THE EFFECT OF CLASSIFICATION SHIFTING ON THE MARKET VALUE OF INDUSTRIAL COMPANIES

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Abstract

This study aimed to investigate the impact of classification shifting (CS) practices in financial statements, specifically income classification shifting (ICS), operating cash flow classification shifting (CFCS), and balance sheet classification shifting (BSCS), on the market value of Jordanian industrial companies. Employing a descriptive-analytical approach, the study analyzed the financial statements of a sample of 30 industrial companies listed on the Amman Stock Exchange over the period 2018–2023. The results of a multiple linear regression analysis revealed that CS practices do indeed influence the market value of these companies. These results are consistent with prior evidence suggesting that managers strategically use income statement presentation to influence investor perceptions without altering firm fundamentals (McVay, 2006; Anagnostopoulou & Malikov, 2023). Notably, significant effects were observed in both ICS and BSCS, whereas operating CFCS showed no significant impact. Based on these findings, the study recommends that Jordanian industrial companies adopt a standardized framework for financial statement classification. Such a framework would enhance comparability across firms, reduce opportunities for accounting manipulation, and ultimately improve market efficiency and the reliability of stock valuations.

Keywords: Classification Shifting, Income Classification Shifting, Cash Flow Classification Shifting (CFCS), Balance Sheet Classification Shifting, Market Value, Industrial Companies

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1. INTRODUCTION

Firms rely on fiscal reporting frameworks to reflect their financial health and market value accurately. Stakeholders depend on correct financial categorization to draw valid conclusions. Bansal et al. (2021) describe classification shifting (CS) as a practice that alters financial statement information to present more favorable figures without changing total revenue or cash flow. This manipulation affects financial statement reporting, potentially influencing market perception and value. The research focuses on market values of industrial companies in relation to CS, specifically income classification shifting (ICS), cash flow classification shifting (CFCS), and balance sheet classification shifting (BSCS).

Managers commonly engage in ICS by moving main operating costs into unrelated expense segments to raise operating profits (McVay, 2006). The inaccurate classification techniques trick shareholders into believing improved operational performance, which leads investors to pay higher

stock prices and assign increased value to the company (Nagar & Sen, 2017). The malleability of CS as an earnings management method gains limited attention because this form of manipulation prevents total earnings change, thus validating it as less overt than other methods (Mamatzakis & Tsionas, 2025). The changes in accounting classifications at industrial companies cause substantial market misinformation regarding their operational performance results.

A company misclassifies cash flows between operating, investing, and financing activities when using CFCS. This misclassification can mislead stakeholders by suggesting that core operations are generating better cash flows (Nagar & Sen, 2017).

The practice of CS impacts more than technical and financial reporting requirements. The practice damages financial statement credibility while affecting reported earnings quality, which reduces market investor confidence in financial markets. According to Bansal et al. (2021), regulatory penalties and reputational damage, alongside valuation loss, occur in the long run after CS unveils misstatements

Financial ratios utilized by analysts and investors lose their reliability when CS tactics are adopted. Investment decisions become erroneous because the cash flow-to-sales ratio, along with operating margin and operating cash flow yield, gets distorted through CS (Mamatzakis & Tsionas, 2025).

While substantial literature exists on accrual-based and real earnings management, limited research has focused on CS and its discrete components (ICS, CFCS, BSCS), particularly in the context of emerging markets like Jordan.

This research examines how CS behavior impacts the market values of industrial companies amidst growing industry concerns. It categorizes CS into three types: ICS, CFCS, and BSCS, and highlights the financial misclassification effects on market valuation and investor perception. The study aims to enhance financial reporting standards and reduce CS incidents in industrial enterprises.

Industrial businesses face major challenges from wrongful financial reporting, which undermines investor trust and hinders capital acquisition. According to Pan et al. (2019), businesses often reclassify essential costs into non-core categories to enhance core earnings and mislead investors about actual profits. The CFCS method also distorts perceptions of financial liquidity by moving financing or investing transactions into operating cash flow records (Ibrahim et al., 2024).

CS brings inaccurate financial reporting through wrong ratio calculations that lead to poor investment judgments and unreliable market evaluations. Studies have demonstrated that CS generates multiple negative effects that extend across time, including poor stock performance along with higher market volatility and decimated investor confidence (Anagnostopoulou et al., 2021). This research investigates the relationship between income and cash flow classifications with other related factors on industrial market values.

The study's problem can be described by answering the following questions:

RQ1: What is the impact of CS, with related dimensions (ICS, CFCS, and BSCS), on the market value of industrial companies?

This primary question leads to the following additional questions:

RQ2: Does ICS impact the market values in industrial companies?

RQ3: Does CFCS impact the market values in industrial companies?

RQ4: Does BSCS impact the market values in industrial companies?

This research examines how different classifications of financial statements affect stock values in industrial companies. Misclassifying financial statement items through CS practices allows for inaccurate reporting of performance without impacting cash flow or net income. The study focuses on three areas of CS: ICS, CFCS, and BSCS. Its objective is to assess the impact of these practices on investor behavior and financial ratios, as well as their implications for market value in the industrial sector. The research offers practical recommendations to reduce CS practices and enhance financial reporting quality.

This research is significant for several reasons. It contributes to the study of earnings management by examining CS, an area that remains underexplored. While previous studies focused on accruals-based and real earnings management, CS poses a more challenging detection problem but has similar negative effects on market efficiency (Ha & Thomas, 2020). The findings offer operational benefits for auditors, regulators, and financial analysts. Auditors gain valuable insights to enhance their detection and monitoring of CS, while regulators can use the results to improve transparency standards in cash flow and income reporting (Chung & Chae, 2020).

Financial analysts are advised to scrutinize financial reports for misclassifications, enabling better financial decision-making and reducing the likelihood of performance misunderstandings (Anagnostopoulou & Malikov, 2023). Ultimately, improving financial reporting enhances market efficiency and boosts investor trust.

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 presents the research methodology. Section 4 reports the empirical results, while Section 5 discusses the findings in light of previous studies. Section 6 concludes with a summary of the main findings, limitations, and future research directions.

