTB		Model (2): ROA	
	B	P -value	B	P -value
ICS	-.175	.003***	.016	.000***
CFCS	.175	.01***	.013	.000***
BIG4	.287	.036**	.027	.021**
Age	.185	.13	-.003	.771
Size	.251	.000***	.036	.000***
LEV	-3.33	.000***	-.428	.000***
Growth	.854	.000***	.128	.000***
Constant	-3.431	.000***	-.538	.000***
<b>Model Summary</b>				
Wald Chi <sup>2</sup>	114.996		363.421	
p-value	.000		.000	
*** $p < .01$ , ** $p < .05$ , * $p < .1$				



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The results of the GLS regression analysis in the previous table (10) show a negative impact of ICS on MTB (coefficient =  $-.175$ , P-value =  $.003$ ), this evidence indicates that the greater intense of EM practices adversely affect share prices and consequently the value of the firm. Whereas the analysis reveals that the coefficient of CFCS is positive ( $.175$ ) with a p-value ( $.01$ ), such positive impact implies that managers' involvement in CS practices may mislead the market about the firm's economic performance, leading to an increase in the value of firms. Moreover, managers are more likely to engage in CS practices to meet the expectations of analyst forecast and stakeholders, and to show how their firms are more stable in the market in order to enhance its reputation and help investors better predict future performance which as a result reflects on the share price positively and ultimately increase the value of the firm in the short term (Abo Taleb, 2022). This result is inconsistent with Osman et al. (2022), who showed that firm engaging in CFCS suffer from lower firm value.

For control variables, the results show a positive impact of BIG4 on firm value (coefficient =  $.287$ , P-value =  $.036$ ), this result supports that BIG4 auditing firms can enhance the firm's value and their reputation in capital market. This is because investors perceive that firms who are audited by BIG4 firms provide proper, reliable, and authentic financial information which in turn improves investors' confidence and increase firm value accordingly. This result is in accordance with research conducted by (Afza and Nazir, 2013; Alfraih, 2016; Wijaya, 2020) However, this finding is contrary to results reported by Yolandita, and Cahyonowati (2022) which showed a negative impact of BIG4 on firm value.

Furthermore, the findings show that firm value is positively influenced by Size, (coefficient =  $.251$ , p-value =  $.000$ ). Such result indicate that investors tend to be more interested in firms with large scale as large firms are in a more stable financial condition, more stable operations, relatively more able to generate profits, and more flexible in obtaining funds due to the accessibility to the capital market. Therefore, investors interpret this as a positive signal concerning the firm's ability to provide a greater rate of return, which as a result increases stock prices and increases the firm's value accordingly. This result is consistent with the results of (Mohamed, 2017; Atiningsih and Izzaty, 2021; Marpaung et al., 2022). In contrast, (Susanti and Restiana, 2018; Hirdinis, 2019) confirmed that Size has a negative impact on firm value. (Antro et al., 2020) proved that Size has no effect on firm value.

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Regarding leverage, the results reveal a negative impact of leverage on firm value with a coefficient value of (- 3.33) and p-value = (.000). These results confirm that low leveraged firms are more likely to create value for shareholders. This is consistent with the findings of (Vo and Ellis, 2017; Mohamed, 2017; Gharaibeh and Qader, 2017) who revealed that the higher the leverage, the firm value is lower. However, these findings contradict the findings of Yuliyanti et al. (2021) which revealed a positive and significant effect of leverage on firm value.

Moreover, the results indicate the existence of a positive impact of Growth on firm value with a coefficient value of (.854) and p-value = (.000). The reason is that the existence of asset growth opportunities provides a positive signal about the firm's growth in the future and indicates that the firm's performance is improving. i.e., firms with rapid growth opportunities are expected to have better value as these firms are favorable to investors who have higher prospects for recovering their investment. These results are in line with the research results of (Badruzaman et al., 2019; Marpaung et al., 2022). In contrast the findings of Nurdiansari et al (2022) showed no significant impact of Growth on firm value.

On the other hand, (Age) has an insignificant impact on firm value with a p-value greater than (.05). Although this result contradicts with research conducted by (Leite and Carvalhal, 2016; Susanti and Restiana, 2018) who found a positive impact of firm age on firm value. Whereas research conducted by (Chay et al., 2015) showed a negative impact of firm age on firm value.

Turning to the second measure of firm value (ROA), the results report a positive impact of ICS and CFCS practices on ROA with regression coefficients of (.016, .013) and p-values less than (.01). With regard to the control variables, evidence shows that only (Age) has an insignificant impact on ROA (p-value >.05). While the coefficient values of other control variables (BIG4, Size, and Growth) are positively significant (coefficients =.027, .036, .128) and (p-values = .021, .000, .000). But (LEV) had a coefficient value of (-.428) and significant value of (.000), implying that there is a negative impact of LEV on firm value.

