Gross Profit Manipulation through Classification Shifting: Evidence from the Egyptian Environment.

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Abstract

The existing studies about classification shifting in the income statements concentrate mainly on the misclassification of core expenses items as non- recurring expenses items, in order to manipulate core earnings. This study aims to extend the previous studies of classification shifting by examining the potential shifting of not only expenses items but, also, revenue items in order to inflate gross profit. By using a sample of 494 Egyptian listed firm-years observations in the period from 2016 to 2018, this study investigates the manipulation of gross profit through the shifting of both Costs of Goods Sold (COGS) to Selling, General and Administrative (SG&A) expenses and, also, the shifting of other Operating Incomes (OI) to total operating revenues. The results indicate that Egyptian listed firms are more likely to engage in classification shifting of revenues but not in classification shifting of expenses. Further, this study provides evidence of the impact of institutional ownership on classification shifting of expenses and, also, the impact of governmental ownership on the classification shifting of revenues.

Key Words

Classification shifting; gross profit manipulation; earnings management; ownership structure; Egyptian environment.

1. Introduction

Earnings management is a hot topic that affects the credibility of financial statements and, hence, the earnings quality which, in turn, affects the quality of the accounting information delivered to stakeholders (Poonawala and Nagar, 2019). Most of the previous literature has discussed the opportunistic role of managers in manipulating the accounting information through either accrual or real earnings management in order to mask the firm's true economic performance with less studies on other less costly methods such as classification shifting (McVay, 2006; Zalata and Roberts, 2017; Mailkov *et al.,* 2018).

Classification shifting is an earning management tool that misclassifies some items in the income statements deliberately in order to inflate earnings through either the down shifting of expenses or increasing the revenues in the income statements (McVay, 2006). Previous classification sifting studies have concentrated mainly on the manipulation of core earnings through the shifting of core expenses items down from the Cost Of Goods Sold (COGS) and Selling, General and Administrative (SG&A) expenses to special expenses presented in the income statements (e.g. McVay, 2006; Fan *et al.* 2010; Barua *et al.,* 2010; Zalata and Roberts, 2017). However, few studies have

examined either the manipulation of other accounting information (e.g., gross profit and operating profit) instead of core earnings (Fan and Liu, 2017; Noh *et al.,* 2017; Malikov *et al.,* 2018; Poonawala and Nagar, 2019), or the misclassification of revenue items (Noh *et al.,* 2017; Malikov *et al.,* 2018).

With regards the Egyptian environment, the Egyptian Accounting Standards (EAS) prohibit firms from disclosing either extraordinary or non-normal expenses within the income statements. That is, one might argue that Egyptian firms cannot mislead investors by misclassifying some of their recurring expenses as extraordinary or non-normal expenses within the income statement. However, Egyptian firms are increasingly and voluntarily disclosing other subtotals within the income statement such as gross profit and operating income. Given the importance of the gross profit and operating income, I argue that Egyptian firms might misclassify some of their cost of goods sold items (*COGS*) as general and administrative expenses (*SG&A)* in order to artificially inflate their gross profit. In addition, given the fact that Egyptian firms are allowed to disclose other income (OI) within their income statement, some Egyptian firms might exploit this and misclassify some of their OI as operating revenues in order to mask their gross profit. Consequently, the initial objective of this study is to investigate whether Egyptian firms shift down some of their *COGS* to *SG&A* expenses and investigate the shifting up of the *OI* item to total

operating. This study is among the first to investigate these tools within the Egyptian context and therefore the finding of this study would have an important policy implications not only for Egyptian standard setters but also for potential investors.

On the other hand, this study goes further step and investigate whether corporate governance influence firms' ability in engaging in such practices. Most previous studies have examined the role of Corporate Governance (CG) mechanism in mitigating two of the earnings management tools. These are: namely, accrual management; and real earnings management. However, few studies have explored the impact of CG variables on the management's deliberate attitude of using classification shifting to inflate the reported earnings figures. In order to achieve certain interests, a firm's managers can influence the informativeness of earnings through the manipulation of the gross profits. However, the informativeness of earnings can be raised by applying strong monitoring systems that control and govern the mangers' opportunistic behaviors (Dechow *et al.,*1996; Chung *et al.,* 2002; Garca-Meca and Sanchez-Ballesta, 2009).

CG mechanism can provide the solution to the managers' deliberate attitude in manipulating the firm's gross profits. CG attributes achieve a balance between the managers' interests and the shareholders' interests. These attributes increase the reliability of the disclosed information on which the stakeholders depend when making their decisions and, hence, increase their

credibility on presented statements (Man and Wong, 2013; Garca-Meca and Sanchez-Ballesta, 2009). Accordingly, when it comes to monitoring the managers' behaviors, a strong CG structure provides the firm with a strong base which may mitigate their opportunistic attitudes and, hence, reduce their willingness to use classification shifting.

Among all CG variables, ownership structure attributes are the factors that exert a strong influence on the reliability of financial reporting. The separation between ownership and control leads to serious conflicts between the shareholders' and the managers' interests that arise from their different attitudes (Alexander, 2019). A firm's managers seek to use earnings management to maximize their wealth at the expense of the shareholders. Agency theory posits that a strong monitoring mechanism can mitigate this conflict of interests and can achieve an alignment between both the managers and the shareholders' interests (Alves, 2012).

Accordingly, many studies have illustrated the potential impact of ownership structure variables, such as insider ownership, block-holder ownership, institutional ownership, governmental ownership and foreign ownership, on the magnitude of the managers' behaviors related to earnings management (e.g., Al-Fayoumi *et al.,* 2010; Alves, 2012; Ben-Nasr *et al.,* 2015; Poli, 2015; Guo and Ma, 2015; Alexander, 2019; Capalbo *et al.,* 2018). However, little attention has been paid to investigate the relationship between ownership structure and classification shifting.

In Egypt, the Egyptian listed firms' ownership structure is characterized by mixed ownership. Some firms have diffuse ownership which includes a variety of ownership such as institutional, family, foreign, governmental and managerial ownership. However, the others have a more concentrated form of ownership. This diversity in the nature of the ownership structure adds more motivation to study this structure in the Egyptian context. Accordingly, this study's second aim is to investigate the impact of ownership structure on the Egyptian firms' classification shifting.

The results indicate the prevalence of the misclassification of revenue items. When seeking the manipulation of gross profits, the Egyptian listed firms' managers prefer to shift *OI* to total operating revenues rather than shifting *COGS* to *SG&A* expenses. Moreover, the findings demonstrate that the ownership structure has an impact on the classification shifting of both expenses and revenues. More specifically, institutional ownership restricts the Egyptian managers' behaviors in shifting *COGS* to *SG&A* expenses. Similarly, Egyptian Government ownership reduces the Egyptian managers' incentives to misclassify *OI* as total operating revenues.

Several contributions have been added to the existing literature on earnings management. First, existing studies on classification shifting have focused mainly on developed countries (e.g., US and UK) and have been conducted in a more stable capital market environment. This study adds to the extent studies by concentrating on one of the developing countries, namely Egypt,

in order to explore another context and culture that may motive managers to engage in using the classification shifting tool. The exploration of the Egyptian context provides additional evidence on the widespread use of such a tool.

Second, when aiming to inflate core earnings, most previous studies have focused on the misclassification of expenses rather than on revenue line items. Further, few studies have examined the manipulation of sources of earnings other than core earnings. This study contributes to the extant literature by investigating the manipulation of gross profit through the shifting of both expenses and revenues line items. The study provides the first empirical evidence of the shifting of *OI* to total operating revenues in order to inflate gross profits. Third, while many studies have explored CG's impact on either accrual or real earnings managements, few studies have demonstrated CG's influence on classification shifting (Haw *et al.,* 2011; Zalata and Roberts, 2016; Joo and Chamberlain, 2017). Among the CG variables, ownership structure has received little attention in the classification shifting literature. To the best of the author's knowledge, this study provides a novel construct when examining the association between ownership structure and classification shifting. This study provides the first empirical evidence of the impact of institutional and governmental ownerships on classification shifting.