2. LITERATURE REVIEW

The academic field shows that CS significantly impacts financial reporting and market valuation. Financial stakeholders assess firm health through three key dimensions: ICS, CFCS, and BSCS. Increased perceived market liquidity from CFCS can lead to short-term value gains, but ICS may erode investor trust due to inflated core income figures. To counter CS threats and safeguard long-term performance, companies need strong governance and transparent reporting practices.

Managers widely utilize CS as an earnings management approach because it enables them to alter the financial statement display while keeping net income unchanged. A company's financial health

gets misrepresented through the process of moving main expenses to non-operating divisions while elevating cash flow elements. Studies show that CS stands apart from accrual-based or real earnings management as it remains harder for identification while being classified as less expensive for earnings manipulation (McVay, 2006). The three main aspects of CS become the focus of the next section through examination of ICS, CFCS, and BSCS.

2.1. Income classification shifting

Managers inflate core earnings by shifting core expenses to non-operating categories, aiming to present stable net income and enhance operational results for investors (Al-Own et al., 2023). However, Anagnostopoulou et al. (2021) found that firms using these tactics around initial public offerings (IPOs) had lower survival rates due to misleading profitability signals, which also hurt long-term performance and diminished investor trust.

The study by Ibrahim et al. (2024) in the Egyptian market revealed that Investing Company Statutes have negative effects on market-to-book ratios, indicating that investors impose penalties on firms practicing such actions. Market trust, alongside investor confidence, depends heavily on proper tax classification systems, which this study demonstrates to be essential for financial health. Management engages in ICS mainly for two reasons: meeting bonus criteria and preventing regulatory inspections (McVay 2006).

2.2. Cash flow classification shifting

When a firm moves financing or investing cash flows into operating cash flows, they improve their liquidity appearance through CFCS. The manipulative action of shifting cash flows between categories results in a substantial alteration of a company's cash generation process, along with misdirecting investor analytics (Saidat et al., 2023). The research by Bansal et al. (2021) examined Indian businesses to reveal that major enterprises utilized CFCS to boost their operating cash flow reports, which then impacted lending choices as well as investor actions.

According to Mulchandani et al. (2024), firms at different stages of implementation employ CFCS to manage their performance metrics. From their research, it was concluded that firms at their introduction and growth stages had higher tendencies to resort to CFCS to represent higher liquidity (Mulchandani et al., 2023). The analysis of cash flow statements requires stakeholders to evaluate these financial statements closely since evidence of manipulation may exist.

2.3. Balance sheet classification shifting

The balance sheet classification significantly influences how investors view a company's financial position. Assets and liabilities are categorized based on materiality and liquidity principles. Keohane and Schap (2021) study employee misclassification and the losses that result from it, emphasizing how legal interpretations can greatly increase employer culpability. Their analysis highlights how court rulings, including the Somers case in Massachusetts, have improved worker protections by making businesses that mistakenly categorize employees as independent contractors face more financial and legal repercussions.

Market value exhibits conflicting effects according to the findings presented by Ibrahim et al. (2024). Market-to-book ratios receive positive effects from CFCS because of increased market perception of liquidity, while ICS damages investor confidence by inflating core earnings. Market valuation shows an intricate relationship with the ways financial statements are classified.

The study conducted by Ibrahim et al. (2024) examines how CS performed by Egyptian companies affected their corporate worth throughout 2017 through 2021. The analytical results that stem from generalized least squares regression show that CFCS generates a positive impact on the market-to-book ratio, combined with negative results from ICS towards market valuation. The research by Ibrahim et al. (2024) directly mirrors the project since it studies the direct link between financial statement classification and firm value, thus providing vital references for this study.

Abu Hamour et al. (2024) emphasize that financial reporting quality is a pillar as far as earnings credibility is concerned, especially in industrial industries where the most important factors are capital intensity and asset transparency. The research targets Jordanian companies and shows that poor-quality disclosures make the earnings more prone to manipulation in terms of classification shifting, which undermines investor confidence. The results indicate that improved reporting practices and audit controls have the potential to greatly decrease the misclassification of revenues, costs, or debts.

Anagnostopoulou et al. (2021) explore how changes in financial statement classifications impact the life expectancy of newly listed companies. Their analysis shows that relocating operational costs to special items reduces IPO success and long-term performance. This study emphasizes the significant effects of CS on financial misrepresentation in industrial enterprises.

Rehman et al. (2024) conducted a study dedicated to analyzing Chinese-listed firms regarding their revenue misclassification throughout 2003–2019. The analysis shows through fixed-effect panel regression that companies deliberately shift their non-operating revenues to operating revenue to improve core earnings figures. The analysis of revenue misclassification methods in this paper matches the research direction of income classification variations because both approaches impact market valuation measurements.

Anagnostopoulou et al. (2021) focus on the long-term effects of such classification transition on new firms at the time of the listing, especially with IPOs. Their findings indicate that mispricing operational costs as special items or operating on core earnings at the IPO stage by companies tends to be poor in stock performance and poor in retaining investors after IPO. This underscores reputational and valuation risks of classification manipulation and the value of consistent reporting of financial reports, which is transparent to assure long-term sustainable value of the market.

Shcherbakova and Shcherbakov (2020) create factor models based on cash flow for determining

corporate worth. The authors used financial, economic mathematical methods to study three Russian tech companies and established that classical financial metrics alone are inadequate for complete company valuation. The paper directly addresses cash flow modeling developments that affect market value evaluation, similar to the focus on shifting cash flow classification effects.

The study by Toumeh et al. (2020) examines how surplus free cash flow and stock market segmentations influence earnings management in Jordanian firms. It shows that inorganic-free cash flow has a strong connection to earnings management, resulting in higher income values. This understanding of free cash flow manipulation offers insights into cash flow classification methods and their impact on market perception and company value.

Shin et al. (2024) investigate the influence of ongoing special items on the prediction of income classification decisions. Repeated special items in firms seem to increase the likelihood of these firms shifting their earnings across different income classifications. The researchers validate the importance of studying ICS through empirical evidence showing that repetitive special items promote financial manipulation.