Table (10) also indicates that the proposed models have a high fit because the overall significance of both models had p-values of (.000) and Wald Chi<sup>2</sup> values of (114.996, 363.421) respectively. Thus, the regression equations for investigating the impact of ICS shifting and CFCS on firm value can be presented as follows:

MTB= -3.431 - .175 (ICS) +.175 (CFCS) + .287 (BIG4) + .185 (Age)+ .251 (Size) - 3.33 (LEV) + (.854) Growth.

ROA= -.538 +.016 (ICS) +.013 (CFCS) + .027 (BIG4) -.003 (Age)+ .036 (Size) -.428 (LEV)+ .128 (Growth).

As a result, the first hypothesis (*H1*) related to “Income classification shifting and cash flow classification shifting have an insignificant impact on the value of firms listed in the Egyptian Stock Exchange” is rejected.

#### 4.4.2 Investigating the differences among Sectors regarding the Study Variables

The study relied on the Kruskal-Wallis Test for comparing MTB, ROA, ICS, and CFCS, among sectors in ESE. Where a significant level less than (.05) indicates the existence of significant differences among sectors in ESE regarding the study variables. This can be illustrated through the following tables:

**Table (11): Kruskal-Wallis Test Results for investigating the differences among Sectors regarding MTB**

MTB				
Sectors	Mean rank	Sig.	Chi <sup>2</sup>	Ranking up
Contracting and Construction Engineering	89.50	<b>.000</b>	<b>41.197</b>	6
Health care, pharmaceuticals	<b>176.60</b>			1
Basic resources	133.86			2
Travel & Leisure	<b>88.77</b>			7
Building materials	96.87			5
Industrial goods, services, and Automobiles	124.87			3
Real estate	124.67			4

Table (11) shows that the test significance level for MTB was (.000) which is lower than (.05), indicating the existence of significant differences among ESE regarding MTB for a chi<sup>2</sup> value of (41.197). This is apparent from the expansion in the mean rank of MTB among ESE which ranges from (88.77 to 176.60). The mean rank of the sectors (Contracting and Construction Engineering, Health care, pharmaceuticals, Basic resources, Travel & Leisure, Building materials, Industrial goods, services, and Automobiles, Real estate) amounted to (89.50, 176.60, 133.86, 88.77, 96.87, 124.87, 124.67) respectively.

**Table (12): Kruskal-Wallis Test Results for investigating the differences among Sectors regarding ROA**

ROA				
Sectors	Mean rank	Sig.	Chi <sup>2</sup>	Ranking up
Contracting and Construction Engineering	121.27	.000	51.695	4
Health care, pharmaceuticals	168.34			1
Basic resources	117.80			5
Travel & Leisure	95.06			6
Building materials	58.97			7
Industrial goods, services, and Automobiles	153.17			2
Real estate	123.91			3

Along with the results from table (12), it is noted that ROA significant level is (.000) which is less than (.05) with a chi<sup>2</sup> value (51.695), this reveals that there are significant differences among ESE. The mean rank was between the minimum and maximum range of (58.97, 168.34). The mean rank of the sectors (Contracting and Construction Engineering, Health care, pharmaceuticals, Basic resources, Travel & Leisure, Building materials, Industrial goods, services, and Automobiles, Real estate) amounted to (121.27, 168.34, 117.80, 95.06, 58.97, 153.17, 123.91) respectively. The increase in the mean rank is the reason for the significant difference among ESE Sectors concerning ROA.

**Table (13): Kruskal-Wallis Test Results for investigating the differences among Sectors regarding ICS**

ICS				
Sectors	Mean rank	Sig.	Chi <sup>2</sup>	Ranking up
Contracting and Construction Engineering	122.50	.602	4.554	2
Health care, pharmaceuticals	117.93			5
Basic resources	121.36			4
Travel & Leisure	<b>138.50</b>			1
Building materials	118.50			3
Industrial goods, services, and Automobiles	114.50			6
Real estate	<b>111.83</b>			7

It can be seen from the results in the table (13) that the significant level for ICS was (.602) which is more than (.05), indicating no significant differences among ESE Sectors concerning ICS for a chi<sup>2</sup> value of (4.554) with a minimum and maximum mean rank (111.83, 138.50) respectively. The mean rank of the sectors (Contracting and Construction Engineering, Health care, pharmaceuticals, Basic resources, Travel & Leisure, Building materials,

Industrial goods, services, and Automobiles, Real estate) amounted to (122.50, 117.93, 121.36, 138.50, 118.50, 114.50, 111.83) respectively. The decrease in the mean rank among ESE Sectors indicates that there are no significant differences among ESE Sectors regarding ICS.