The rest of the paper is organized as follows. Section two discusses the current situation of applied IFRS in the Egyptian

environment. Section three reviews the previous studies of classification shifting and develops this study's main hypotheses. Section four constructs the research design and describes the data collection and sample. Section five presents the empirical findings and robustness checks. Finally, section six concludes the study.

2. The Egyptian Standards and IFRS

Currently, although Egypt has applied most of the IFRS principles, it has not formally adopted IFRS. In 2019, the Egyptian Minister of Investment issued the Ministerial Decree No. 69 of 2019 which amended some provisions of the Egyptian Accounting Standards that were issued in 2016. Most of the Egyptian standards are compatible with IFRS. As regards the items disclosed in the income statements, the EAS prohibit the Egyptian firms from disclosing any extraordinary or unusual items in their income statements. The absence of those items may raise a question about the possibility of applying the classification shifting tool in the Egyptian environment. Consequently, this increased my motivation for conducting this study.

In addition, all Egyptian firms disclose in their income statements the gross profit line, expenses items (e.g., *COGS* and *SG&A*), and revenues items (e.g., *OI*). This may encourage their mangers to manipulate gross profit figures through shifting to and from these expenses and revenues items in order to mask their real economic performance. Consequently, the Egyptian environment provides good reason for exploring the

classification shifting tool either in the revenues or expenses sides in order to establish if these siftings lead to the manipulation of gross profit.

3. Literature Review and Development of Hypotheses

3.1 Literature Review

In order to achieve certain benefits, managers choose earnings management in respect of actions that deliberately affect the firm's earnings (Man and Wang, 2013). Previous studies have concentrated on two tools of earnings management. These are, firstly, accrual management which concentrates mainly on either income –acceleration or reduction of expenses in order to manipulate the earnings in the current period (e.g., Kothari *et al.,* 2005; Dechow *et al.,* 2012). Secondly, there are real earnings management which concentrates on altering the timing or structuring the real activities, performed by the firms, in order to manipulate the earnings in the current period (e.g., Roychowdhury, 2006; Gunny, 2010). However, few studies have examined the third type of earnings management i.e. classification shifting which concentrates on the deliberate misclassification of revenues and expenses items through moving them up and down in the income statements in order to inflate the sub-aggregates figures (e.g., core earnings, gross profit and operating profits) while keeping the aggregate figure (net income) constant (McVay, 2006; Fan *et al.,* 2010; Barua *et al.,* 2010; Haw *et al.,* 2011; Zalata and Roberts, 2016; Noh *et al.,* 2017; Poonawala and Nagar, 2019).

The initial literature on classification shifting has concentrated primarily on the shifting of core expenses to non-recurring items in order to inflate core earnings. McVay's (2006) is one of the pioneering studies of classification shifting in that its findings provide the first evidence of classification shifting by American companies. She found a positive relationship between unexpected core earnings and income – decreasing special expenses. Similarly, from using American companies' quarterly data, Fan et al.'s (2010) study findings conclude that, for companies which either only meet or beat the analysts' forecasts, classification shifting is more likely to happen in the fourth quarter rather than in other quarters. In the UK context, Zalata and Roberts' (2017) study findings demonstrate that, following the adoption of IFRS, UK managers are more likely to misclassify some recurring items as non-recurring items in order to overstate the reported core earnings.

In addition, some studies have discussed additional aspects related to classification shifting. For example, Barua et al. (2010) report that managers are also most likely to employ expenses shifting through using discontinued operations to inflate core earnings. Lail et al. (2014) provide evidence about the prevalence of classification shifting amongst the segments in the firms. Alfonso et al. (2015) indicate that managers engage in shifting when the market over-prices their firms' core earnings. Li and Guo, (2018) report a significant positive cross-sectional

relationship between the magnitude of abnormal audit fees and the level of classification shifting.

When making comparisons with other earnings management tools, Athanasakou *et al.,* (2009) conclude that, rather than using accrual management, large UK companies shift small core expenses to other non-recurring items in order to achieve the earnings targets. Further, Abernathy *et al.* (2014) provide empirical evidence of the use of classification shifting when, due to their constraints, managers are unable to use accrual and real earnings management tools.

These existing studies have focused on the boosting of core earnings as the primary performance measure that motivates the classification shifting of operating items. However, little attention has been paid to the manipulation of other performance metrics such as gross profit. Fan and Liu's (2017) findings indicate an association between the misclassification of *COGS-* but not *SG&A* – and just beating the benchmark of gross margin earlier than in the fourth quarter. Further, from their study's findings, they conclude that mangers use real earnings management of *COGS* to manipulate gross margin benchmark rather than core earnings benchmarks. Poonawala and Nagar's (2019) findings provide empirical evidence of the misclassification of COGS as operating expenses in order to only just meet the previous period's gross margin.

Most remarkably, most previous studies have focused on examining the shifting of operating expenses to nonrecurring expenses. Few studies have examined the misclassification of non-operation revenues as operating revenues. For example, from their findings, Noh *et al.,* (2017) conclude that, during the IFRS adoption period, Korean firms misclassified *OI* but not special expenses items in order to boost operating income. This behavior continues, also, when the managers' abilities to manipulate accrual is constrained. Further, by using a sample of 12,804 UK listed firm- year observation, Malikov *et al.,* (2018) illustrate that, in order to manipulate operating earnings, firms are more likely to misclassify non-operating revenues in the period following the mandatory adoption of IFRS.

In terms of the association between CG and classification shifting, few studies have explored this association. How *et al.* (2011) indicate a positive association between family-controlled firms and the degree of misclassification. In the UK, Zalata and Roberts (2016) report that strong internal governance, represented by the quality of board and audit committees, mitigates the classification of some recurring expenses as non-recurring. More specifically, long tenure and independence restricted the classification shifting behavior. However, more CEO directors and greater share ownership may increase the incentives to engage in classification shifting. Further, Joo and Chamberlain, (2017) conclude that strong CG practices mitigate

the managers' opportunistic attitudes to misclassify core expenses as non-recurring expenses.

2.3 Development of Hypotheses

2.3.1. Gross profit manipulation through classification shifting

Most previous studies argue that companies misclassify core expenses in order to inflate core earnings. Their findings are supported by the significant relationship between unexpected core earnings and special items. Further, due to the lower cost of classification shifting, these studies have discussed the preference to do so rather than use other earnings management tools. However, few attempts have been made to examine another direction of items' shifting and to explore another earnings figure i.e., gross profit.

Gross profit is characterized by many features that increase its importance (Poonawala and Nagar, 2019). It is the closest line items to sales; these reflect the firms' profitability and carry critical valuation implications (Fan and Liu, 2007). Many studies have argued that gross profit is more sustainable than core earnings and, hence, represents a more helpful performance metric to investors who respond differently to items according to their closeness to sales. This is because gross profit reflects directly the firm's sustainability and efficiency (Fan and Liu, 2017; Poonawala and Nagar, 2019). Accordingly, managers may be motivated to manipulate gross profit trough classification shifting and, more especially, when they have greater incentives to mask their firms' true economic performance and gain favorable valuations.

Despite the importance of gross profit as a performance indicator, few previous studies have examined the possibility of its manipulation through classification shifting. From their findings, Fan and Liu (2017) report that managers manipulate gross profit by shifting only *COGS* rather than *SG&A* to special items. Further, Poonawala and Nagar (2019) indicate that managers shifted *COGS* to both R&D and *SG&A* expenses in order to just meet the previous period's gross margin.

According to the Egyptian environment, the gross profit figure is more comparable than core earnings. Egyptian firms may not disclose the information required to calculate core earrings and, consequently, this makes it more difficult for investors to obtain this figure. On the contrary, all Egyptian firms disclose gross profit in their income statements which aid investors in using this figure when making their future decisions. Therefore, Egyptian firms may be motivated to perform classification shifting as an earnings management tool in order to manipulate gross profit and to keep core earnings constant.