The existing literature about CS provides important information about different types of financial misclassification impacts on market value. This research fills important gaps which were not yet been resolved among existing studies about CS behavior. Ibrahim et al. (2024) and Bansal et al. (2021) study shifting factors of a class independently, whereas the current study aims to study the combined impacts of market values of liability, equity, and mezzanine shifts. Research work must adopt an integrated perspective for studying the overall impact of different classes on investor perceptions and market valuations in industrial sectors.

The research lacks adequate market analysis on sector concentration, focusing solely on Chinese-listed and newly listed firms. Consequently, the studies by Rehman et al. (2024) and Anagnostopoulou et al. (2021) do not apply to industrial companies in developing markets. Given the capital-intensive nature of industrial operations, there is a need to investigate how classification shifts in liabilities, equity, and mezzanine instruments affect market values. Specialized research is essential for the unique reporting requirements of these organizations.

The current research about CS fails to investigate the long-term marketplace effects that result in changes to firm valuation, together with market participant actions. The studies conducted by Shin et al. (2024) and Toumeh et al. (2020) reveal immediate performance manipulations stemming from CS, yet they fail to establish complete insights about long-term corporate valuation effects and investor reliability measures. Analysis of long-term effects from classifying shifts remains essential because it determines how frequently misclassification modifies financial quality alongside business reliability and organizational image across multiple periods. The research identifies an essential gap in understanding the long-term market effects of industrial sector CS practices and seeks to fill it through extended analysis.

According to the conducted review, the following is the main derived hypothesis:

H_0: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) of classification shifting, with its related dimensions: (ICS, CFCS, and BSCS), on the market value of industrial companies.

The primary hypothesis provides the basis for the following sub-hypotheses:

$H1_0$: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) of ICS on the market value of industrial companies.

$H2_0$: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) of CFCS on the market value of industrial companies.

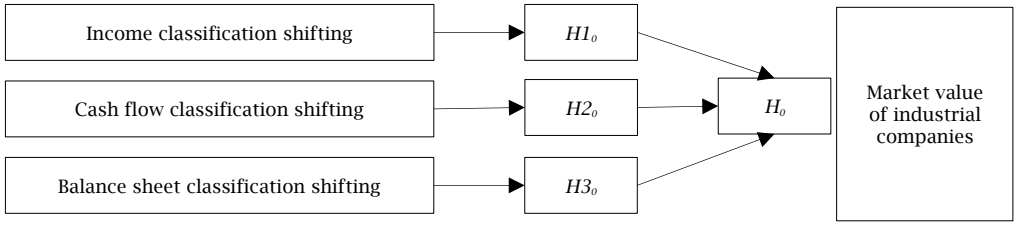
$H3_0$: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) of BSCS on the market value of industrial companies.

3. RESEARCH METHODOLOGY

The study employed a descriptive analytical approach, collecting data on CS practices in financial statements alongside market value indicators for Jordanian publicly listed industrial companies. The gathered data were subsequently analyzed, and hypotheses were tested to derive results, draw generalizations, and formulate recommendations. Even though the current study uses data regression, it could correspondingly have the methods of structural equation modeling (SEM), including logistic regression or machine learning (e.g., random forest classifiers) to examine classification shifting behavior. Such methods could provide better prediction or cause inference, but could not be as interpretable and powerful as regression in a panel context.

A representation of the study model can be seen in Figure 1, along with the research variables and the dimensions that correspond to them.

Figure 1. Study model



3.1. Study population and sample

The study population consisted of Jordanian industrial public shareholding companies listed on the Amman Stock Exchange, 46 industrial companies until the end of the year 2023 were included in the study sample, as they had all the data necessary to measure the variables. Following a thorough review, 30 industrial companies met these criteria for the study period and were consequently selected for analysis.

3.2. Data collection sources

The study relied on secondary sources to collect the necessary data for the study, which included:

1. Data on CS practices for financial statements, and market value, which were collected from annual reports, websites, disclosures and explanations, and any report published by the company.
2. Theoretical information, which was collected from theoretical scientific references represented by books, studies, research, and articles published in peer-reviewed scientific journals, websites, and public and university libraries.

3.3. Statistical tools used

E-views software was used to process the primary data, where the following statistical measures and tests were used:

1. Percentages, frequencies, arithmetic means, standard deviations, maximum and minimum values, in order to describe the study variables.
2. Linear correlation coefficient to test multicollinearity.
3. Unit root test, to determine the stationarity of a time series.
4. Multiple linear regression analysis using fixed and random effects models to test the hypotheses.

4. RESULTS

This section addresses the variables description, testing the suitability of the data, and testing the hypotheses.

4.1. Description of study variables

This section presents descriptive statistics for the independent, dependent, and control variables of the study, based on the annual financial data of Jordanian public shareholding industrial companies listed on the Amman Stock Exchange, for the period 2018–2023.

Table 1. Descriptive statistics for study variables for the period 2018–2023

Variable	*Measuring*				
	Mean	***Std. value***	***Max value***	***Min value***	***n***
MV	32,071,624	478,950,554	2,945,250	690,000	180
OECS	0.005	0.140	0.771	-0.451	180
ORCS	0.140	0.975	9.072	-0.944	180
CFCS	0.016	0.215	2.059	-0.464	180
CLCS	0.038	0.184	0.567	-0.494	180
LTLCS	-0.006	0.073	0.366	-0.480	180
SIZE	33,454,358	31,612,635	137,834,881	910,605	180
FL	38.068	23.379	92.647	0.473	180

Note: MV — market value, OECS — operating expense classification shifting practices, ORCS — operating revenue classification shifting practices, CFCS — cash flow classification shifting practices, CLCS — current liabilities classification shifting practices, LTLCS — long-term liabilities classification shifting practices, SIZE — company size, FL — financial leverage.

