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By

Dr. Dalia Ezzat Amin Mohamed

Lecturer in Accounting, School of Business Administration

Ahram Canadian University

Dalia.Mohamed@acu.edu.eg

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The Impact of Diversity Washing and The Percentage of Females in the Boardroom on The Income Shifting in Egypt: An Empirical Study

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Abstract:

Scholars and stakeholders have given gender diversity a lot of attention, and it is increasingly being recognized as a crucial component. This study aims to examine the impact of diversity washing and the portion of females in the boardroom on income shifting as a type of earning management. This study is an empirical study and will be applied to 100 Egyptian listed companies from 2014 to 2023. Egypt has a lot of potential for foreign investment because it is a developing nation. The findings reveal that there is a nonlinear relationship between gender diversity and income classification. Due to the unequal representation of women in the boardroom, it is typical for the Egyptian companies that were sampled to have an average of 9.7% women on the board. Women should be reached from 8.78% to 28.02% in the boardroom to influence in decreasing the revenues classification shifting, and should reach from 19.99% to 38% to decrease expenses classification shifting. Gender diversity washing shows a significant negative linear effect on revenue classification shifting.

Keywords: Diversity Washing, Diversity Boardroom, Earning management, Income Shifting, Revenue Income Shifting, Expenses Income Shifting.

1. Introduction

Enron Corporation was the first in a series of significant US corporate failures to file for bankruptcy. It was followed by WorldCom three months later. Women Sherron Watkins at Enron and Cynthia Cooper at WorldCom were the ones who informed important staff members about the fraudulent actions occurring in both cases. Gender diversity (GD) has garnered significant attention from scholars and stakeholders, and it is becoming more widely acknowledged as an important factor. Everywhere in the world, there seem to be attempts to increase the number of women in boardrooms and audit committees or to set quotas for them. After Norway, for example, implemented a 40% female quota by 2008, other European nations like Spain, Italy, and the Netherlands established

legislative quotas of 40%, 33.3%, and 30%, respectively. In developing nations like Egypt, significant progress has been made in empowering women by raising the proportion of women in boardrooms to 30% by 2030. For instance, decree No. (109), released by the Financial Regulatory Authority in 2021, pertaining to listing and delisting regulations for securities, stipulated that at least 25% of board directors must be female or that there must be a minimum of two women in the boardroom. (Srouf et al., 2023) (Hrazdil et al., 2022)

The emphasis of this study is the Egyptian context for several reasons. The first is that Egypt is a developing country with a lot of room for international investment. Egypt, because of its strategic location in North Africa, has a distinct cultural identity and wants to compete on a global scale. In Egyptian society, however, cultural ideas have a big impact on women's roles, influencing both social and economic facets. Insufficient representation in the House of Representatives continues because of discrimination, according to the Egyptian Centre for Women's Rights [The Egyptian Centre for Women's Rights, 2012, p. 5]. The 2014 Egyptian Constitution asserts in articles (11) and (180) that the state will guarantee women equal rights and set aside 25% of local council seats for women. Similarly, in December 2012, BOGD in Egypt was below 7%. According to surveys, less than one-fifth of entrepreneurs in South Korea, Egypt, and Palestine are women (Global Entrepreneurship Monitor, 2012:8). Furthermore, Egypt receives a score of 19, which is seen as somewhat low when compared to other emerging markets, on the Gender Global Entrepreneurship and Development (2014) index. The Egyptian Financial Supervisory Authority enacted gender quota legislation in 2019 to address this issue. It mandates that women be represented on company boards in two phases: at least one by 2019 and 25% by 2021. (Srouf et al., 2023) (Zalata et al., 2020)

In light of their favorable investment climate and potential for economic growth, emerging markets have emerged as a critical component of the global economy, which has led to large investments globally. The growing interest in GD could be due to the following factors. GD is now a corporate governance (CG) tool used to reduce executive opportunism, safeguard shareholder interests, and improve board monitoring efficacy. Manager-shareholder agency issues can be resolved with GD. Due to the physiological and ethical differences between men and women, several theories predict that women's participation will be

valuable. Personal attributes have a distinct impact on comprehension, abilities, and performance, according to social cognitive theory. According to this notion, earlier research indicates that women exhibit different abilities and traits than men. Women make better financial and social decisions, are more ethical and moral, and are risk-averse and conservative. (Saleh et al., 2023)

Earnings Management (EM) is a technique of information asymmetry between managers and shareholders and represents management behavior, which is the decision made by managers to modify financial data to achieve particular goals. Several strategies, including income smoothing, actual activities, and discretionary accruals, are available to managers for managing earnings. "A form of EM designed to remove peaks and valleys from a normal earnings series, including steps to reduce and store profits during good years for use during slower years" is how Mulford and Comiskey (2002, p. 3) described income smoothing (IS). IS primarily aims to demonstrate a company's low-risk status and reduced earnings volatility. There are two strands of debate regarding the consequences of IS. The informativeness perspective, which is connected to the first stream, suggests that managers can preserve a company's reputation by using IS techniques to keep earnings consistent from year to year. According to the second stream, which is linked to the opportunistic perspective, IS practices allow managers to utilize confidential data to further their agendas or avoid financial setbacks, which could have an impact on their jobs. (Srour et al., 2023)

In the past ten years, classification shifting (CS) —a type of EM—has drawn more attention from scholars and the academic community due to businesses' growing practice of revealing operational profit separately in their financial statements. Managers intentionally misclassify core expenses (cost of products sold and selling, general, and administrative expenses) as non-recurring items (special items) to inflate core earnings. This practice is known as classification shifting. Investors prefer to give recurring earnings more weight than non-recurring earnings. Therefore, companies are motivated to boost core earnings through categorization shifting without compromising bottom-line profitability. Anecdotal evidence indicates that businesses frequently label a significant portion of ongoing and operating costs as restructuring charges. CS differs from other forms of EM in several ways. Since it does not affect net income, it is less expensive than other methods of managing earnings and is, therefore, subject to less scrutiny from regulators and auditors. Furthermore, the

substantial distorting effects of EM linked to AEM or REM, such as accrual reversals or the loss of economic value, are not present in categorization shifting. (Hwang et al.,2022) (Bansal, 2024)

2. Literature Review and Hypotheses Development

The literature surrounding the impact of diversity in CG, particularly the representation of women on boards, has gained significant traction in recent years. This review will critically analyze the relevant literature, focusing on the interplay between board GD, diversity washing, and income shifting within the context of Egypt. Since the initial introduction of the term diversity washing by Baker et al. (2022), there has been a growing concern among experts and scholars regarding organizations making surface-level changes to their diversity policies without implementing substantial transformations. This has prompted numerous inquiries into the authenticity and effectiveness of diversity initiatives and their potential effects on various aspects of CG and financial practices.