Based on the above arguments which indicate the importance directed to gross profits by investors and managers as a separate line item, and the lower cost attached to shifting COGS to SG&A expenses when compared to the other earnings management tools in the Egyptian environment, the premise of this study is that the managers of the Egyptian firms use the classification shifting tool

in order to manipulate gross profit. Consequently, this study's first hypothesis is:

H1: Egyptian firms misclassify COGS as SG&A expenses in order to manipulate gross profit.

With regard to the revenue side, there is a dearth of research studies on the misclassification of *OI* as total operating revenues in order to manipulate gross profit. For many reasons, firms may prefer to concentrate on the shifting of revenue items (Malikov *et al.,* 2018). Firms can attract investors quickly by using expense shifting to boost operating revenues arising from shifting revenues and reducing operating expenses. This suggests that, when valuing firms' performance, investors pay more attention to the operating revenues subtotal. Further, revenues shifting enables firms to meet sales revenues and earnings forecasts whilst expenses shifting may not achieve this outcome. Moreover, the disclosure, which is gained from non-recurring items, may reduce operating earnings. In turn, this may affect the firms' abilities to meet or beat core earnings benchmarks.

Although the above arguments have paid little attention towards revenues shifting, from their findings, Noh *et al.* (2017) predict that managers are more likely to mask optimistically their discretion through classifying other income as operating revenues. They conclude that managers engage in classification shifting of both revenues and expenses in order to inflate their operating income and to improve their firms' performance. In

addition, Malikov *et al.* 's (2018) findings provide empirical evidence that, more especially in the post-IFRS period, firms misclassify non-operating income as operating revenues in order to increase their operating revenues.

According to the Egyptian environment, firms disclose *OI* in an aggregate form while presenting the details and components of this figure in the notes to their income statements. Egyptian standards do not require the disclosure of *OI* subtotals. This may increase the Egyptian firms' motivation to use their discretion to opportunistically shift revenue items between different subtotals (Malikove *et. al.,* 2018) and, hence, increase the desired misclassification of revenue items in order to inflate gross profit.

Given the importance of revenue shifting in both the international and Egyptian contexts, this study postulates that Egyptian firms' managers misclassify OI as total operating revenues in order to inflate gross profit. Consequently, this study's second hypothesis is:

H2: Egyptian firms misclassify other operating income as total operating revenues in order to manipulate gross profit.

2.3.2 The impact of ownership structure on classification shifting

Agency theory indicates a divergence in interests between managers and owners; this is due to the separation between ownership and control. Managers are motivated to maximize their interests by increasing their wealth (i.e., rewards and bonuses) by managing earnings but not transferring this wealth to

shareholders. Ownership structure is one of the most important monitoring mechanisms which helps to constrain the prevalence of earning management behavior (Alves, 2012). Firms, which are listed on the stock exchange, are characterized by complicated ownership structures (Alexander, 2019) and, therefore, this may affect the classification shifting behavior.

Extant literature argues two points of view in relation to the association between ownership structure and earnings management tools (Man and Wang, 2013). The first is the alignment hypothesis which occurs when the firm's owners are, also, the managers. Thereby, there is no such conflict in such a situation and, in turn, this reduces the agency problem. The second is the entrenchment hypothesis which occurs when the firm's mangers are not the owners, Therefore, there is a conflict of interests which leads the managers to maximize their wealth at the expense of the firm's shareholders.

Previous studies have examined the different types of ownership structure in order to ascertain their impact on the occurrence of earnings management tools and have reported inconclusive results (Yeo *et al.,* 2002; Rajgopal *et al.,* 2002; Davidson *et al.,* 2005; Sanchez-Ballesta and Garsa-Meca, 2007; Cornett *et al.,* 2006; Siregar and Utama, 2008; Chen *et al.,* 2008; Al-Fayoumi *et al.,* 2010; Alves, 2012; Guo and Ma, 2015; Alexander, 2019). However, researchers have paid little attention to the impact of different types of ownership structure on the

classification shifting tool. In order to test if firms' ownership structures perform an effective monitoring role on classification shifting, this study examines four types of ownership structure. These are: concentrated ownership; insider ownership; institutional ownership; and governmental ownership.

2.3.2.1 Concentrated ownership

Two contradictory views have been expressed about the relationship between concentrated ownership and earnings management. First, the efficient monitoring hypothesis postulates that, when compared to small shareholders, large shareholders are able to actively monitor management actions in order to protect their investments and restrict the managers' opportunistic behaviors to manipulate earnings. Accordingly, based on the efficient monitoring hypothesis, concentrated ownership mitigates classification shifting as one of earnings management tools (Ali *et al.,* 2008).

Second, the expropriation hypothesis states that large shareholders seek to increase their investment returns through exercising their control in order to maximize their benefits and to expropriate the interests of the minority shareholders. Therefore, they may not encourage the firm's managers to report high quality earnings but in order to achieve their own gains, encourage the managers instead to engage in classification shifting (Zhong *et al.,* 2007; Jaggi and Tsui,2007).

The empirical findings of the relationship between concentrated ownership and earnings management show mixed results. Yeo *et al.,* 2002; Ali *et al.,* 2008; Alves, 2012 report that concentrated ownership reduces earnings management. On the other hand, Zhong *et al.,* 2007; Kim and Yoon, 2008, indicate a positive association between concentrated ownership and earnings management. From their findings, Davidson *et al.,* 2005; Sanchez-Ballesta and Garcia-Meca, 2007 Al-Fayoumi *et.al.,* 2010 show this to be an insignificant relationship. Consequently, based on the above discussion, this study's third hypothesis on the effect of concentrated ownership on classification shifting is as follows:

H3: There is a significant relationship between concentrated ownership and classification shifting for Egyptian listed firms.

2.3.2.2 Insider ownership

Agency theory states that the conflict in interests between the firm's shareholders and the managers can be mitigated by increasing insider ownership. The alignment hypothesis postulates that the convergence in interests between shareholders and the managers leads managers to improve earnings informativeness through effective management of earnings and constrains their opportunistic behaviors to misclassify items in the income statements (e.g., Warfield *et al.,* 1995; Siregar and Utama, 2008).

On the other hand, deduced from the entrenchment hypothesis, the conflict in interests between the shareholders and the managers motivates managers to maximize their values at the expense of the

shareholders' wealth. Accordingly, a high level of insider ownership increases the managers' motivation to manipulate earnings through classification shifting in order to increase their personal goals (Yeo *et al.,* 2002; Sanchez-Ballesta and Garcia-Meca 2007).

With regard to the association between insider ownership and earnings management, the findings are inconclusive. Yeo *et al.* (2002); Sanchez-Ballesta and Garcia-Meca (2007) and Al-Fayoumi *et.al.* (2010) show that there is a positive relationship between insider ownership and earnings management. In addition, Warfield *et al.* (1995); Ali *et al.* (2008) and Alves (2012) illustrate that low insider ownership increases the efficiency of managing earnings. However, the findings of Gabrielsen *et al.,* 2002 and Rajgopal *et al.,* 2002 show this to be an insignificant relationship.

Based on the above discussion, this study's fourth hypothesis is as follows:

H4: There is a significant relationship between insider ownership and classification shifting for the Egyptian listed firms.

2.3.2.3 Institutional ownership

Institutional ownership refers to the shares holding by institutions (e.g. pension funds, investment companies and financial companies such as banks and insurance companies) (Alexander,2019). Based on the efficient monitoring hypothesis, institutional investors have more resources, information and

opportunities to perform an active role in monitoring the managers' activities. In turn, this mitigates their opportunistic tendencies to perform earnings management through classification shifting (Chung *et al.,* 2002; Koh 2003; Almazan *et. al.,* 2005; Cornett *et al.,* 2006; Sirat 2012).

Contrary to the efficient monitoring hypothesis, the passive hand-off hypothesis argues that, due to their short –term orientation, institutional investors are unable to perform an active monitoring role on the managers' activities because they focus mainly on the firm's current earnings rather on its long-term earnings. By doing so, this may increase the managers' abilities to perform classification shifting (Duggal and Millar, 1999; Sundaramurthy *et al.,* 2005).