Table 1 shows the following:

- Market value (*MV*): The mean of the *MV* was 32.072 million JD, and the standard value was 478.951 million Jordanian dinar (JD). The maximum value was JD 2,945 million, while the minimum value was JD 0.690 million. This indicates a significant variation in *MV* among Jordanian industrial companies, which is due to differences in the size of companies, the scope of their operations, their administrative efficiency, their ability to innovate, and their access to foreign markets.
- Operating expenses classification shifting practices (*OECS*): The mean of the values of *OECS* practices was 0.005, and the standard value was 0.140. The maximum value was 0.771, while the minimum value was -0.451. This indicates that there is a large variation in the values of *OECS* practices among Jordanian industrial companies.
- Operating revenue classification shifting practices (*ORCS*): The mean of the values of the *ORCS* practices was 0.140, and the standard value was 0.975. The maximum value was 9.072, while the minimum value was -0.944. This indicates

that there is a large variation in the values of *ORCS* practices among Jordanian industrial companies.

• Cash flow classification shifting practices (*CFCS*): The mean of the values of the *CFCS* practices was 0.016, and the standard value was 0.215. The maximum value was 2.059, while the minimum value was -0.464. This indicates that there is a large variation in the values of *CFCS* practices among Jordanian industrial companies.

• Current liabilities classification shifting practices (*CLCS*): The mean of the values of the *CLCS* practices was 0.038, and the standard value was 0.184. The maximum value was 0.567, while the minimum value was -0.494. This indicates that there is a large variation in the values of *CLCS* practices among Jordanian industrial companies.

• Long-term liabilities classification shifting practices (*LTLCS*): The mean of the values of the LTLCS practices during 2018–2023 was -0.006, and the standard value was 0.073. The maximum value was 0.366, while the minimum value was -0.480. This indicates that there is a large variation in the values of *LTLCS* practices among Jordanian industrial companies.

• Company size (total assets) (*SIZE*): The mean of the *SIZE* was JD 33.454 million, and the standard value was JD 31.613 million. The maximum value was JD 137.835 million, while the minimum value was JD 0.911 million. This indicates the large disparity between the sizes of industrial companies, which may be due to differences in the type of industry, the diversity of its products, its market share, and its ability to provide financial resources.

• Financial leverage (*FL*): The mean of the *FL* ratio was 38.068%, and the standard value was 23.379%. The maximum value was 92.647%, while the minimum value was 0.473%. This indicates the difference in financing policies between industrial companies and the extent of reliance on external sources to finance assets and operations.

Based on the values of the CS practices of financial statements, it was determined whether the industrial companies were considered to be practicing CS during the period. The following table shows a description of the observations of the values of the CS practices of financial statements during the period.

Table 2. Distribution of industrial companies according to the classification shifting practices of financial statements during the period 2018–2023

Variable	*Practicing CS*		*Non-practicing CS*	
	Frequencies	*Percentages*	*Frequencies*	*Percentages*
OECS	55	30.6	125	69.4
ORCS	28	15.6	152	84.4
CFCS	54	30.0	126	70.0
CLCS	69	38.3	111	61.7
LTLCS	2	1.1	178	98.9

It is clear from Table 2 that the number of observations of companies that do not practice CS in the financial statements is greater than the number of companies that practice CS in the financial statements. This is an indication that the CS practices of financial statements are not a common phenomenon among Jordanian industrial companies in general.

4.2. Study variables

This study aimed to verify the impact of CS practices for financial statements on the market value of Jordanian industrial companies. Therefore, the study variables consisted of the following:

• Dependent variable: (*MV*).

The *MV* of industrial companies was measured directly from the annual reports published by industrial companies during the study period (2018–2023).

• Independent variables.

The variables of the current study included (CS) practices for financial statements, which included *ICS*, *CFCS*, and *BSCS*. These variables were measured as follows.

4.2.1. Classification shifting practices for the income statement

This variable included both *OECS* practices and *ORCS* practices. These two dimensions were measured as follows:

OECS dimension was measured based on the following model:

$$CE_{it} = \beta_0 + \beta_1 CE_{it-1} + \beta_2 ATO_{it-1} + \beta_3 ACCRUALS_{it} + \beta_4 \Delta SALES_{it} + \beta_5 NEG\Delta SALES_{it} + \varepsilon_{it} \quad (1)$$

where:

• CE_{it}: total operating expenses of company *i* in year *t*;

• CE_{it-1}: total operating expenses of company *i* in year *t* - 1;

• ATO_{it-1}: asset turnover ratio of company *i* in year *t* - 1;

• $ACCRUAL_{it}$: total receivables of company *i* in year *t*;

• $\Delta SALES_{it}$: change in operating revenue of company *i* in year *t*;

• $NEG\Delta SALES_{it}$: negative change in operating revenue of company *i* in year *t*;

• ε_{it}: random error.

ORCS dimension was measured based on the following model:

$$\frac{OR_{it}}{AT_{it-1}} = \alpha_0 + \beta_1 \frac{1}{AT_{it-1}} + \beta_2 \frac{OR_{it-1}}{AT_{it-1}} + \beta_3 MTB_{it-1} + \beta_4 \frac{AR_{it-1}}{AT_{it-2}} + \beta_5 \frac{AR_{it}}{2AT_{it-1}} + \varepsilon_{it} \quad (2)$$

where:

- OR_{it}: company i's operating revenue in year t;
- OR_{it-1}: company i's operating revenue in year t - 1;
- AT_{it}: company i's total assets in year t;
- AT_{it-1}: company i's total assets in year t - 1;
- AT_{it-2}: company i's total assets in year t - 2;
- MBT_{it-1}: company i's book value in year t;
- AR_{it}: company i's accounts receivable in year t;
- AR_{it-1}: company i's accounts receivable in year t - 1;
- ε_{it}: random error.

4.2.2. Classification shifting practices for the cash flow statement

This variable was measured based on the following model:

$$\frac{CFO_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{S_{it}}{A_{it-1}} + \alpha_3 \frac{\Delta S_{it}}{A_{it-1}} + \varepsilon_{it} \quad (3)$$

where:

- CFO_{it}: company i's operating cash flows in year t;
- A_{it-1}: company i's total cash flows in year t - 1;
- S_{it}: company i's operating revenues in year t;
- ΔS_{it}: change in company i's operating revenues in year t;
- ε_{it}: random error.

4.2.3. Classification shifting practices for the balance sheet statement

This variable included both current liabilities classification shifting practices and long-term liabilities classification shifting practices. These two dimensions were measured as follows.