**Table (14): Kruskal-Wallis Test Results for investigating the differences among Sectors regarding CFCS**

CFCS				
Sectors	Mean rank	Sig.	Chi <sup>2</sup>	Ranking up
Contracting and Construction Engineering	117.50	.357	6.625	4
Health care, pharmaceuticals	130.07			6
Basic resources	112.93			3
Travel & Leisure	<b>109.50</b>			1
Building materials	129.50			5
Industrial goods, services, and Automobiles	<b>137.50</b>			7
Real estate	112.17			2

Referring to CFCS, it is noted that its significant level is (.357) which is more than (.05) with a chi<sup>2</sup> value (6.625), this reveals that there are no significant differences among ESE Sectors. The mean rank is between the minimum and maximum range of (109.50, 137.50). The mean rank of the sectors (Contracting and Construction Engineering, Health care, pharmaceuticals, Basic resources, Travel & Leisure, Building materials, Industrial goods, services, and Automobiles, Real estate) amounted to (117.50, 130.07, 112.93, 109.50, 129.50, 137.50, 112.17) respectively. The decrease in the mean rank among ESE Sectors indicates that there are no significant differences among ESE Sectors regarding CFCS.

Based on the above, the second hypothesis (*H2*) which indicated that “**There are insignificant differences among sectors in Egyptian Stock Exchange regarding the study variables**” is rejected.

## 5. Conclusions:

This study aimed to examine the impact of CS practices on firm value by utilizing a sample of 48 firms listed in the ESE from 7 sectors with 240 observations during the period from 2017 to 2021. The current study empirically investigates the impact of CS practices, including ICS and CFCS,

on the value of firms. By using MTB and ROA as proxies for firm value, the study reported the following findings:

The results found a significant negative impact of ICS on MTB whilst CFCS revealed a significant positive influence on MTB. Moreover, evidence showed a significant positive impact of ICS and CFCS practices on ROA. Such positive impact implying that managers' involvement in EM practices could mislead the market about the firm's economic performance, leading to an increase in the value of firms, concluding that managers are more likely to engage in EM practices to meet the expectations of analyst forecast and stakeholders, and to show how their firms are more stable in the market in order to enhance its reputation and help investors better predict future performance which as a result reflects on the share price positively and increase the value of the firm in the short term accordingly. To conclude, the impact of EM practices on firm value mainly depends on how managers employ them i.e., informative perspective or opportunistic perspective. Taken together, their impact on firm value could be positive in the short term but such positive impact might be changed in the long term when using a long time period.

Referring to control variables, the results confirmed that the firm value measured by MTB and ROA was positively and significantly influenced by BIG4, Size, and Growth but negatively and significantly affected by LEV, indicating that these variables are more influential and play a crucial role in determining firm value. On the other hand, Age was shown to be insignificant for MTB and ROA.

The results reported the existence of significant differences among sectors in ESE regarding the study variables including MTB, ROA but insignificant differences regarding ICS, and CFCS.

When investigating the existence of ICS and CFCS practices in Egyptian firms the study concluded that Egyptian firms are more prone to engage in ICS practices by shifting COGS to OEXP in order to inflate gross profit rather than shifting OI to total revenues, showing a positive and significant impact of OEXP on UGP but OI had insignificant impact on UGP. Moreover, the results illustrated that Egyptian firms are more inclined in CFCS practices by shifting operating cash flows as investing and financing cash flows, as a negative and significant impact of INV and FIN was found on UNCFO.

The study findings should be of interest to standard setter, regulators, investors, and auditors, as these results highlight the importance of an awareness of earnings management issue and its impact on the value of firms.



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Therefore, some recommendations can be given as follows: Firstly, for standard setter the findings emphasize the necessity to set enough standards and regulations that mitigate the managers' opportunistic behavior. Disclosure requirements should be enhanced as they offer more opportunities for managers to manipulate earnings. Secondly, regulators should refine monitoring systems; more aggressive penalties must be imposed on firms involved in EM practices. Thirdly, investors should make a comprehensive review of financial statements items before making investment decisions, as well they should be cautious and aware of the items disclosed individually within the financial statement instead of depending mainly on aggregate figures for portfolio evaluation. Fourthly, auditors should be more vigilant about the seriousness of earnings manipulation to search for more relevant techniques that better detect and limit such practices. Finally, classification shifting is still a relatively new issue of research especially in the Egyptian environment. Future research should pay great attention to such a tool to get a deeper understanding of EM in order to suggest more remedies for such practices.

The current study has some limitations that can be considered as suggestions for future research. The sample employed in this study is limited to nonfinancial Egyptian firms, using just five years as a study period. As such, future research can extend the study sample to include banks and financial firms, moreover, using a longer period may lead to different results. The study depends mainly on the manipulation of gross profit rather than core earnings to investigate the existence of income classification shifting practices. However, there are many additional forms of income classification shifting for inflating core earnings (operating profit) that future studies might investigate such as misclassifying core expenses as income decreasing special items or non-operating expense and misclassifying non-operating revenues as total revenues. Considering the potential impact of adopting IFRS on the classification shifting practices can be addressed by future research to investigate the changes in Egyptian firms' behavior pre and post IFRS implementation. Another avenue for future research would be to empirically explore the factors that could affect managers' choice of CS technique such as audit quality, corporate governance, accounting standards, firm life cycle, gender diversity, and managerial ability. More future studies are needed to explore this topic in other countries and economies.

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