Many previous studies have examined the association between institutional ownership and earnings management. One group of studies (Rajgopal *et al.,* 1999; Koh, 2003; Alves, 2012; Alexander, 2019) report a significant positive relationship while another group of studies (Chung *et al.,* 2002; Hsu and Koh, 2005; Cornett *et al.,* 2006; Koh, 2007; Sirat 2012), report a negative relationship between institutional ownership and earnings management. However, a third group (Siregar, and Utama, 2008; Al-Fayoumi *et al.,* 2010) report that this relationship is insignificant. Accordingly, in the Egyptian context, this study's fifth hypothesis is as follows:

H5: There is a significant relationship between institutional ownership and classification shifting for the Egyptian listed firms,

2.3.2.4 Governmental ownership

Governmental ownership refers to the stake in one firm that is held by governmental bodies. Previous studies have indicated two different views to justify the relationship between governmental ownership and earnings management (Capalbo *et al.,* 2018). The first view assumes that governmental ownership increases the managers' motivation to engage in classification shifting. The reasons for this assumption are attributed to the unique characteristics of firms with high governmental ownership such as: the lower level of governance and audit quality (Wang *et al.,* 2008; Chen *et al.*, 2008; Cheng *et al.,* 2015; Capalbo *et al.,* 2018); the increased accessibility to different preferential financing resources through political connections (Ma *et al.,* 2010; Guo and Ma, 2015; Ben-Naser *et al.,* 2015); and the various political objectives (Ben-Naser *et al.,* 2015).

The second view argues that the role of governmental ownership reduces the tendency to perform classification shifting. The reasons for this view are deduced from many arguments such as: the monitoring role of governmental ownership over management activities based on agency theory; the high level of scrutiny by different parties (e.g. owner representative, governmental associations, and other

governmental bodies) of firms with high governmental ownership; the increased number of people and institutions that may have a legitimate interest in the performance and earnings achieved by these firms (Capalbo *et al.,* 2018); and the managers' appointment system which depends on political connections and not on financial results (Cheng *et al.,* 2015).

Few studies have explored the relationship between governmental ownership and earnings management. Chen *et al.* (2008), Ben Naser *et al.* (2015) and Guo and Ma (2015) report that this relationship is positive. Whereas, Ding *et al.* (2007), Wang and Yung (2011), Capalbo *et al.* (2014) and Cheng *et al.* (2015) provide empirical evidence that there is a negative association between governmental ownership and earnings management. However, Liu and Lu's (2007) findings show that this relationship is insignificant. Consequently, this study's sixth hypothesis is as follows:

H6: There is a significant relationship between governmental ownership and classification shifting for the Egyptian listed firms,

4. Research Design and Data

4.1 Measuring the Classification Shifting of Expenses and Revenues

In investigating whether or not managers of Egyptian firms misclassify *COGS* as *SG&A* expenses and *OI* as total revenues in order to inflate gross profit, this study follows Noh *et al.'s* (2017) and Poonawala and Nagar's (2019) lead in testing the association

between *UGP* and both *USGA* and *OI*. A positive significant relationship between *UGP* and *USGA* represents an indicator for shifting of *COGS* to *SG&A* expenses, whereas a negative significant relationship between *UGP* and *OI* confirms the shifting of *OI* to total revenues. Many steps are employed to measure the shifting of expenses and revenues. The first step begins with the measurement of *UGP* which is the difference between reported gross profit (disclosed in the income statements) and the expected gross profit estimated from the following gross profit expectation model:

$$GP_{i,t}/TA_{i,t-1} = \beta_0 + \beta_1 (1/ TA_{i,t-1}) + \beta_2 (GP_{i,t-1}/TA_{i,t-1}) + \beta_3 (TACC_{i,t-1}/ TA_{i,t-1}) + \beta_4 (TACC_{i,t}/TA_{i,t-1}) + \beta_5 (Sales_{i,t}/TA_{i,t-1}) + \beta_6 (CH\_Sales_{i,t}/TA_{i,t-1}) + \beta_7 (NEG\_CH\_Sales_{i,t}/TA_{i,t-1}) + \varepsilon_{i,t} \qquad \textbf{(1)}$$

Where:

GP is the total gross profit reported in income statements. $GP_{i,t-1}$ is the lagged gross profit which is included in the model in order to control for the persistence of gross profit and is consistent with the approach applied by McVay (2006). $TACC_{i,t-1}$ is the lagged accruals (calculated as Net income before extraordinary items – cash flow from operation). Lagged accrual is included in the model in order to control the information content of the last accrual period related to future performance (i.e., gross profit). $TACC_{i,t}$ is contemporaneous accrual which is associated with the firm's economic performance (DeAngelo *et al.,* 1994). $Sales_{i,t}$ is the total amount of contemporaneous sales

which is included in the model in order to control for their impact on COGS and GP. $CH\_Sales_{i,t}$ is the percentage change in sales (sales growth) calculated as $((Sales_{i,t} - Sales_{i,t-1}) / Sales_{i,t-1})$ and any additional sales after the firm recovers their fixed costs that may be reflected in the bottom line after variable costs are deducted. Therefore, sales growth correlates positively with earnings growth. Since Anderson *et al.'s,* (2003) findings show that a rise in activity leads to greater costs and that a reduction in activity leads to lower costs, by including ($NEG\_CH\_Sales_{i,t}$), this study allows the slope to differ between the increases and reductions in sales. Ezat's (2014) and Ibrahim and Ezat's (2017) findings provide evidence of the stickiness behavior of *COGS* in the Egyptian environment. All the variables are scaled by lagged total assets ($TA_{i,t-1}$). Consistent with Fan and Liu (2007) Malikov *et al.* (2018) and Poonawala and Nagar, 2019). this study uses the latter as a deflator. In order to obtain the residuals from model 1, which are termed as *UGP*, model 1 estimates for each firm after controlling for industry type and the years (Ittonen *et al.,* 2013).

   The second step is to model the *SG&A* expenses as operating expenses in order to measure *USGA* which is the difference between the reported *SG&A* expenses (disclosed in the income statements) and the expected SG&A estimated from model 2. Accordingly, consistent with Fan and Liu (2007), Model 2 presents the expectation model of SG&A expenses as follows:

$SG\&A_{i,t}/TA_{i,t-1} = \gamma_0 + \gamma_1 (1/ TA_{i,t-1}) + \gamma_2 (SG\&A_{i,t-1}/TA_{i,t-1}) + \gamma_3 (TACC_{i,t-1}/ TA_{i,t-1}) + \gamma_4 (TACC_{i,t}/TA_{i,t-1}) + \gamma_5 (RET_{i,t}/ TA_{i,t-1}) + \gamma_6 (RET_{i,t-1}/ TA_{i,t-1}) + \gamma_7 (Sales_{i,t}/TA_{i,t-1}) + \gamma_8 (CH\_Sales_{i,t}/TA_{i,t-1}) + \gamma_9 (NEG\_CH\_Sales_{i,t}/TA_{i,t-1}) + \mu_{i,t}$ **(2)**

Where**:**

$SG\&A_{i,t}$ is the reported SG&A expenses disclosed in the income statements. $SG\&A_{i,t-1}$, which denotes lagged SG&A, is included in the model in order to control SG&A seasonality. Similar to model (1), contemporaneous accrual ($TACC_{i,t}$) , Lagged accrual ($TACC_{i,t-1}$), contemporaneous stock returns ($RET_{i,t}$) , and lagged stock returns ($RET_{i,t-1}$) are included to control for performance. All the other proxies (1/ $TA_{i,t-1}$ $Sales_{i,t}$) , ($CH\_Sales_{i,t}$), ($NEG\_CH\_Sales_{i,t}$) are included in the model which is similar to the *SG&A* model used by Fan and Liu (2007) and Gunny, (2010). All the variables are scaled by lagged total assets ($TA_{i,t-1}$)

Similar to model 1, model 2 estimates for each firm after controlling for industry type and years in order to obtain the residuals which are referred to as the *USGA*.