CLCS dimension was measured based on the following model:

$$\Delta CL_{it} = \beta_0 + \beta_1 CL_{it-1} + \beta_2 \Delta CL_{it-1} + \beta_3 CA_{it-1} + \beta_4 \Delta CA_{it} + \beta_5 ACCRUAL_{it-1} + \beta_6 ACCRUAL_{it} + \beta_7 GROW_{it} + \beta_8 ROA_{it-1} + \beta_9 ROA_{it} + \varepsilon_{it} \quad (4)$$

where:

- ΔCL_{it}: change in firm i's current liabilities in year t;
- CL_{it}: total firm i's current liabilities in year t;
- CA_{it}: total firm i's current assets in year t;
- ΔCA_{it}: change in firm i's current assets in year t;
- $ACCRUAL_{it}$: total firm i's receivables in year t;
- $ACCRUAL_{it-1}$: total firm i's receivables in year t - 1;
- $GROW_{it}$: growth rate of firm i in year t;
- ROA_{it}: return on assets of firm i in year t;
- ROA_{it-1}: return on assets of firm i in year t - 1;
- ε_{it}: random error.

LTLCS dimension was measured based on the following model:

$$\Delta LTL_{it} = \beta_0 + \beta_1 LTL_{it-1} + \beta_2 \Delta LTL_{it-1} + \beta_3 LTA_{it-1} + \beta_4 \Delta LTA_{it} + \beta_5 ACCRUAL_{it-1} + \beta_6 ACCRUAL_{it} + \beta_7 GROW_{it} + \beta_8 ROA_{it-1} + \beta_9 ROA_{it} + \varepsilon_{it} \quad (5)$$

where:

- LTL_{it}: total long-term liabilities of firm i in year t;
- LTL_{it-1}: total long-term liabilities of firm i in year t - 1;
- ΔLTL_{it-1}: change in long-term liabilities of firm i in year t - 1;
- ΔLTA_{it}: change in long-term assets of firm i in year t;
- $ACCRUAL_{it}$: total receivables of firm i in year t;
- $ACCRUAL_{it-1}$: total receivables of firm i in year t - 1;
- $GROW_{it}$: growth rate of firm i in year t;
- ROA_{it}: return on assets of firm i in year t;
- ROA_{it-1}: return on assets of firm i in year t - 1;
- ε_{it}: random error.

Classification of companies. Practicing CS in financial statements occurs when a company's absolute value of residuals for the year is equal to or greater than the average for all companies. In contrast, non-practicing CS occurs when the absolute value of residuals falls below the average. Practicing companies are assigned a value of 1, while non-practicing companies are assigned a value of 0.

Controlling variables. They included the company size and the financial leverage ratio. These variables were measured as follows:

- Company size: measured by taking the natural logarithm of the company's total assets.
- Financial leverage: measured by the debt ratio, which results from dividing the company's total liabilities by its total assets.

4.3. Multicollinearity test between variables

The independence of independent variables is crucial for the validity of the general linear model, as emphasized by Gujarati (2004). Multicollinearity, which reflects a near-perfect linear relationship between variables, can inflate the coefficient of determination (R^2), indicating a lack of independence. To ensure this independence, the correlation coefficients among the independent variables were calculated to check for multicollinearity. The results were as follows.

Table 3. Correlation matrix for independent variables

Variable	OECS	ORCS	CFCS	CLCS	LTLCS	SIZE	FL
OECS	1.000						
ORCS	0.106	1.000					
CFCS	0.110	0.328	1.000				
CLCS	-0.210	-0.137	0.019	1.000			
LTLCS	-0.006	0.037	-0.007	-0.195	1.000		
SIZE	-0.075	-0.220	-0.089	0.095	0.024	1.000	
FL	-0.216	-0.077	-0.057	0.221	0.039	0.282	1.000

Note: At a significance level of 0.05.

Table 3 shows that the value of the correlation coefficient between the two variables, *ORCS* and *CFCS,* is 0.328, which is a value that indicates the absence of the phenomenon of multicollinearity between the independent variables, as it was less than 0.80. Therefore, it can be said that the sample is free from the problem of high multicollinearity and thus the independence of the independent variables (Gujarati, 2004).

To confirm the previous result, the values of the variance inflation factor (VIF) were calculated for these variables, and the results were as follows.

Table 4. VIF value for the independent variables

Variable	*VIF*
OECS	1.096
ORCS	1.193
CFCS	1.137
CLCS	1.156
LTLCS	1.050
SIZE	1.136
FL	1.174

Table 4 shows that the values of VIF were all greater than 1 and less than 10, indicating that there was no problem of multicollinearity among all study variables (Gujarati, 2004).

4.4. Stationary test

Time series stationarity refers to the stability of time series values over a period. Stationarity is achieved when the data are free of unit roots. To confirm this, the Levin–Lin–Chu (LLC) test was performed, where a p-value less than 0.05 indicates the absence of a unit root problem. The results were as follows.

Table 5. LLC test results for study variables

Variable	*Calculated value at level*	*P-value*
MV	-4.276	0.001
OECS	-14.617	0.000
ORCS	-13.611	0.000
CFCS	-13.468	0.000
CLCS	-6.537	0.000
LTLCS	-14.182	0.000
SIZE	-3.539	0.008
FL	-5.586	0.000

Table 5 shows that all the time series data of the study are stable, as all probability values (p-value) appeared less than 0.05. Thus, the data are free from the unit root problem.

4.5. Estimation of study models

Model estimation aims to determine the type of regression models that are consistent with the study's hypotheses. Regression models are classified into three types:

1. Pooled regression model (PRM).
2. Fixed effect model (FEM).
3. Random effect model (REM).

To determine which of these models should be chosen and used in the analysis, the Lagrange multiplier test was applied and used to choose between REM and PRM. The Hausman test was also used to choose between FEM and REM, and the results were as follows.