A pioneering study conducted by Saleh et al. (2023) delved into the impact of gender quotas on board GD and EM in emerging markets. The study findings revealed that the implementation of gender quotas led to a significant increase in female representation on boards, which, in turn, resulted in a decrease in EM. These compelling findings suggest that genuine efforts to promote diversity can not only bring about a much-needed balance in gender representation but also lead to more ethical and transparent financial reporting practices within organizations. In the realm of CG and financial reporting, Elsayed et al. (2023) conducted a specific examination focusing on the link between financial statement comparability and income CS in the specific context of Egypt. Their groundbreaking study highlighted the pivotal role of financial statement comparability in mitigating income-shifting practices, which can be influenced by the prevailing governance structures within organizations. The ability to compare financial statements across companies, as exemplified in this study, emerges as a vital component in promoting fair financial reporting practices and minimizing unethical income manipulation. These findings further reinforce the notion that fostering diverse boards, as proven by Saleh et al. (2023) research on the ethical implications of gender-diverse boards, can potentially lead to reduced income-shifting practices and promote a more equitable financial landscape.

Srouf et al., (2023) investigate how IS affects stock liquidity. Additionally, it looks into the moderating effect of GD, which is reflected in this connection through the GD of the audit committee and the board. Using a quantitative research methodology, the study examines the moderating effects of GD in sixty-two Egyptian companies between 2018 and 2021. The findings indicate that IS has a major detrimental effect on stock liquidity. GD improves this relationship, as the negative effects of IS on stock liquidity are lessened by the gender variety of the board and audit committee. Additionally, the study shows that there are notable variations in IS between the sectors of the Egyptian Stock Exchange. Furthermore, the variations in stock liquidity are negligible.

Continuing along this line of inquiry, Ghio et al. (2024) provide additional insight into the need to develop a thorough grasp of how diversity affects financial reporting, business performance, and relationships with accounting stakeholders. Their in-depth investigation highlighted the complexity of diversity and its possible effects in organizational settings. Understanding how diversity and business performance are linked, the study showed how diverse boards can improve financial reporting procedures and build closer bonds with different stakeholders. Through the integration of many viewpoints and experiences, companies can fully use their staff and guarantee a more inclusive decision-making process, which eventually results in improved performance and long-term financial success.

According to Elshandidy, et al., (2024), assumed a certain linear relationship between board diversity and strategy employed by management to explain the relationship with social and environmental disclosures. Concerning recent transformations aimed at solving the CG issues in the UK, findings suggest that the attention directed exclusively towards the diversity of boards is misplaced, it is dominance and the configuration of the dominant attributes that matter. Muhammad, et al., (2024) seek to provide deeper insights in the accounting conservatism and board GD association due to the mediation role played by corporate social responsibility (CSR). While the authors were able to examine such influence, they limited their study to 10,252 observations of firm years of 932 firms listed in 15 European countries from 2010 to 2020. They find that accounting conservatism and BGD are positively and significantly related, but this relationship is strongly mediated by CSR.

Mehedi et al. (2024) evaluate the connection between corporate carbon performance (CCP) and board capital, structural, and demographic diversity. They examine how these linkages are mediated by corporate sustainable resource usage. They make use of the unbalanced panel data provided by Refinitiv Eikon for 9,960 companies that were listed worldwide between 2002 and 2022. According to the findings, the CCP is positively and significantly correlated with board demographic diversity, which includes tenure, gender, and cultural diversity; structural diversity, which includes board independence, size, CEO-chairman duality, board meetings, and board compensation; and capital diversity, which includes board member affiliation and specialized skills. Additionally, the results show that the relationship between board demographic diversity and CCP is fully mediated by corporate sustainable resource usage, while the relationship between board structural diversity, board capital diversity, and CCP is partially mediated. Practical implications The results will be able to address the worldwide concerns of firm-level climate change response and governance issues because they are based on a wide variety of global enterprises.

Ning et al., (2024) examine the effect of the diversity of directors' composition on the economic performance of Chinese listed companies. The two types of diversity that can be examined include relational and task diversity. A greater task-oriented diversity of the board is helpful to the firm's financial performance. In terms of the effects of board diversity on business risk, the results of the analysis indicate that risk-taking is lower in companies with higher levels of task-oriented board diversity which confirms the initial assumptions of the research. Furthermore, the relations support the claim that state ownership strengthens the positive effects of directors' task-oriented diversity on corporate financial performance and thus the relationship between the two types of diversity (task and relational) of the board and the financial performance of the corporation.

Budastra and Isnalita (2024) demonstrate experimentally the effect of gender composition of the board of directors on the earnings quality. Further, this research examines how institutional ownership may help lessen the negative influence of gender representation on the board of directors on the quality of the profit-producing activity. The sample for the study was 682 firm-year records of manufacturing companies listed on the IDX from 2015 to 2019. In this study, it

is argued that there exists no relationship between the composition in terms of heads of GD in corporate boards and the improvement of the quality of earnings reported. This report also asserts that by enhancing attention to the issue of GD the roles of institution ownership can enhance the quality of reported earnings. In this research, in developing countries

Vasilakis and Thornton (2024) provide empirical evidence that the variations in financial malfeasance among US banks can be partially explained by the interpersonal demographic variety of executive board members. It promotes the idea that a key element in explaining the efficacy of executive board oversight concerning a bank involved in financial misconduct is the diversity of board member characteristics and the composition of an interpersonal population, which dates back to the prehistoric period of the exodus of Homo sapiens from East Africa tens of thousands of years ago. The fundamental premise is that it is challenging to maintain collective integrity action in population-fragmented societies that are marked by corruption, preference variety, and mistrust. The primary regulatory agencies' enforcement and class action lawsuits against banks show a favorable correlation between financial wrongdoing and the addition of directors from nations with varying degrees of interpersonal population diversity. These findings hold up well when bank-specific variables, such as other board characteristics, are controlled for, as well as when instrumental variables are employed. Relevance to practice The results imply that lowering the interpersonal demographic diversity of bank executive boards is probably necessary to lower financial wrongdoing by banks. act of communal integrity.

Collectively, these studies underscore the critical importance of genuine diversity initiatives within organizations, both from an ethical and financial standpoint. By embracing diversity and ensuring its meaningful implementation across all levels of corporate governance and financial reporting, organizations can forge a path toward inclusivity, transparency, and long-term sustainability. The evidence presented by these studies serves as a clarion call for organizations to move beyond superficial diversity measures and truly harness the power of diversity to drive positive change in the corporate world.