4.2 Regression Models

In order to test both hypotheses 1 and 2, this study regresses - in the third step- *UGP* on *USGA* and *OI* after controlling for industry type, years and some firm characteristics that have an impact on earnings management. Following (Barua *et al.,* 2010; Haw *et al.,* 2011; Zalata and Roberts, 2016; Zalata and Roberts,

2017; Li and Guo, 2018; Poonawala and Nagar, 2019), this study uses five control variables: namely. firm size (*Size*); Leverage (*Lev*); Returns On Assets (*ROA*); Cash Flow from Operating (*CFO*); and firm growth (*MBV*) to control for classification shifting. Model 3 presents the latter variables as follows:

$$UGP_{i,t} = \alpha_0 + \alpha_1\ USGA_{i,t} + \alpha_2\ OI_{i,t} + \alpha_3\ Size_{i,t} + \alpha_4\ Lev_{i,t} \qquad + \alpha_5\ ROA_{i,t} + \alpha_6\ CFO_{i,t} + \alpha_7\ MBV_{i,t} + e_{i,t} \qquad \textbf{(3)}$$

     Where:

UGP denotes unexpected gross profit; *USGA* denotes unexpected *SG&A* expenses; *OI* denotes other operating income disclosed in the income statement; *Size* denotes firm size measured by the nature log of total assets; *Lev* denotes leverage measured by total liabilities scaled by total assets; *ROA* denotes return on assets calculated as net income deflated by total assets; *CFO* denotes cash flows from operations; and *MBV* denotes market to book value measured by market capitalization to book value of equity. If the Egyptian firms' managers shift *COGS* to *SG&A* expenses, then α_1 should be positive and significant. While, if they shift other operating income to total revenues, α_2 should be negative and significant.

In order to test hypotheses 2 to 5, consistent with previous studies, this study includes the interaction of both *USG&A* expenses and *OI* with ownership structure proxies (Mcvay, 2006; Zalata and Roberts, 2016; Fan and Liu, 2017; Noh *et al.,* 2017; Poonawala and Nagar, 2019). Model (4) is run to test the

expected impact of ownership structure variables on classification shifting after controlling for industry type, years and some firm characteristics. Model 4 is presented as follows:

$$UGP_{i,t} = \lambda_0 + \lambda_1 \, USGA_{i,t} + \lambda_2 \, OI_{i,t} + \lambda_3 \, ConsOwn_{i,t} + \lambda_4 \, CEOOwn_{i,t} + \lambda_5 \, InsOwn_{i,t} + \lambda_6 \, GovOwn_{i,t} + \lambda_7 \, USGA_{i,t} \times ConsOwn_{i,t} + \lambda_8 \, USGA_{i,t} \times CEOOwn_{i,t} + \lambda_9 \, USGA_{i,t} \times InsOwn_{i,t} + \lambda_{10} \, USGA_{i,t} \times GovOwn_{i,t} + \lambda_{11} \, OI_{i,t} \times ConsOwn_{i,t} + \lambda_{12} \, OI_{i,t} \times CEOOwn_{i,t} + \lambda_{13} \, OI_{i,t} \times InsOwn_{i,t} + \lambda_{14} \, OI_{i,t} \times GovOwn_{i,t} + \lambda_{15} \, Size_{i,t} + \lambda_{16} \, Lev_{i,t} + \lambda_{17} \, ROA_{i,t} + \lambda_{18} \, CFO_{i,t} + \lambda_{19} \, MBV_{i,t} + \theta_{i,t} \qquad \textbf{(4)}$$

Where:

ConsOwn denotes ownership concentration measured by the proportion of stock owned by shareholders who own at least 5% of the common stock of the company (Davidson *et al.,* 2005; Liu and Lu, 2007; Al-Fayoumi *et al.,* 2010). This is because the Egyptian stock exchange's regulations require the listed companies to disclose the ownership levels of shareholders in excess of 5%. *CEOOwn* denotes the insider ownership measured by the percentage of shares owned by the firm's CEO (Rajgopal *et al.,* 2002; Cornett *et al.,* 2006; Liu and Lu, 2007; Joo and Chamberlain, 2017). *InsOwn* denotes the institutional ownership measured by the percentage of shares held by institutions (e.g., investment companies, private banks, financial and private insurance companies) (Al-Fayoumi *et al.,* 2010; Alexander, 2019). *GovOwn* denotes governmental ownership measured by the percentage of shares

held by governmental bodies (local agencies, public banks and insurance companies, holding companies) (Ben-Naser *et al.,* 2015; Guo and Ma, 2015; Poli, 2015).

4.3 Sample and Data

The initial sample includes all the Egyptian listed firms on the EGX from 2016 to 2018. We obtained the data, related to these firms, from their financial and board of director reports which collected from the Egypt for Information Dissemination (EGID) database and the firms' websites. The EGX classifies listed firms into nine sectors that included in this study to explore whether or not Egyptian listed firms engaged in classification shifting. However, due to their unique characteristics and different financial reporting, this study is similar to previous studies (McVay, 2006; Athanasakou *et al.,* 2009; Barua *et al.,*2010; Fan *et al.,* 2010; Zalata and Robert, 2017; Malikov *et al.,* 2018; Poonawala and Nagar, 2019) in excluding banks, financial institutions and utilities industries observations from the sample. In addition, consistent with Fan and Liu (2017), this study uses total assets as the deflator for most variables and, in order to avoid potential outliers, excludes observations of less than one million Egyptian Pounds. Having eliminated observations that were missing data required to calculate some variables, the final sample consists of 494 firm-year observations.

5. Empirical Results and Discussion
5.1 Descriptive and Univariant Analyses
Table 1 exhibits the descriptive findings for all the variables included in the analysis.

Table 1: Descriptive analysis for the full sample

Variables	Mean	Median	Std. Dev	25%	75%
UGP	0.000	-0.029	0.975	-0.375	0.383
USGA	0.000	-0.037	0.973	-0.316	0.361
OI	0.013	0.005	0.034	0.001	0.012
ConsOwn	0.452	0.401	0.600	0.229	0.596
CEOOwn	0.067	.000	0.164	0.000	0.029
InsOwn	0.327	0.237	0.328	0.000	0.601
GovOwn	0.250	0.000	0.491	0.000	0.437
Size	8.995	8.939	0.771	8.461	9.460
Lev	-0.909	0.491	0.0573	0.301	0.688
ROA	0.014	0.010	0.030	0.001	0.026
CFO	0.061	0.038	0.244	0.012	0.114
MBV	6.455	1.149	0.509	0.655	0.2.494
Obesrvation	494				

Variable definitions: *UGP* is the unexpected gross profit measured as the differences between reported and expected gross profit; *USG&A* is the unexpected selling, general and administrative expenses measured as the differences between reported and expected SG&A ; *OI* is the reported other operating income; *ConsOwn* is the concentration ownership measured as the proportion of stock owned by shareholders who own at least 5% of the common stock of the company; *CEOOwn* is the

insider ownership measured as the percentage of shares owned by CEO, *InsOwn* is the institutional ownership measured as the percentage of shares hold by institutions; *GovOwn* is the governmental ownership measured as the percentage of shares hold by governmental bodies; *Size* is the firm size measured as the natural log of total assets; *Lev* is leverage measured as total liabilities scaled by total assets; *ROA* is return on assets measured as net income deflated by total assets; *CFO* is cash flows from operations; *MBV* is market to book value measured as market capitalization to book value of equity. Variables are winsorized at 1% and 99%.