Table 6. Results of estimating the study hypotheses

Hypotheses	*Lagrange multiplier*		*Hausman*		*The most accurate and consistent model*
	Ch²	*Sig*	*Ch²*	*Sig*	
H_0	562.578	0.000	52.556	0.000	FEM
$H1_0$	600.338	0.000	20.018	0.003	FEM
$H2_0$	611.408	0.000	7.519	0.111	REM
$H3_0$	606.829	0.000	21.171	0.002	FEM

The results of Table 6 indicate that the FEM was the most accurate in estimating the model for the H_0 of the study and $H1_0$ and $H3_0$, as it appeared that the value of the Hausman test was at a significance level of less than 0.05. While the REM was the most accurate in estimating the model for the $H2_0$, the Lagrange multiplier test value appeared at a significance level of less than 0.05, while the Hausman test value appeared at a significance level of greater than 0.05.

4.6. Hypothesis test results

This part of the study presents the results of hypothesis testing, where the hypotheses were subjected to multiple regression analysis using appropriate estimates for each one. The values of the independent variables for the previous year were included to measure the impact of these values on the MV of industrial companies in the current year.

Table 7. Model summary and ANOVA analysis for H_0

Dep. var.	*R^2-value*	*Adj. R^2-value*	*SEM*	*F-statistic*	*Sig (F)*
Market value	0.353	0.296	1.220	6.145	0.000

Table 7 shows the significance of the model, where the F-statistic value was 6.145 at Sig (F) 0.000, which is less than 0.05. The R^2 value was 0.353, indicating that 35.3% of the change in *MV* can be explained by the independent variables.

Table 8. Regression coefficients for the null hypothesis

Independent variable	*B*	*SE*	*T-statistic*	*Sig T*
$OECS_t$	1.012	0.468	2.161	0.032
$ORCS_t$	-0.016	0.041	-0.384	0.701
$CFCS_t$	0.120	0.393	0.305	0.761
$CLCS_t$	0.781	0.235	3.331	0.001
$LTLCS_t$	2.857	0.445	6.417	0.000
$OECS_{t-1}$	1.367	0.428	3.197	0.002
$ORCS_{t-1}$	0.251	0.198	1.273	0.205
$CFCS_{t-1}$	0.156	0.227	0.687	0.494
$CLCS_{t-1}$	0.114	0.291	0.391	0.697
$LTLCS_{t-1}$	2.071	0.507	4.082	0.000
SIZE	0.438	0.010	44.867	0.000
FL	-1.186	0.291	-4.078	0.000
C	9.372	0.154	60.745	0.000

Table 8 highlights the influence of current-year independent dimensions on the *MV* of industrial companies. It shows a significant positive relationship between current-year *OECS* practices and *MV* (B = 1.012, p = 0.032), indicating an impact. Conversely, there is an insignificant negative relationship (B = -0.016, p = 0.701), suggesting no impact of *ORCS* practices on *MV*.

Further, the study found a positive but insignificant relationship between current-year *CFCS* practices and *MV* (B = 0.120, p = 0.761), indicating no impact. In contrast, current-year *CLCS* practices showed a significant positive relationship with *MV* (B = 0.781, p = 0.001), indicating an impact. Additionally, *LTLCS* practices also had a significant positive relationship with *MV* (B = 2.857, p = 0.000), indicating an impact as well.

Table 8 shows the impact of prior-year practices on the *MV* of industrial companies. There is a significant positive relationship between *OECS* practices from the previous year and *MV* (B = 1.367, p = 0.002). In contrast, *ORCS* practices showed a positive but insignificant relationship with *MV* (B = 0.251, p = 0.205), indicating no impact.

It was also found that there is a positive but insignificant relationship between prior-year *CFCS* practices and *MV* (B = 0.156, p = 0.687). Similarly, prior-year *CLCS* practices show a positive but insignificant effect on *MV* (B = 0.114, p = 0.391). In contrast, prior-year *LTLCS* practices have a significant positive relationship with *MV* (B = 2.071, p = 0.000), indicating an impact on *MV*.

Regarding the control variables, Table 8 shows a significant positive relationship between *SIZE* and *MV* (B = 0.438, 44.867, p = 0.000), indicating that *SIZE* impacts *MV*. In contrast, there is a significant negative relationship between *FL* and *MV* (B = -1.186, -4.078, p = 0.000), suggesting *FL* also affects *MV*.

Therefore, it becomes clear: There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of CS, with its related dimensions (ICS, CFCS, BSCS) on the MV of industrial companies.

Table 9. Model summary and ANOVA analysis for $H1_0$

Dep. var.	*R^2-value*	*Adj. R^2-value*	*SEM*	*F-statistic*	*Sig (F)*
Market value	0.230	0.197	1.402	7.010	0.000

Table 9 shows the significance of the model, where the F-statistic value was 7.010 at Sig (F) 0.000, which is less than 0.05. The R^2 value was 0.230, indicating that 23.0% of the change in *MV* can be explained by the independent variables.

Table 10. Regression coefficients for $H1_0$

Ind. var.	*B*	*SE*	*T-statistic*	*Sig T*
$OECS_t$	1.163	0.225	5.164	0.000
$ORCS_t$	-0.054	0.028	-1.929	0.056
$OECS_{t-1}$	1.654	0.236	7.005	0.000
$ORCS_{t-1}$	0.309	0.135	2.285	0.024
SIZE	0.257	0.018	14.132	0.000
FL	-0.643	0.243	-2.641	0.009
C	12.198	0.286	42.659	0.000

Table 10 shows the impact of income statement dimensions on the *MV* of industrial companies. It reveals a positive and significant relationship between current-year *OECS* practices and *MV* (B = 1.163, p = 0.000), indicating their impact. Conversely, there is a negative and insignificant relationship between current-year *ORCS* practices and *MV* (B = -0.054, p = 0.056), suggesting no impact.

Table 10 shows the impact of the prior-year's income statement dimensions on the *MV* of industrial companies. A significant positive relationship was found between prior-year *OECS* practices and *MV* (B = 1.654, p = 0.000), indicating an impact. Similarly, prior-year *ORCS* practices also showed a positive relationship with *MV* (B = 0.309, p = 0.024), indicating significance.