3. Research Methodology and Data Analysis

The study objective is to investigate the relationship between GD and female percentage in the boardroom on income shifting. The research model comprises GD and the percentage of females in the boardroom as independent variables and Income shifting as the dependent variable. Moreover, firm size, leverage, operating cash flow ratio (OCF), market-to-book ratio (MTB), and return on assets (ROA) are control variables. The population is the Egyptian firms that are listed on The Egyptian Stock Exchange (EGX). The total number of listed companies in EGX is 240, according to the World Bank in 2020. The sample is collected from the financial statements of 100 Egyptian-listed firms as a secondary source of data. The firms included in the sample are collected from different industry sections. This study is an empirical study; it uses quantitative research methods to examine the association between the variables. The quantitative research design adopts a deductive approach. Because hypotheses are developed, then data are collected to test the hypotheses. To analyze the data, the researcher will use Stata statistical software for data science.

3.1 Measurements of the Main Research Variables

3.1.1 Diversity Washing and The Percentage of Females in the Boardroom

"Diversity washing (DW)" is the practice of businesses lying about their true diversity commitments. to determine whether businesses "walk the talk," as greater disparities between diversity discourse and practice are more likely to be a sign of DW. Therefore, DW is measured by a dummy variable, 1 for firms that make DW, and there is a difference between the actual number of females on the board and the disclosure of equality in the corporate governance report, 0 for non-DW firms. Moreover, the percentage of females in the boardroom is measured as a ratio between females over the total number of board members.

3.1.2 Income Classification Shifting

Over the past ten years, scholars and the academic community have paid increased attention to classification shifting, a kind of EM, due to the increasing trend of companies revealing operational profit separately in their financial statements. To portray the company's excellent operating performance, managers

intentionally misclassify income statement line items under classification shifting. (Bansal, 2024) CS is the practice of managers misclassifying core expenses as income-decreasing special items to improve core performance, according to Ha and Thomas (2020). To inflate core earnings, managers purposefully misclassify administrative, general, and cost of goods sold expenses as non-recurring (special) items. This is called "classification shifting." Recurring earnings are preferred by investors over non-recurring earnings in terms of weight. Businesses are therefore encouraged to use categorization shifting to increase core earnings without sacrificing profitability. (Hwang, et al., 2022)

The two-step method proposed by McVay (2006) is used to measure the degree of classification shifting. Initially, by generating an expected core earnings model, the core earnings of companies were broken down into their expected and unexpected components. The absolute value of income-decreasing special items is then regressed on unexpected core earnings. When managers move core expenses to special items, they increase core earnings, as indicated by a positive coefficient on income-decreasing special items. Unexpected core earnings (UE_OP) are measured as the difference between actual and expected operating profits, as in Equation 1

$$CE_{i,t} = \beta_0 + \beta_1 (1/AT_{i,t-1}) + \beta_2 CE_{i,t-1} + \beta_3 ACC_{i,t} + \beta_4 ACC_{i,t-1} + \beta_5 Sales_{i,t} + \beta_6 \Delta Sales_{i,t} + \beta_7 Neg_{\Delta Sales_{i,t}} + \epsilon_{i,t}$$

Where CE is core earnings measured as sales minus COGS and operating expenses. ACC is accruals measured as the difference between net income before extraordinary items and cash flows from operating activities. Sales are revenue from operations. $\Delta sales$ is a change in sales from period $t-1$ to t . $NEG_{\Delta Sales}$ is a dummy variable that takes a value equal to one if $\Delta Sales$ is negative and zero otherwise. The residual serves as the proxy for UE_OP.

Then, unexpected operating revenues (UE_OR) are measured as the difference between actual operating revenue and expected operating revenue:

$$OR_{i,t} / AT_{i,t-1} = \alpha_0 + \beta_1 1 / AT_{i,t-1} + \beta_2 OR_{i,t-1} / AT_{i,t-2} + \beta_3 MTB_{i,t-1} + \beta_4 AR_{i,t-1} / AT_{i,t-2} + \beta_5 AR_{i,t} / AT_{i,t-1} + \epsilon_{i,t}$$

Where OR is operating revenues measured as revenue from operations. All the variables are scaled by lagged total assets. The inverse of lagged total assets ($1/\text{Assets}$) is included as another control variable that provides additional control for heteroskedasticity. Residuals ε_{it} measures UE_OR.

3.3 The Research Hypotheses

H₀₁: There is no Relationship between Diversity Washing and Operating Revenue Shifting

H₀₂: The Percentage of Females in the Boardroom Does not Affect Operating Revenue Shifting

H₀₃: There is no Relationship between Diversity Washing and Operating Expenses Shifting

H₀₄: The Percentage of Females in the Boardroom Does not Affect Operating Expenses Shifting

4. Empirical Findings

The study's population comprises 100 firms listed on the Egyptian Stock Exchange during the period from 2014 to 2023. However, sectors that have less than ten firms have been excluded due to the requirement of the cross-sectional estimation for each sector year to measure the income shifting model, resulting in a final sample size of 70 firms listed on the Egyptian Stock Exchange. The following table (1) illustrates the number of firm-year observations in five different sectors during the study period according to the Global Industry Classification Standard.

Table (1): The Distribution of the Sample

GICS Sector Name	Firms	Frequency	Percentage
Consumer Discretionary	13	127	18.81
Consumer Staples	18	173	25.63
Industrials	13	130	19.26
Materials	13	125	18.52
Real Estate	13	120	17.78
Total	70	675	100.00

4.1 Descriptive Statistics

Table (2) presents the summary statistics for all variables included in the research models, over the period from 2014 to 2023.

Table (2): Descriptive Statistics

Panel A: Descriptive Statistics for Continuous Variables					
Variable	Obs	Mean	Std. Dev.	Min	Max
CS ES	675	.122	.163	0	.577
CS RS	675	.135	.121	0	.368
GDR	675	.097	.111	0	.38
Size	675	20.731	1.726	17.251	25.741
Lev	675	.507	.255	.005	1.129
OCF	672	.044	.128	-.298	.375
MTB	675	2.104	2.077	-1.457	6.848
ROA	675	.057	.106	-.156	.294

Panel B: Frequencies for Dummy Variable				
Variable	Modality	Frequency	Percentage	Cumulative
GDW	0	350	51.85	51.85
	1	325	48.15	100.00
Total		675	100.00	

This table reports all summary statistics based on the full sample of observations. Where, CS_ES is the operating expenses misclassification. CS_RS is the operating revenues misclassification. GDR is the gender diversity ratio. Size is the firm size. Lev is the firm's financial leverage. OCF is the net operating cash flows ratio. MTB is the market-to-book ratio. ROA is the return on assets. GDW is an indicator variable for gender-washing. Panel (A) reports descriptive statistics. Panel (B) reports frequencies.