The mean (median) of *UGP* is 0.000% (-0.029) because these figures are the residuals from the expectation model (1). Similarly, the mean (median) of *USGA* is 0.000% (-0.037). The mean (median) of *OI* is 1.32% (0.5%); this suggests that Egyptian listed companies report small amounts of *OI*. For ownership structure variables, Table 1 reports the mean (median) of *ConsOwn* to be 45.22% (40.08%); this demonstrates that the Egyptian listed firms have a relatively high level of ownership concentration and this result is comparable to that of Alexander, (2019). On the other hand, the CEOs hold, on average, 6.68% of the sampled firms' total shares. This suggests that, in the Egyptian environment, the insiders hold a low stake with a median of 0%. This finding is very similar to the Portuguese environment (6%) as reported by Alves, (2012) and to the

Indonesian environment (4%) as presented by Alexander, (2019). On the other hand, in the Jordanian environment, Al-Fayoumi *et al.* (2010) illustrate that this percentage is 38%. In addition, Table 1 shows that about 32.67% of the sampled firms have *InsOwn* ranging from 0.00% to 60.09%. This suggests the existence of institutions owning large stake in some companies. This finding is higher than Al-Fayoumi *et al.'s* (2010) finding which shows that institutions hold about 23% of the ownership of Jordanian listed companies. As regards *GovOwn*, Table 1 indicates the mean (median) is 25.03% (0%). This is comparable to the finding of Guo and Ma, (2015) who report that governmental ownership accounted for 22.73% of Chinese firms.

Table 2 presents the correlation matrix. Although *UGP* is not correlated with *USGA*, it is correlated negatively with *OI*. This result may support the willingness of Egyptian firms to engage in shifting other income to total revenues but not shifting COGS to SG&A expenses. No multicollinearity problem is detected as none of the correlation coefficients among the independent variables exceeds 0.80 (Gujarati, 2003, p.359).

Table 2: Spearman correlation matrix

	UGP	UGSA	OI	Cons Own	CEO Own	Inst Own	Gov Own	Size	Lev	CFO	ROA
UGSA	0.113										
OI	-0.132***	-0.179***									
ConsOwn	-0.027	-0.188***	0.094**								
CEOOwn	0.044	0.184***	-0.01	-0.343***							
InstOwn	0.137***	-0.062	-0.01	0.240***	-0.291***						
GovOwn	-0.163***	-0.161***	0.01	0.134***	-0.354***	-0.418***					
Size	0.023	-0.135***	-0.05	0.135***	-0.197***	0.182***	0.132***				
Lev	-0.067	-0.219***	0.17*	0.229***	-0.143***	0.131***	0.047	0.363***			
CFO	0.194***	-0.311***		0.098**	-0.082	-0.031	0.129***	0.158***	-0.125***		
ROA	0.427***	0.021		0.016	-0.009	-0.010	0.089**	0.073	-0.165***	0.390***	
MBV	0.144***	-0.110**		0.093**	-0.151***	0.068	0.084	0.070	0.224***	0.156***	0.235***

No serious multicollinearity among the independent variables,

Number of observation 494

Variables as defined in Table 2.

* Indicate significance at 10% level in a two-tailed test.

** Indicate significance at 5% level in a two-tailed test.

*** Indicate significance at 1% level in a two-tailed test.

5.2 Multivariate Analysis

In order to test hypothesis 1 and 2, Table 3 shows model 3 (i.e., the basic regression model) which examines if Egyptian firms engaged in shifting of expenses and revenues items. The model is significant with the F Ratio (3.683) and the adjusted R^2 (11.1%). This is higher than the findings of Zalata and Roberts (2017). Malikov *et al.,* (2018) and Poonawala and Nagar, (2019).

Table 3: Regression results

Dependent Variable = UGP		
	Model 3	**Model 4**
Constant	0.101	0.283
	(0.182)	(0.483)
USGA	0.014	**0.286*****
	(0.317)	**(2.652)**
OI	**-0.085****	**-0.194****
	(-2.787)	**(-1.938)**
Size	-0.025	0.005
	(-0.518)	(0.106)
Lev	-0.002	-.004
	(-0.043)	(-0.079)
CFO	**0.123****	**0.121****
	(2.404)	**(1.949)**
ROA	**0.335*****	**0.360*****
	(7.084)	**(7.429)**
MBV	-0.084	**-0.079***
	(-0.528)	**(-1.657)**
ConsOwn×USGA		-0.136
		(-1.103)
CEOOwn×USGA		0.008
		(0.171)
InstOwnU×SGA		**-0.183****
		(-2.295)
GovOwn×USGA		-0.104
		(-1.643)
ConsOwn×OI		-0.174
		(-1.546)
CEOOwn×OI		0.010
		(0.183)
InstOwn×OI		0.089
		(1.182)
GovOwn×OI		**0.151***
		(1.849)
Other statistics		
Industry Fixed effect	**Yes**	**Yes**
Year Fixed effect	**Yes**	**Yes**

F-Ratio (sig.)	3.683***	3.163***
Adj. R^2	.111	.133
Max. VIF	1.709	4.532
Min. Tolerance	0.585	0.221
Number of observations	494	494

Note: The parameters in model (3) are estimated based on the following model:

UGPi,t = α 0 + α1 USGAi,t + α2 OIi,t + α3 Sizei,t + α4 Levi,t + α5 ROAi,t + α6CFOi,t + α7 MBVi,t + ei,t

The parameters in model (4) are estimated based on the following model:

UGPi,t = λ0 + λ1 USGAi,t + λ2 OIi,t + λ3 ConsOwni,t + λ4 CEOOwni,t + λ5 InsOwni,t + λ6 GovOwni,t + λ7 USGAi,t × ConsOwni,t + λ8 USGAi,t × CEOOwni,t + λ9 USGAi,t × InsOwni,t + λ10 USGAi,t × GovOwni,t + λ11 OIi,t × ConsOwni,t + λ12 OIi,t × CEOOwni,t + λ13 OIi,t × InsOwni,t + λ14 OIi,t × GovOwni,t + λ 15 Sizei,t + λ16 Levi,t + λ17 ROAi,t + λ18 CFOi,t + λ19 MBVi,t + θ i,t

Variables as defined in Table 1.

* Indicate significance at 10% level in a two-tailed test.

** Indicate significance at 5% level in a two-tailed test.

*** Indicate significance at 1% level in a two-tailed test.

t-statistics are shown in parentheses.

With regard to hypothesis 1, model 3 demonstrates that, whilst the coefficient of *USGA* is positive, it is insignificant. This suggests that Egyptian firms do not consider the shifting of *COGS* to SGA

expenses to be a viable method to manipulate gross profit[1.] This finding is inconsistent with most previous studies which support the shifting of recurring expenses to non-recurring expenses in order to inflate core earnings (e.g., McVay, 2016; Zalata and Roberts, 2016; Fan and Liu, 2017; Poonawala and Nagar, 2019). However, it is consistent with the finding of Athanasakou *et al.,* (2009) who reports that the variation of unexpected core earnings is not associated with income –increasing total non-recurring items and, hence, unlike in American firms, classification shifting is not common practice among UK firms.

In testing hypothesis 2, model 3 illustrates that the coefficient on *OI* (Coeff:-0.085, t-stat: -2.787) is negative and is significant at the 5% level. This suggests that the variation in *UGP* relates systematically to OI[2]. This suggests that, when valuing their performance, Egyptian firms' managers consider the importance of operating revenues and gross profit given by investors. Therefore, managers prefer to misclassify *OI* as total operating revenues to inflate gross profit.

Overall, the findings are consistent with the assumption that revenues shifting enable firms to meet sales revenues and earnings

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[1] When running a regression model for testing classification shifting for expenses only, un-tabulated results indicate that there is, also, an insignificant association between UGP and USGA expenses.

[2] When running a regression model for testing classification shifting for revenues only, un-tabulated results indicate that there is, also, a significant association between UGP and OI.

forecasts whilst expenses shifting may not help them to achieve this goal. This explains why some financial statements' users value income statements line items differently and pay more attention to operating revenues and gross profit (Bradshaw and Sloan, 2002; Davis, 2002). Consequently, the results provide evidence in line with hypothesis 2 but not in line with hypothesis 1. This demonstrates that Egyptian firms engage in classification shifting of revenue items rather than expenses items. This result is consistent with Noh *et al's.* (2017) and Malikov *et al.* (2018) findings.