Regarding the control variables, Table 10 indicates the existence of a positive relationship between the *SIZE* and the *MV* (B = 0.257), and this relationship is considered significant (14.132, 0.000), indicating that there is an impact of the *SIZE* on the *MV*. It also indicated the existence of a negative relationship between the *FL* and the market value (B = -0.643), and this relationship is considered significant (-2.641, 0.009), indicating that there is an impact of the *FL* on the *MV*.

Therefore, it becomes clear: There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of ICS on the MV of industrial companies.

Table 11. Model summary and ANOVA analysis for $H2_0$

Dep. var.	*R^2-value*	*Adj. R^2-value*	*SEM*	*F-statistic*	*Sig (F)*
Market value	0.169	0.146	1.556	7.351	0.000

Table 11 shows the significance of the model, where the F-statistic value was 7.351 at Sig (F) 0.000, which is less than 0.05. The R^2 value was 0.169,

indicating that 16.9% of the change in *MV* can be explained by the independent variables.

Table 12. Regression coefficients for $H2_0$

Ind. var.	*B*	*SE*	*T-statistic*	*Sig T*
$CFCS_t$	0.229	0.183	1.249	0.214
$CFCS_{t-1}$	0.060	0.430	0.140	0.889
SIZE	0.218	0.024	9.068	0.006
FL	-0.810	0.288	-2.808	0.006
C	13.077	0.342	38.206	0.000

Table 12 illustrates the impact of the independent dimensions for the cash flow statement in the current year on the *MV* of industrial companies. It was found that there is a positive relationship between *CFCS* practices for the current year and *MV* (B = 0.229), and this relationship is considered insignificant (1.249, 0.214), indicating that there is no impact of *CFCS* practices for the current year on the *MV*.

Table 12 also illustrates the impact of the independent dimensions for the cash flow statement in the prior year on the *MV* of industrial companies. It was found that there is a positive relationship between *CFCS* practices for the prior year and *MV* (B = 0.060), and this relationship is considered insignificant (0.140, 0.889), indicating that there is no impact of *CFCS* practices for the prior year on the *MV*.

Regarding the control variables, Table 12 shows a significant positive relationship between *SIZE* and *MV* (B = 0.218, p = 0.006), indicating that *SIZE* impacts *MV*. Conversely, there is a significant negative relationship between *FL* and *MV* (B = -0.810, p = 0.006), suggesting that *FL* negatively affects *MV*.

Therefore, it becomes clear: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) of CFCS on the MV of industrial companies.

Table 13. Model summary and ANOVA analysis for $H3_0$

Dep. var.	R^2*-value*	*Adj.* R^2*-value*	*SEM*	*F-statistic*	*Sig (F)*
Market value	0.272	0.242	1.350	8.910	0.000

Table 13 shows the significance of the model, where the F-statistic value was 8.910 at Sig (F) 0.000, which is less than 0.05. The R^2 value was 0.272, indicating that 27.2% of the change in *MV* can be explained by the independent variables.

Table 14. Regression coefficients for $H3_0$

Ind. var.	*B*	*SE*	*T-statistic*	*Sig T*
$CLCS_t$	0.740	0.259	2.856	0.005
$LTLCS_t$	4.529	0.538	8.424	0.000
$CLCS_{t-1}$	0.023	0.146	0.160	0.873
$LTLCS_{t-1}$	2.741	0.744	3.684	0.000
SIZE	0.282	0.028	9.985	0.000
FL	-1.484	0.328	-4.522	0.000
C	12.118	0.505	23.990	0.000

Table 14 shows the positive impact of the current-year *CLCS* practices on the *MV* of industrial companies (B = 0.740, p = 0.005). Similarly, *LTLCS* practices also have a significant positive relationship with *MV* (B = 4.529, p = 0.000), indicating their impact as well.

Table 14 shows the prior-year's balance sheet dimensions' impact on the *MV* of industrial companies. There is a positive but insignificant relationship between the prior-year *CLCS* practices and *MV* (B = 0.023, p = 0.873), suggesting no impact. In contrast, there is a significant positive relationship between *LTLCS* practices and *MV* (B = 2.741, p = 0.000), indicating a notable impact.

Regarding the control variables, Table 14 shows a positive relationship between *SIZE* and *MV* (B = 0.282, p < 0.001), indicating that larger companies tend to have higher market values. Conversely, there is a negative relationship between *FL* and *MV* (B = -1.484, p < 0.001), suggesting that higher *FL* negatively impacts *MV*.

Therefore, it becomes clear: There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of BSCS on the MV of industrial companies.

5. DISCUSSION

The values of the operating expenses (CS) practices showed that there is a variation between companies in these values. This difference includes varying accounting policies used to classify costs, which can lead to discrepancies in financial reporting, varying management objectives or adherence to accounting standards, and some companies' desire to improve profitability indicators. However, the results indicate that this practice is not widespread among industrial companies, indicating that most of them adhere to relatively uniform standards in classifying operating expenses.

The ORCS values reveal variations between companies due to differences in accounting policies and revenue classification methods, impacting the accuracy of income source identification and performance comparisons. This discrepancy may stem from diverse management strategies and compliance with international accounting standards regarding revenue recognition timing. However, the results suggest that reclassifying operating income is uncommon among most industrial companies, indicating a reasonable consistency in accounting practices.

The values of the CFCS practices showed that there is a variation between companies in these values. This difference can be explained by several factors, including the varying financial strategies adopted by companies to improve the image of their financial statements, which may affect investors' and analysts' assessment of the quality of operating profits and the effectiveness of cash management. Despite this variation, the results indicate that the practice of reclassifying operating cash flows is not a common pattern among industrial companies, indicating a relative consistency in the accounting treatment of this financial item among most companies in the sector.

The analysis of the values of the CLCS practices showed that there is a variation between companies in these values. This difference can be explained by several factors, including the variation in accounting policies and procedures used to classify short-term liabilities, whether intentional or unintentional, and the differences in financial strategies followed by companies. However, the results show that the practice of reclassifying current liabilities is not a widespread phenomenon among industrial companies, indicating that there is an acceptable degree of consistency in the accounting treatment of these items.