Table (2) shows the summary statistics for all the study variables, presented under two panels; Panel (A) and Panel (B). Panel (A) includes the continuous variables and Panel (B) includes the frequencies regarding the dummy variable. The continuous variables used in this research have been winsorized at 3%, to treat the effect of outliers. In terms of manipulating earnings through a CS mechanism, misclassifying both operating expenses and operating revenues has wide ranges. The minimum values of misclassifying operating expenses and operating revenues are zeros, indicating that some sampled firms do not misclassify either operating expenses or operating revenues, or both. Conversely, the maximum values of misclassifying operating expenses and operating revenues are (.577) and (.368), respectively. This suggests that some firms' managers deliberately misclassify operating expenses and operating revenues in the Egyptian market. The large standard deviations of (.163) and (.121) support the wide variations among the sampled Egyptian firms regarding operating expense shifting and operating revenue shifting. However, the nonzero average values of (.122) and (.135) for misclassifying operating expenses and operating revenues, respectively, reveal that the sample is dominated by firms manipulating earnings via misclassifying operating expenses and operating revenues. Furthermore, the positive signs of the mean values indicate that the actual values of operating revenues and operating expenses exceed the expected values of operating revenues and operating expenses, respectively. Nonetheless, it is notable that the average operating revenue shifting (.135) is greater than the average operating expense shifting (.122), implying that the average sampled firms engage more in operating revenue shifting compared to operating expense shifting.

Regarding the gender diversity ratio (GDR), its average value over the sampled time horizon is (.097), which means that on average the Egyptian sampled firms have 9.7% women on the board, reflecting the inequality in gender representation in the boardroom. Furthermore, some firms in the Egyptian environment have a 100% male representation and a zero female representation within the boardroom as indicated by the minimum value. Even throughout the entire sampling period from 2014 to 2023, the maximum observed value stands at just 38%, which is less than half. Considering Egypt's longstanding customs and traditions that have empowered the role of males at the expense of females in all spheres of life, it is deemed reasonable to have an average value of 9.7% of female directors on corporate boards. The large standard deviation of (.111) indicates heterogeneity in terms of the female representation percentage among the sampled firms and over the sampled period.

Concerning the firm-specific characteristics, firm size shows a standard deviation of (1.726), which is very small relative to the mean (20.731) due to applying the natural logarithm on the book value of total assets, which caused smoothing in firm size among the sampled Egyptian firms. Accordingly, firm size shows a small range between its minimum value (17.251) and its maximum value (25.741). Regarding firm leverage (Lev), it has a mean value of (.507) which means that on average the Egyptian sampled firms depend on a leverage ratio of 50.7%. The minimum value (.005) is very close to zero, which indicates the minor dependence of some Egyptian firms on debts. While the maximum value (1.129) reflects that other firms depend heavily on debt in their capital structure. The moderately high standard deviation (.255) compared to the mean (.507) supports the reasonable heterogeneity among Egyptian firms in terms of their preference for debt over equity for financing assets and operations.

The OCF has a mean of (.044), indicating that, on average, Egyptian-listed firms achieve a positive cash flow from operations. However, its minimum value is negative (-.298), which reflects the failure of some sampled firms to generate sufficient positive cash flows from their core activities to cover the cash outflows associated with operating processes, resulting in a negative net cash flow from operations. On the other hand, the maximum value (.375) reveals the ability of other firms to generate a positive net cash flow from core operations. The large standard deviation (.128) aligns with the large range, both suggesting the large variations among the sampled firms over the period 2014-2023 in the OCF. Relating to firm value, the MTB ratio has a wide range extending from (-1.457) to (6.848). The maximum value of (6.848) suggests that some sampled firms have unrecognized goodwill making investors desire to trade firms' stocks at a premium to their book value, assuming market efficiency and that irrationality has a short-term impact while the market takes on an equilibrium in the long term. Conversely, the minimum value of (-1.457) indicates that some firms in the Egyptian stock market suffer from recurring retained losses. Then, when the retained losses accumulate to the extent that they exceed a firm's total equity, the firm's equity becomes negative, which results in a pessimistic valuation of negative MTB firms. The large standard deviation (2.077) supports the wide variations among the sampled Egyptian firms regarding the MTB ratio. However, firms with positive MTB dominate the sample as evidenced by the positive value of the average MTB ratio of 2.104. This reflects that the average sampled firms are optimistically perceived and positively evaluated as their market values exceed their book values.

In terms of profitability, the average ROA is (.057), which means that on average, the Egyptian sampled firms achieve returns on their assets of around 5.7%, indicating that for every Egyptian pound, the firms invest in their assets achieve an average of .057 pounds. The minimum value is negative (-.156), indicating that some firms in the Egyptian environment suffer from a negative rate of return on their assets due to their inefficient utilization of their assets and resources. Conversely, the maximum value (.294) indicates that other firms achieve a positive rate of return on their assets, reaching up to 29.4%, as they optimally exploit their resources to maximize profitability. Consistent with the wide range, the standard deviation (.106) shows a large dispersion around the mean. As seen in Panel (B) of Table (2), the frequencies of DW within the sampled Egyptian firms reveal that 48.15% ($n = 325$) of the sample misrepresent their commitment to the percentage of women in the boardroom. In contrast, 51.85% ($n = 350$) of the sample accurately represents the proportion of female directors. Notably, the frequencies of diversity washers and non-diversity washers are very close, with only a 3.7% difference. This suggests that approximately half of the sampled firms engage in DW.

In conclusion, the descriptive statistics reveal a relative heterogeneity within the sample. As such, the Egyptian stock market includes firms that misclassify operating expenses and revenues compared to firms that do not engage in misclassification of operating expenses and revenues. DW firms compared to no DW firms. Firms with zero female directors compared to firms with 38% female directors on corporate boards. Heavily indebted firms compared to firms approaching self-financing. Firms suffer from more cash outflows than inflows from operations compared to firms that have positive net cash flow from operations. Positively valued firms compared to negatively valued firms. Finally, Profitable firms are compared to unprofitable firms that struggle to operate. However, it is worth noting that firm size stands out as the only highly homogenous variable in the sample. This homogeneity arises due to the utilization of the natural logarithm, which smoothers the data set.

4.2 Two-sample t-test with Equal Variances

To examine whether the two employed proxies of CS vary across two different samples of diversity-washers and non-diversity washers, the two-sample t-test with equal variances is used to compare the means of two independent datasets.