According to the control variables, the regression results indicate similar associations to those reported by Barua *et al.* (2010), Zalata and Robert, (2016) and Zalata and Robert (2017). Table 3 presents a positive association between *UGP* and both *CFO* and *ROA*. This suggests that firms with strong performance and high cash flow operating activities are more likely to manipulate gross profit.

In order to explore the impact of ownership structure on classification shifting, this study focuses on the interaction between ownership structure variables and both *SG&A* and *OI*. For ownership concentration, Table 3 illustrates that the coefficient of both *ConsOwn×SG&A* and *ConsOwn×OI* is negative but insignificant. This suggests that the *ConsOwn* has no impact on the classification shifting of either expenses or revenues items. This finding concludes that the ownership concentration in Egyptian firms plays a myopic role. Top

shareholders may not conduct their monitoring role effectively due to either lack of experience or suffering from adverse selection problem (Admati *et al.,* 1994). Al-Fayoumi *et al.* (2010) report the same result in the Jordanian environment.

Similarly, this study fails to provide evidence of *CEOOwn*'s impact on classification shifting. Table 3 shows that the coefficient of *CEOOwn×SGA* and *CEOOwn×OI* is insignificant for the two methods of classification shifting. When measuring insider ownership by the percentage of shares owned by CEO, CEO ownership has no impact on the manipulation of gross profit due to the CEOs' low dominance in the Egyptian firms' ownership structure. Gabrielsen *et al.* (2002), Rajgopal *et al.* (2002) and Koh's (2003) findings support this result.

In order to test if *InstOwn* affects the level of classification shifting, both *InstOwn×SGA* and *InstOwn×OI* are considered. Table 3 indicates that the coefficient of *InstOwn×SGA* is negative and is significant at 5 % level but insignificant for *InstOwn×OI*. This provides support to the impact of *InstOwn* on misclassifying *COGS* as *SG&A* expenses but not on misclassifying *OI* to total operating revenues. The result supports the efficient monitoring hypothesis, deduced from agency theory, that institutional investors can provide an active monitoring role on the management's activities in order to restrict their abilities to opportunistically manipulate gross profit through misclassification of expenses. Table 3 shows that, in model 4, the

coefficient of *USGA* is 0.286 for firms with no institutional ownership whereas it is 0.103 (0.286-0.183) in firms with total institutional ownership. This indicates that Egyptian firms with high institutional ownership are less likely to engage in classification shifting. Many previous studies provide evidence of the negative association between institutional ownership and earnings management (e.g., Chung *et al.,* 2002; Hsu and Koh, 2005; Cornett *et al.,* 2006; Koh, 2007; Sirat 2012).

Finally, for *GovOwn*, Table 3 illustrates that the coefficient of *GovOwn×OI* is significantly positive at the 10% level while the coefficient of *GovOwn×SGA* is not statistically significant. This provides evidence of *GovOwn*'s impact on classification shifting on the revenue side instead of on the expenses side. This finding supports the view, deduced from agency theory, that government bodies holding shares in firms increases the efficiency of the monitoring function on the managers' activities and that this leads to an improvement in the firm's performance and reduces the incentives to manipulate gross profit through classification shifting. Consistent with this result, Table 3 shows that, in model 4, the coefficient of *OI* is -0.194 for firms with no governmental ownership while, when *GovOwn* interacts with *OI*, the coefficient is -0.043 (-0.194+0.151). This suggests that Egyptian firms, which have a high level of governmental ownership, are less motivated to misclassify *OI* as total revenues. The former

result is consistent with the findings of Wang and Yung (2011) Ding *et al.* (2007) Capalbo *et al.* (2014) and Cheng *et al.* (2015).

Overall, the findings indicate that, when ownership structure variables are added to the main model in order to test their impact on classification shifting, the Egyptian listed firms' managers are less likely to misclassify both COGS and OI to SG&A expenses and total operating revenues respectively. This supports the finding that the ownership structure of the Egyptian listed firms impacts on the classification shifting of both expenses and revenues items.

5.3 Robustness Analysis

In this section, this study presents four addition sensitivity tests in order to examine the robustness of the results. Table 4 summarizes the main findings of the robustness analysis.

Table 4: Robustness analysis results

	Panel A	Panel B	Panel C	Panel D	Panel E	Panel F	Panel G
				Dependent Variable = UGP			
Constant	0.142 (0.258)	0.173 (0.309)	0.204 (0.327)	0.607 (0.936)	0.114 (0.187)	-0.647 (-0.980)	-0.431 (-0.681)
USGA	0.068 (1.490)	**0.210*** **(1.652)**	**1.422*** **(2.753)**	**1.555*** **(3.006)**	0.012 (0.268)	**0.288*** **(2.656)**	**0.274** **(2.493)**
OI	**-0.090*** **(-1.900)**	**-0.181*** **(-1.819)**	**-0.239** **(-2.226)**	**-0.290*** **(-2.586)**	**-0.082*** **(-1.713)**	**-0.710** **(-2.193)**	**0.484*** **(4.086)**
Size	-0.029 (-0.606)	0.036 (0.719)	-0.027 (-0.538)	-0.003 (-0.055)	0.008 (0.147)	0.048 (0.843)	0.006 (0108)
Lev	-0.001 (-0.024)	.007 (0.173)	-0.002 (0.050)	0.004 (0.084)	-0.012 (-0.262)	-0.012 (-0.258)	-0.019 (-0.403)
CFO	**0.105** **(1.980)**	**0.107*** **(1.680)**	0.088 (1.483)	0.081 (1.308)	**0.126** **(2.452)**	0.064 (0.963)	**0.206*** **(3.427)**

ROA	**0.358*** (7.232)**	**0.391*** (7.580)**	**0.367*** (7.632)**	**0.401*** (8.156)**	**0.344*** (7.266)**	**0.383*** (7.752)**	**0.276*** (5.167)**
MBV	**-0.097** (-2.064)**	**-0.080* (-1.659)**	**-0.091* (-1.913)**	**-.092* (-1.944)**	**-0.082* (-1.725)**	**-0.092* (-1.910)**	**-.070 (-1.420)**
HCOGS × USGA			**1.432*** (2.771)**	**1.410*** (2.730)**			
HOI × OI			**-0.177* (-1.732)**	**-0.093* (-1.863)**			
HCOGS × ConcOwn×USGA				**-0.216** (-1.975)**			
HCOGS × CEOOwn×USGA				0.027 (0.568)			
HCOGS × InstOwnU×SGA				0.053 (1.016)			
HCOGS × GovOwn×USGA				-0.032 (-0.591)			
HOI × ConsOwn×OI				-0.127 (-1.021)			
HOI × CEOOwn×OI				-0.060 (-1.154)			
HOI × InstOwn×OI				-0.024 (-0.457)			
HOI × GovOwn×OI				**0.037* (1.735)**			
Bzise					-0.047 (-0.881)	-0.076 (-1.190)	
NonExc					0.033 (0.720)	0.085 (1.577)	
RoleD					-.064 (-1.388)	-0.020 (-0420)	
ACSize					**-0.105** (-2.071)**	**-0.124** (-2.431)**	
ACMeet					-0.010 (-0189)	0.033 (0.623)	
ConsOwn×USGA		-0.200 (-1.488)				-0.108 (-0.871)	-0.167 (-1.316)
CEOOwn×USGA		-0.055 (-0.934)				0.009 (0.186)	

InstOwn×USGA		-0.003* (-1.629)					-0.235** (-2.887)	-0.128** (-2.467)
GovOwn×USGA		0.097 (0.943)					-0.088 (-1.397)	-0.062 (-0959)
ConsOwn×OI		-0.158 (-1.397)					-0.160 (-1.492)	-0.452*** (-3.439)
CEOOwn×OI		-0.003 (-0.051)					-0.006 (-0.119)	
InstOwn×OI		0.091 (1.163)					-0.132 (-0537)	0.034 (0.433)
GovOwn×OI		0.194* (1.782)					0.578** (2.073)	0.154* (1.903)
BoardOwn×USGA								-2.164 (-0.732)
BoardOwn×OI								2.141 (0.724)
Other statistics								
Industry Fixed effect	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Year Fixed effect	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
F-Ratio (sig.)	**3.792*****	2.975***	3.582***	3.030***	3.364***	2.946***	2.305***
Adj R^2	**0.115**	0.123	.124	.135	.118	.136	0.083
Number of observations	**494**	494	494	494	494	494	494