The main hypothesis (H_0) suggests that the practice of (CS) significantly impacts the market value of industrial companies through financial statements. This highlights the importance of clear financial presentation in guiding investor decisions and market valuations. Improved financial classification enhances information clarity, increases market efficiency, and reduces information asymmetry, thus fostering investor confidence and lowering capital costs. It may also improve market liquidity by aiding in the accurate assessment of operational performance, attracting stable investments. Conversely, some companies might exploit classification to misrepresent financial indicators, leading to potential manipulation that distorts market value.

The first sub-hypothesis ($H1_0$) suggests that the practice of ICS affects the market value of industrial companies. It emphasizes the importance of accounting transparency in fostering market confidence, as a clear income statement allows investors to evaluate profitability and assess performance. This transparency minimizes information asymmetry and leads to accurate market valuations. However, some companies might manipulate financials to inflate profits or hide issues, temporarily boosting stock demand and market value. This poses long-term risks if discrepancies come to light, potentially resulting in price corrections and loss of investor trust.

The second sub-hypothesis ($H2_0$) indicates that CFCS has no impact on the market value of industrial companies. This suggests that investors may prioritize other financial indicators, like earnings or revenues, over operating cash flows. It could also imply that similar classification shifting policies among these companies limit the effectiveness of CS in influencing investor decisions.

The third sub-hypothesis ($H3_0$) indicates that BSCS impacts the market value of industrial companies, highlighting the financial market's sensitivity to how financial items are presented. This underscores the importance of transparency, as clear classifications enhance investors' understanding of a company's financial health and lead to more informed investment decisions, positively affecting market value. However, it may also reveal tactical accounting practices, where companies might manipulate classifications to mislead investors and distort the market's short-term valuation.

The regression findings show that there are statistically significant negative coefficients on ICS and BSCS, which is indicative of the fact that these types of classification manipulation influence market value negatively. The ICS coefficient affirms that an overvaluation in the market at the expense of overreporting the operations to raise the core earnings will eventually rectify itself in the market, as observed by McVay (2006) and Bansal et al. (2021). Conversely, the coefficient of CFCS was negligible, which means that investors and analysts might not focus much on the cash flow presentation in assessing firm performance, as also observed by Mulchandani et al. (2024). Such findings are consistent with previous literature that suggests that markets respond more to earnings and equity information as compared to cash flows (Ha & Thomas, 2020; Ibrahim et al., 2024).

The results of this research are consistent and in agreement with previous research findings on the shifting of classification. This dramatic impact of income classification change on market value coincides with McVay (2006) and Pan et al. (2019), who discovered that the misclassification of core expenses artificially inflates perceived profitability and causes temporary valuation increases. On the same note, the findings of BSCS favor Bansal (2023) and Keohane and Schap (2021), who highlight that the misclassification of liabilities in the financial statements discredits financial statements and results in market corrections once revealed. Conversely, this insignificance of the change of cash flow classification is consistent with the findings reported by Mulchandani et al. (2024), who identified the appearance of weak valuation effects of CFCS in the Egyptian context, and Ibrahim et al. (2024), who demonstrated the lack of a significant effect of shifts in cash flow classification. Additionally, the greater role of balance sheet misclassification in the present research than previous emphasis on the income effects (Bansal et al., 2021; Anagnostopoulou and Malikov, 2023) indicates that investors in capital-intensive industries might tend to pay more attention to debt and liability reporting as signs of long-term sustainability. Not only do these results align with previous literature, but they also demonstrate that the impact of classification practices can be even larger in emerging markets, where there is a low level of audit enforcement and the system of governance is highly fragile.

6. CONCLUSION

This research determined how CS (ICS, CFCS, and BSCS) impacts the market value of industrial companies in Jordan. The findings indicate that ICS and BSCS have a substantial effect on the valuation of firms, although CFCS does not have any quantifiable impact.

Theoretically, the results are an extension of the agency theory and provide insight into how managers as agents use informational asymmetry to recategorise expenses and liabilities to inflate perceived performance without changing the underlying fundamentals. This is an agency problem behavior that can be exhibited in publicly listed companies, where short-term market reactivity can be contrived in the long-term reputation.

Simultaneously, the findings add to the signaling theory by demonstrating that various categories of financial statements are associated with varying signal credibility levels. Investors seem to assign more importance to those signals reflecting income statements and balance sheets, as they seem to be stronger health signals as compared to those in the cash flow statement, which they discount. Such a ranking of signal relevance implies that not every type of change in a classification is equally effective, and that markets selectively display the signal that managers are trying to transmit.

To conclude, the study is relevant to the general body of literature examining the nature of earnings management because it helps elucidate the valuation effect caused by a transition in the classification within an emerging market

environment. It points to the necessity to implement stricter financial reporting standards and governance mechanisms that minimize the possibilities of manipulative presentation. To regulators and auditors, the results highlight the fact that expense and liability categories need to be examined more closely, and to the scholars, they create new opportunities to observe the evolution of the relative credibility of various financial statement indicators across industry and institutional settings.

Contributions to the earnings-management literature of this study include that ICS and BSCS are value-relevant to investors, but CFCS is not, which the Author documents in an emerging-market context, providing practitioners in the field, such as regulators, auditors, and analysts, with actionable information on how to enhance the quality of disclosures and market efficiency. However, the evidence has a number of constraints: it is limited to samples of Jordanian industrial firms across 2018–2023; the data is analyzed using secondary disclosures and model-based proxies in classifying shifts that might include measurement error, and unobserved firm characteristics may also partially contribute to the findings. The external validity of these results might be tested in future studies with multi-country panel tests, other CS tests, event-study designs of disclosure shocks, and governing moderating effects of governance and audit quality.

Based on the results obtained, the following recommendations for Jordanian industrial companies are proposed. Develop clear policies for financial disclosure, focusing on detailed cash flow sources and accurate revenue and expense classifications to build investor confidence and mitigate asymmetric information. Also, adopt a standard framework for financial statements to facilitate comparisons between companies and minimize accounting manipulation, thereby improving market efficiency. As well as enhance the role of audit committees and auditors in ensuring accurate classification of financial statements while applying stricter governance standards to reflect the true economic reality of the company.

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