Table (3): Two-sample t test with equal variances

	Diversity- Washers (1)	Non-diversity Washers (2)	Diff. (3)	p value (4)
CS_ES	.113	0.131	.018	.145
CS_RS	.127	0.143	.017*	.076

This table reports the differences between the means for a sample of diversity-washing firms and a sample of non-diversity washing firms. Where, column 1 reports the means for diversity-washers sample. Column 2 reports the means for non-diversity washer's sample. Column 3 reports the mean difference between diversity washers and non-diversity washers, and column 4 reports the P-value for the difference. CS_ES is the operating expenses misclassification. CS_RS is the operating revenues misclassification. Levels of significance are presented as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table (3) reveals that there is a statistically significant difference in the average values of misclassified operating revenues between the diversity washers and the non-diversity washers, at a 10% significance level. This difference is significant, with the average diversity-washers of (.127) having approximately 1.7% less misclassified operating revenues relative to the average non-diversity washers of (0.143). This significant difference between the two means is greater than a difference attributable to randomness or sampling error, indicating that the observed difference is more likely to be due to the statistical characteristics of two independent sets of observations. On the other hand, there is **no** significant difference between the arithmetic means of misclassification of operating expenses between diversity washers and non-diversity washers. Accordingly, the dataset does **not** support the presence of a statistically significant difference in the misclassification of operating expenses for the diversity-washers and the non-diversity washers.

4.3 Correlation Analysis Results

The Pearson Correlation matrix offers a preliminary understanding of the linear relationships among the current study's variables. Correlation coefficients are employed to determine both the direction and strength of the linear relationship between any two variables included in this research. Furthermore, correlation coefficients are employed to detect any potential multicollinearity among regressors within the same regression model, which may result in imprecise estimations.

Table (4): Correlation Matrix (Pairwise Correlations)

Variables	CS_ES	CS_RS	GDR	Size	Lev	OCF	MTB	ROA
(1) CS_ES	1.000							
(2) CS_RS	-0.126*** (0.001)	1.000						
(3) GDR	0.028 (0.462)	0.038 (0.325)	1.000					
(4) Size	0.008 (0.826)	-0.100*** (0.009)	-0.039 (0.314)	1.000				
(5) Lev	-0.073* (0.059)	-0.007 (0.858)	-0.050 (0.197)	0.279*** (0.000)	1.000			
(6) OCF	-0.111*** (0.004)	0.157*** (0.000)	0.019 (0.630)	0.186*** (0.000)	-0.242*** (0.000)	1.000		
(7) MTB	0.008 (0.841)	0.044 (0.251)	0.066* (0.085)	0.026 (0.493)	0.021 (0.587)	0.197*** (0.000)	1.000	
(8) ROA	-0.119*** (0.002)	0.129*** (0.001)	0.063* (0.104)	0.269*** (0.000)	-0.279*** (0.000)	0.591*** (0.000)	0.270*** (0.000)	1.000

This table reports the Pearson correlations among variables of interest. Where, CS_ES is the operating expenses misclassification. CS_RS is the operating revenues misclassification. GDR is the gender diversity ratio. Size is the firm size. Lev is the firm's financial leverage. OCF is the net operating cash flows ratio. MTB is the market-to-book ratio. ROA is the return on assets. Levels of significance are presented as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Pearson's correlation matrix reported in Table (4) reveals that there is a significant negative correlation between the two proxies of the current study's dependent variable. This suggests that CS_ES and CS_RS are considered alternatives to each other in reflecting the income shifting. Indeed, engaging in one misclassification technique —whether it is CS_ES or CS_RS — tends to reduce engagement in the other technique, as they do not complement each other. Concerning GDR, it has **no** linear correlation with the CS_ES and CS_RS. Concerning the firm-specific characteristics, CS_ES has a significant negative association with Lev, OCF, and ROA. On the other hand, CS_ES has an insignificant linear association with size and MTB. Continuing with the firm-specific characteristics, CS_RS has a significant positive association with OCF and ROA and a significant negative association with size. While CS_RS has an insignificant linear association with Lev and MTB. According to the detection of multicollinearity among the regressors in each model, the results indicate that there is no potential for multicollinearity issues among all explanatory variables in the analysis. The highest observed correlation coefficient equals 0.591 which is found between ROA and OCF. It is worth noting that Pearson's correlation coefficients do not account for non-linear relationships between variables. Therefore, it is essential to consider curvilinearity in the regression analysis.

4.4 Hypotheses Testing Results

To examine the impact of DW and the percentage of females in the boardroom on income shifting within the context of the Egyptian market, the researcher constructs four regression models. The first two models examine the impact of GDR and GDW on the CS_RS as a proxy for income classification shifting. The second two models examine the impact of GDR and GDW on the CS_ES as a proxy for income classification shifting. Based on operating revenue shifting (CS_RS) as a proxy for income classification shifting, the first two models are developed as follows:

Model 1: the impact of GDR on the CS_RS

$$\begin{aligned} CS_{RS_{i,t}} = & \beta_0 + \beta_1 GDR_{i,t} + \beta_2 GDR^2_{i,t} + \beta_3 GDR^3_{i,t} + \beta_4 Std_{Size_{i,t}} \\ & + \beta_5 Std_{Size}^2_{i,t} + \beta_6 Lev_{i,t} + \beta_7 Lev^2_{i,t} + \beta_8 ROA_{i,t} \\ & + \beta_9 OCF_{i,t} + \beta_{10} MTB_{i,t} + \varepsilon_{i,t} \end{aligned}$$

Model 2: the impact of GDW on the CS_RS

$$\begin{aligned} CS_{RS_{i,t}} = & \beta_0 + \beta_1 GDW_{i,t} + \beta_2 Std_Size_{i,t} + \beta_3 Std_Size^2_{i,t} + \beta_4 Lev_{i,t} \\ & + \beta_5 Lev^2_{i,t} + \beta_6 ROA_{i,t} + \beta_7 OCF_{i,t} + \beta_8 MTB_{i,t} + \varepsilon_{i,t} \end{aligned}$$

Table (5) reports the results of the regression analysis by providing three main panels: Panel (A) reports the results of the OLS goodness of fit tests to assess the validity of the first two models, Panel (B) reports the fitted GLS regression results, and Panel (C) reports the turning points of the non-linear effects in the first two models. The first two models are estimated using the Ordinary Least Squares (OLS) method and the Generalized Least Squares (GLS) method, which consider any potential issues that the OLS method may encounter. Before accepting the first two models as reliable models, there are some goodness of fit tests that should be conducted to confirm that the statistical techniques applied in the current study best fit the sampled data. These tests are the multicollinearity, heteroskedasticity, omitted variables, and autocorrelation.

Panel (A) of table (5) reveals that there is no multicollinearity among the regressors of models 1 and 2. As Landau and Everitt (2004) and Field (2005) state multicollinearity exists when the VIF of any independent variable exceeds 10. Therefore, there is no multicollinearity among the explanatory variables included in the first two models. Furthermore, a serious heteroskedasticity issue exists in the first two models, because the p-value of the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity is less than 5% in models 1 and 2. Moreover, an autocorrelation issue exists in the first two models because the p-value of the Wooldridge test for autocorrelation in panel data is less than 5% in models 1 and 2. Relating to the results of the Ramsey RESET test for omitted variables, model 1 is well-specified because the p-value of the omitted variables test is greater than 5%. On the other hand, model 2 is misspecified because the p-value of the omitted variables test is less than 5%.