5.3.1 Alternative model to expect SG&A expenses

In model 2, this study follows Fan and Liu's (2007) model to expect *SG&A* expenses. In this section, following Poonawala and Nagar's (2019), the study employs an alternative model to expect *SG&A* expenses. The model is presented as follows:

$SG\&A_{i,t}/TA_{i,t-1} = \gamma_0 + \gamma_1 (1/ TA_{i,t-1}) + \gamma_2 (MV_{i,t}) + \gamma_3 (Q_{i,t}) + \gamma_4 (INT_{i,t}/TA_{i,t-1}) + \gamma_5 (CH\_Sales_{i,t}/TA_{i,t-1}) + \gamma_6 (NEG\_CH\_Sales_{i,t}/TA_{i,t-1}) + \mu_{i,t}$

Where: MVi,t is the log of market capitalisation value measured by multiplying total outstanding shares times closing price of shares; Qi,t is Tobin's Q measured by {(MV+ total liabilities) / Total assets}; and $INTi,t$ is internal funds measured by (Net income + Depreciation + R&D expenses). Table 4 panels (A) and (B) present the results obtained from the regression of *UGP* on *USGA* as calculated by using the above model. The finding indicates in panel (A) significant negative coefficients on the *OI* variable but not on the *USGA* variable. This suggests that the variation in *UGP* relates systematically to *OI* rather than to *USGA* as obtained previously from the main model (3). Further, when including the ownership structure variables, the results show again consistency with the results obtained from model 4. Panel (B) demonstrates that *InstOwn* has a significant impact on classification shifting of expenses rather than on classification shifting of revenues. In addition, panel (B) demonstrates a significant association between *GovOwn* and classification shifting of revenues but not with classification shifting of expenses. The results, obtained from panels (A) and (B), support the main results obtained from the study's main models as presented in Table 4.

5.3.2 Firms with high COGS and OI

Firms with high *COGS* and *OI* are more likely to engage in

classification shifting in order to boost their gross profit (Noh *et al.,* 2017). Following McVay's (2006) and Noh *et al.*'s (2017), this study defines indicator variables, *HCOGS* and *HOI* for both *COGS* and *OI* as being respectively greater than 5% of sales. Panel (C) indicates that Egyptian firms with high *COGS* and high *OI* engage in misclassifying their operating expenses and revenues items. Moreover, panel (D) shows that, to some extent, the same results are obtained from the main model (4). The robustness analysis demonstrates only one difference with the main model. This is embedded in *ConsOwn* which has a significant impact on misclassifying *COSG* as *SG&A* expenses rather than *InstOwn*. On the other hand, the other findings are similar.

5.3.3 Controlling for Board of Directors' Variables

The firm's Board of Directors plays a crucial role in monitoring and controlling the managers' actions and activities and it is expected to influence the managers' behaviors. Accordingly, previous classification shifting studies have tested the impact of the Board of Directors' variables (e.g Zalata and Roberts, 2016; Joo and Chamberlain, 2017; Orjinta *et al.,* 2018). Therefore, this study includes some of these variables. These are: *Bsize* denotes board size measured by the number of directors on the board; *NonExc* denotes non-executive members measured by the proportion of non- executive members on the board to the total member of directors on the board;, *RoleD* denotes role duality measured by a dummy variable equal to 1 if the board chairman and CEO are the

same person and 0 otherwise; *ACsize* denotes the size of the audit committee measured by the total number of directors on the audit committee; and, finally, *ACMeet* denotes the audit committee meetings measured by the number of such meetings. Panels (E) and (F) illustrate that the findings are consistent with the original findings. These suggest that the main findings are not sensitive to the board of directors' variables being included in the main model.

5.3.4 Alternative Measurement of Insider Ownership

We conducted a further sensitivity analysis by using other measurements for the insider ownership structure. Some previous studies employed different measures (e.g. managerial ownership," and "board ownership") to test the impact of insider ownership on earnings management. Therefore, this study includes in the main model *BoardOwn* as a measure of insider ownership. The results, presented in panel (G), continue to provide support for the main hypotheses. The findings indicate that, *BoardOwn* has no impact on the classification shifting of both expenses and revenues sides. The results, obtained from panel (G), support the main results obtained from the study's main models as presented in Table 3.

6. Conclusion

Previous classification shifting studies have focused mainly on the managers' opportunistic bahaviors to misclassify recurring expenses as non-recurring in order to inflate core earnings. Taking into account, the Egyptian environment and the applied

Egyptian Accounting standards, this study shed light on the manipulation of gross profit rather than core earnings. This was due to its importance as a performance metric and it being closer to sales. Consequently, this made it more sustainable than core earnings. In addition, this study examined classification shifting of both expenses and revenue items in order to investigate if Egyptian firms engaged in this earnings management tool.

Using a sample of 494 Egyptian listed firm –year observations, this study's findings indicate that Egyptian firms are more likely to shift *OI* to total operating revenues in order to manipulate gross profit rather than shifting *COGS* to *SG&A* expenses. This suggests that Egyptian firms prefer to engage in classification shifting of revenues rather than classification shifting of expenses. In addition, Egyptian firm are characterized by mixed structures of ownership, Therefore, this increases the motivation to examine the influence of such structures on the possible shifting of income statements' items. The results report a significant negative association between *InstOwn×SGA* and *UGP*. This suggests that the more *InstOwn* in a firm, the less likely it is that the managers will engage in expenses shifting to inflate gross profit. Further, the results demonstrate that there is a significant positive association between *GovOwn×OI* and *UGP*. This suggests that increasing *GovOwn* restricts the Egyptian firm managers' opportunistic behaviors to engage in classification shifting of revenues. Moreover, the additional analysis demonstrates that the main study's results are not sensitive to any of the alternative

analyses that were done. From the variety of additional analyses, this suggests that this study's main results are more robust.

These findings provide important implications. For investors, the results show that they should pay greater attention to the revenues side of classification shifting and that they should increase their awareness of the revenue items disclosed in the income statements. Further, for those, who are responsible for setting accounting standards, this study's findings shed light on the manipulation of gross profit to which the investors pay great attention. Therefore, accounting standards' setters should pay more attention to its manipulation in the information disclosed in the firms' income statements. For academic researchers, this study's findings extend the previous findings and provide empirical evidence of the pervasiveness of classification shifting in Egypt which is one of the world's developing countries. Academic researchers need to conduct more studies to investigate other emerging countries' use of classification shifting. Moreover, the findings provide evidence of the importance of the ownership structure in the Egyptian environment and its impact on classification shifting. Consequently, these findings may provide a direction for new research to examine this topic in the context of the emerging countries.

Classification shifting is still a relatively new area of research which has raised debate among the many previous studies. Consequently, this study suffered from some limitations. First, the study focused on the non- financial Egyptian listed firms in the

period from 2016 to 2018. Future research can extend both the sample and time period. Second, the study did not examine the potential impact of adopting IFRS in Egypt. Some Egyptian firms are cross listed in other developed countries and this requires these firms to apply IFRS when preparing their financial statements. Future research can investigate the moderate role of IFRS on classification shifting in the Egyptian context. Third, the study's models exclude the potential impact of other earnings management tools such as real earnings management and accrual management. Future research can explore the influence of both tools on the manipulation of earnings. Fourth, the study concentrated mainly on the manipulation of gross profits. Future research can examine other earnings amounts such as operating profit. Fifth, the study investigated mainly the potential impact of ownership structure variables on classification shifting in the Egyptian environment. Future research can investigate the impact of audit related variables which may be expected to have potential influence on classification shifting in the Egyptian context. Finally, the study tested some of the determinants of classification shifting by Egyptian listed firms. Future research needs to examine the value relevance of applying classification shifting in developing countries.

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