Panel (B) of the table (5) reports the fitted GLS regression results. The GLS method is employed to consider the econometric problems of heteroscedasticity, misspecification, and autocorrelation in the **first** two models. Additionally, the fitted models consider the potential non-linear relationships. The **first** two models are significant since their Prob > F is less than 0.05. According to the value of R-squared, the explanatory variables included in models 1 and 2 have explained around 59.4% and 58.9% of CS_RS as a proxy of income classification shifting, respectively. Concerning the main independent variables of interest, GDR shows a curvilinear effect on CS_RS as reported in model 1 in Panel (B) of Table (5). While GDW shows a significant negative linear effect on CS_RS as reported in Model 2 in Panel (B) of Table (5).

From Panels (B) and (C) of Table (5), GDR reveals a non-linear effect on CS_RS. As such, the results from model 1 indicate that the coefficient of GDR is significantly positive, while the coefficient of GDR^2 is significantly negative, and finally, the coefficient of GDR^3 is significantly positive. Accordingly, the pattern of the curvilinear effect of GDR on CS_RS takes the form of an N-shaped curve. In particular, the asymmetric effect of GDR on CS_RS includes two turning points, meaning that the direction of the effect changes twice during the sampled period. Initially, when the GDR increases from zero to 0.08775919716, the misclassification of operating revenue increases alongside the percentage of female representation on the board until the GDR reaches 8.78%. Subsequently, when GDR increases from 8.78% to 28.02%, CS_RS starts to decline. Finally, when GDR increases from 28.02% to 38%, CS_RS returns to amplify with the further increase in GDR. These two turning points indicate the potential existence of optimal levels for the percentage of women on board.

In terms of the firm-specific characteristics, Lev and Std_Size have a curvilinear effect on CS_RS as reported in the first two models. ROA and OCF have a significant positive linear effect on CS_RS as shown in models 1 and 2. While MTB has an insignificant effect on CS_RS in both models 1 and 2. The curvilinear effect of size on CS_RS takes the form of a U-shaped curve. As the coefficient of Std_Size is significantly negative, while the coefficient of Std_Size^2 is significantly positive. This means that the firm size has an initial deterrence effect on misclassifying operating revenues until the increase in firm size reaches a certain threshold (approximately 24 of the log-transformed total assets), which is considered a turning point beyond which the misclassification of operating revenues begins to amplify with the further increase in firm size. The asymmetric effect of leverage on CS_RS takes the form of an inverted U-shaped curve. As the coefficient of Lev is significantly positive, while the coefficient of Lev^2 is significantly negative. This means that the financial leverage has an initial magnifying effect on misclassifying operating revenues until the increase in leverage reaches a certain threshold (around 69% in model 1 and 70% in model 2), which is considered a turning point beyond which the misclassification of operating revenues begins to decline with the further increase in leverage.

The significant positive linear effect of ROA and OCF on the misclassification of operating revenue may stem from a combination of financial complexities and pressures within the firm. For instance, higher ROA and OCF may indicate a more complex financial environment within a firm. This complexity can lead to increased opportunities for intentional misclassification of operating revenue. Another possible explanation may be that firms with higher ROA and OCF may face greater pressure to maintain or improve their financial performance. This pressure can incentivize management to potentially manipulate and misclassify operating revenue to meet expectations.

Table (5): The Impact of Diversity Washing and the Percentage of Females in the Boardroom on Operating Revenues Shifting

Panel (A): The OLS Goodness of Fit Tests		
	(Model 1)	(Model 2)
ROA	1.822	1.822
OCF	1.57	1.57
Lev	1.319	1.318
Size	1.29	1.29
MTB	1.108	1.113
GDR	1.011	
GDW		1.018
Mean VIF	1.353	1.355
Heteroskedasticity	Prob > chi2 = 0.0000	Prob > chi2 = 0.0000
Omitted variables	Prob > F = 0.0614	Prob > F = 0.0188
Autocorrelation	Prob > F = 0.0273	Prob > F = 0.0295

Panel (B): Fitted Generalized Least Squares Regression Results		
Variable	(Model 1)	(Model 2)
GDR	0.92733***	
GDR2	-6.93830***	
GDR3	12.57169***	
GDW		-0.01515*
Std_Size	-0.03952***	-0.04117***
Std_Size2	0.01052***	0.01195***
Lev	0.38186***	0.42468***
Lev2	-0.27502***	-0.30420***
ROA	0.16713***	0.17948***
OCF	0.14355***	0.15177***

MTB	-0.003	-0.003
Number of obs	672	672
Prob > F	0.000	0.000
R-squared	0.594	0.589

Panel (C): The Turning Points of Non-linear Effects in the CS_RS Models

Variable	(Model 1)	(Model 2)
GDR	First Turning Point = $\frac{-2 \cdot \text{GDR}^2 - \sqrt{4 \cdot (\text{GDR}^2)^2 - 12 \cdot \text{GDR}^3 \cdot \text{GDR}}}{(6 \cdot \text{GDR}^3)} =$ 0.08775919716	
	Second Turning Point = $\frac{-2 \cdot \text{GDR}^2 + \sqrt{4 \cdot (\text{GDR}^2)^2 - 12 \cdot \text{GDR}^3 \cdot \text{GDR}}}{(6 \cdot \text{GDR}^3)} =$ 0.280173303	
Size	Coefficient of Std_Size = $\frac{-(\text{Coefficient of Std_Size}^2) \cdot 2}{1.878326996}$	Coefficient of Std_Size = $\frac{-(\text{Coefficient of Std_Size}^2) \cdot 2}{1.722594142}$
	Original Turning Point of Size = $(1.726 \cdot 1.8783) + 20.731 = 23.9729924$	Original Turning Point of Size = $(1.726 \cdot 1.7226) + 20.731 = 23.70419749$
Lev	Coefficient of Lev = $\frac{-(\text{Coefficient of Lev}^2) \cdot 2}{0.694240419}$	Coefficient of Lev = $\frac{-(\text{Coefficient of Lev}^2) \cdot 2}{0.698027613}$

This table reports the results of the first two models (Model 1 and Model 2). CS_RS is the operating revenues misclassification. GDR is the gender diversity ratio. GDR^2 is the quadratic value of GDR. GDR^3 is the cubic value of GDR. GDW is an indicator variable for gender-washing. Std_Size is the standardized value of firm size. Std_Size^2 is the quadratic value of Std_Size. Lev is the firm's financial leverage. Lev^2 is the quadratic value of Lev. ROA is the return on assets. OCF is the net operating cash flows ratio. MTB is the market-to-book ratio. Panel (A) reports the results of the OLS goodness of fit tests for the first two models. Panel (B) reports the fitted GLS regression results for the first two models. Panel (C) reports the turning points of the non-linear effects in the first two models. In Models 1 and 2, the dependent variable is CS_RS. Model 1 reports the GLS regression results of the impact of GDR on CS_RS. Model 2 reports the GLS regression results of the impact of GDW on CS_RS. Transforming the standardized value of size into its original value is done through the following equation: (Std_Size * Std. Dev. of Size) + Mean of Size. Levels of significance are presented as follows: *** p<0.01, ** p<0.05, * p<0.1

Based on operating expense shifting (CS_ES) as a proxy for income classification shifting, the second two models are developed as follows:

Model 3: the impact of GDR on the CS_ES

$$\begin{aligned} \text{CS_ES}_{i,t} = & \beta_0 + \beta_1 \text{GDR}_{i,t} + \beta_2 \text{GDR}^2_{i,t} + \beta_3 \text{Std_Size}_{i,t} + \beta_4 \text{Std_Size}^2_{i,t} \\ & + \beta_5 \text{Lev}_{i,t} + \beta_6 \text{Lev}^2_{i,t} + \beta_7 \text{ROA}_{i,t} + \beta_8 \text{OCF}_{i,t} \\ & + \beta_9 \text{MTB}_{i,t} + \beta_{10} \text{MTB}^2_{i,t} + \beta_{11} \text{Industry Fixed Effect}_{i,t} \\ & + \varepsilon_{i,t} \end{aligned}$$

Model 4: the impact of GDW on the CS_ES

$$\begin{aligned} \text{CS_ES}_{i,t} = & \beta_0 + \beta_1 \text{GDW}_{i,t} + \beta_2 \text{Std_Size}_{i,t} + \beta_3 \text{Std_Size}^2_{i,t} + \beta_4 \text{Lev}_{i,t} \\ & + \beta_5 \text{Lev}^2_{i,t} + \beta_6 \text{ROA}_{i,t} + \beta_7 \text{OCF}_{i,t} + \beta_8 \text{MTB}_{i,t} \\ & + \beta_9 \text{MTB}^2_{i,t} + \beta_{10} \text{Industry Fixed Effect}_{i,t} + \varepsilon_{i,t} \end{aligned}$$

Table (6) reports the results of the regression analysis by providing three main panels: Panel (A) reports the results of the OLS goodness of fit tests to assess the validity of models 3 and 4, Panel (B) reports the fitted GLS regression results, and Panel (C) reports the turning points of the non-linear effects in the second two models. The second two models (models 3 and 4) are estimated using the Ordinary Least Squares (OLS) method and the Generalized Least Squares (GLS) method, which consider any potential issues that the OLS method may encounter. Before accepting models 3 and 4 as reliable models, there are some goodness of fit tests that should be conducted to confirm that the statistical techniques applied in the current study best fit the sampled data. These tests are the multicollinearity, heteroskedasticity, omitted variables, and autocorrelation.

Panel (A) of table (6) reveals that there is no multicollinearity among the regressors of models 3 and 4. As Landau and Everitt (2004) and Field (2005) state multicollinearity exists when the VIF of any independent variable exceeds 10. Therefore, there is no multicollinearity among the explanatory variables included in the second two models. Furthermore, a serious heteroskedasticity issue exists in the second two models, because the p-value of the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity is less than 5% in models 3 and 4. Moreover, the results of the Ramsey RESET test for omitted variables reveal that models 3 and 4 are misspecified because the p-values of the omitted variables test are less than 5%. However, there is no serious autocorrelation issue in the second two models because the p-values of the Wooldridge test for autocorrelation in panel data are greater than 5% in models 3 and 4.

Panel (B) of the table (6) reports the fitted GLS regression results. The GLS method is employed to consider the econometric problems of heteroscedasticity and model misspecification in the **second** two models. Additionally, the fitted models consider the potential non-linear relationships. The **second** two models are significant since their Prob > F is less than 0.05. According to the value of R-squared, the explanatory variables included in models 3 and 4 have explained around 44.2% and 43.5% of CS_ES as a proxy of income classification shifting, respectively. Concerning the main independent variables of interest, GDR shows a curvilinear effect on CS_ES as reported in model 3 in Panel (B) of the table (6). While GDW shows an insignificant linear effect on CS_ES, as reported in Model 4 in Panel (B) of Table (6).

From Panels (B) and (C) of Table (6), GDR reveals a non-linear effect on CS_ES. As such, the results from model 3 indicate that the coefficient of GDR is significantly positive, while the coefficient of GDR^2 is significantly negative. Accordingly, the pattern of the curvilinear effect of GDR on CS_ES takes the form of an inverted-U-shaped curve. In particular, the asymmetric effect of GDR on CS_ES includes a turning point, meaning that the direction of the effect changes once during the sampled period. Initially, when the GDR increases from zero to 0.1999327028, the misclassification of operating expenses increases alongside the percentage of female representation on the board until the GDR reaches 19.99%. Subsequently, when GDR increases from 19.99% to 38%, CS_ES starts to decline with a further increase in GDR. This turning point indicates the potential existence of an optimal level for the percentage of women on board.

In terms of the firm-specific characteristics, Lev, Std_Size, and MTB have curvilinear effects on CS_ES as reported in models 3 and 4. ROA and OCF have an insignificant linear effect on CS_ES, as shown in models 3 and 4. The curvilinear effect of size on CS_ES takes the form of a U-shaped curve. As the coefficient of Std_Size is significantly negative, while the coefficient of Std_Size^2 is significantly positive. This means that the firm size has an initial deterrence effect on misclassifying operating expenses until the increase in firm size reaches a certain threshold (approximately 22 of the log-transformed total assets), which is considered a turning point beyond which the misclassification of operating expenses begins to amplify with the further increase in firm size.

The asymmetric effect of leverage on CS_ES takes the form of an inverted U-shaped curve. As the coefficient of Lev is significantly positive, while the coefficient of Lev² is significantly negative. This means that the financial leverage has an initial magnifying effect on misclassifying operating expenses until the increase in leverage reaches a certain threshold (around 52% in model 3 and 55% in model 4), which is considered a turning point beyond which the misclassification of operating expenses begins to decline with the further increase in leverage. The curvilinear effect of MTB on CS_ES takes the form of a U-shaped curve. As the coefficient of MTB is significantly negative, while the coefficient of MTB² is significantly positive. This means that the MTB ratio has an initial deterrence effect on misclassifying operating expenses until the increase in MTB reaches a certain threshold (around 2.44 in model 3 and 2.46 in model 4), which is considered as a turning point beyond which the misclassification of operating expenses begins to amplify with the further increase in MTB.

Table (6): The Impact of Diversity Washing and the Percentage of Females in the Boardroom on Operating Expense Shifting

Panel (A): The OLS Goodness of Fit Tests		
	(Model 3)	(Model 4)
ROA	1.822	1.822
OCF	1.57	1.57
Lev	1.319	1.318
Size	1.29	1.29
MTB	1.108	1.113
GDR	1.011	
GDW		1.018
Mean VIF	1.353	1.355
Heteroskedasticity	Prob > chi2 = 0.0000	Prob > chi2 = 0.0000
Omitted variables	Prob > F = 0.0411	Prob > F = 0.0140
Autocorrelation	Prob > F = 0.1007	Prob > F = 0.1061

Panel (B): Fitted Generalized Least Squares Regression Results		
Variable	(Model 3)	(Model 4)
GDR	0.43375***	
GDR2	-1.08474**	
GDW		-0.014
Std_Size	-0.02240***	-0.02710***
Std_Size2	0.01974***	0.02189***
Lev	0.38759***	0.47670***

Lev2	-0.37128***	-0.43545***
ROA	-0.094	-0.070
OCF	-0.024	-0.024
MTB	-0.01660*	-0.01787*
MTB2	0.00340**	0.00363***
Number of obs	672	672
Prob > F	0.000	0.000
R-squared	0.442	0.435
Industry-Fixed Effect	Yes	Yes

Panel (C): The Turning Points for Non-linear Effects in the CS_ES Models

	(Model 3)	(Model 4)
GDR	$\frac{\text{Coefficient of GDR}}{-(\text{Coefficient of GDR}^2)*2} = 0.1999327028$	
Size	$\frac{\text{Coefficient of Std_Size}}{-(\text{Coefficient of Std_Size}^2)*2} = 0.5673758865$ Original Turning Point of Size = $(1.726*0.5674) + 20.731 = 21.71029078$	$\frac{\text{Coefficient of Std_Size}}{-(\text{Coefficient of Std_Size}^2)*2} = 0.6190041115$ Original Turning Point of Size = $(1.726*0.619) + 20.731 = 21.7994011$
Lev	$\frac{\text{Coefficient of Lev}}{-(\text{Coefficient of Lev}^2)*2} = 0.5219645551$	$\frac{\text{Coefficient of Lev}}{-(\text{Coefficient of Lev}^2)*2} = 0.547364795$
MTB	$\frac{\text{Coefficient of MTB}}{-(\text{Coefficient of MTB}^2)*2} = 2.441176471$	$\frac{\text{Coefficient of MTB}}{-(\text{Coefficient of MTB}^2)*2} = 2.461432507$

This table reports the results of the second two models. CS_ES is the operating expenses misclassification. GDR is the gender diversity ratio. GDR² is the quadratic value of GDR. GDW is an indicator variable for gender-washing. Std_Size is the standardized value of firm size. Std_Size² is the quadratic value of Std_Size. Lev is the firm's financial leverage. Lev² is the quadratic value of Lev. ROA is the return on assets. OCF is the net operating cash flows ratio. MTB is the market-to-book ratio. MTB² is the quadratic value of MTB. Panel (A) reports the results of the OLS goodness of fit tests for the second two models. Panel (B) reports the fitted GLS regression results for the second two models. Panel (C) reports the turning points for the non-linear effects in the second two models. In Models 3 and 4, the dependent variable is CS_ES. Model 3 reports the GLS regression results of the impact of GDR on CS_ES. Model 4 reports the GLS regression results of the impact of GDW on CS_ES. Transforming the standardized value of size into its original value is done through the following equation: (Std_Size * Std. Dev. of Size) + Mean of Size. Levels of significance are presented as follows: *** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

Gender diversity has gained more attention in recent years, and there is a global push for women to serve on corporate boards to enhance corporate governance and decision-making. The goal of the study is to look into the connection between GD and the proportion of women in boardrooms with altering incomes. Income shifting is the dependent variable in the research model, while GD and the proportion of women in the boardroom are independent variables. Companies from Egypt that are listed on the Egyptian Stock Exchange (EGX) make up the population. The sample was gathered as a secondary source of data from the financial statements of 100 companies that are listed in Egypt. The sample companies were chosen from various sectors of the industry.

The finding may apparently indicate that there is no linear correlation between GD and CS_ES and CS_RS. However, it is normal because, on average, the Egyptian sampled firms have 9.7% women on the board, reflecting the inequality in gender representation in the boardroom. Furthermore, some firms in the Egyptian environment have a 100% male representation and zero female representation within the boardroom, as indicated by the minimum value. Considering Egypt's longstanding customs and traditions that have empowered the role of males at the expense of females in all spheres of life, it is deemed reasonable to have an average value of 9.7% of female directors on corporate boards.

On the other hand, GDR reveals a non-linear effect on CS_RS. GDR shows a curvilinear effect on CS_RS, taking the form of an N-shaped curve. So, when the GDR increases from zero to 0.08775919716, the misclassification of operating revenue increases alongside the percentage of female representation on the board until the GDR reaches 8.78%. Subsequently, when GDR increases from 8.78% to 28.02%, CS_RS starts to decline. Finally, when GDR increases from 28.02% to 38%, CS_RS returns to amplify with the further increase in GDR. These two turning points indicate the potential existence of optimal levels for the percentage of women on board. While GDW shows a significant negative linear effect on CS_RS. Moreover, GDR reveals a non-linear effect on CS_ES. It shows a curvilinear effect on CS_ES. While GDW shows an insignificant linear effect on CS_ES, the pattern of the curvilinear effect of GDR on CS_ES takes the form of an inverted-U-shaped curve. So, when the GDR increases from zero to

0.1999327028, the misclassification of operating expenses increases alongside the percentage of female representation on the board until the GDR reaches 19.99%. Subsequently, when GDR increases from 19.99% to 38%, CS_ES starts to decline with a further increase in GDR. This turning point indicates the potential existence of an optimal level for the percentage of women on board.

Some limitations exist in the current study. This study focuses only on studying the effect of GW and GD on revenue and expense income shifting. The data collection will be conducted on only 100 companies that are listed in the Egyptian Stock Market, covering the period from 2014 to 2023. As the basis for further growth, this study identifies several issues that require more investigation. Since the focus of this study emphasizes solely on income shifting as a kind of EM, further research is required to examine other forms of EM, including REM and AEM. It is also necessary to compare Egypt with other developed nations that value diversity and have varied boardrooms to analyze GW and GD on other factors like innovation and corruption. Lastly, the findings of this study require further explanation regarding the significant role of women in our society as well as ways to empower women.

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