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Do Institutional Investors Mitigate Costly Restructuring? Dynamic Evidence from the Globe

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Abstract

This research aims to comprehensively examine the impacts of various levels of the life cycle stages of firms (LCSF) on restructuring charges and to investigate the impact of institutional ownership on the correlation between LCSF and restructuring charges. This study employs panel data that is run using a two-step system GMM. The dataset covers the years 2000 to 2023 and consists of 7,570 observations of firm-year of non-utility and non-financial companies. The results show that the charges of restructuring have the propensity to rise (or fall) as a firm moves to either growth or maturity (or introduction or decline) stage. Also, under institutional ownership, a firm changing to growth or maturity (or introduction or decline) stage leads to a significant increase (or minor decrease) in restructuring charges. The information on the correlation between LCSF and restructuring charges will assist the investors in forecasting the alterations in the restructuring costs as firms cross the various stages of their life cycles. Moreover, the effects of institutional ownership on this relationship will be useful in informing investors on how to best invest in stocks. To the best of our knowledge, no previous study has investigated the effects of LCSF on restructuring charges and the moderating effect of institutional ownership in the relationship. This research paper is aimed at filling this gap and offering new information.

Keywords: Restructuring charges, firm life cycle stages, institutional ownership, large firms, and small firms.

1. Introduction

Restructuring is a vital process for corporations to maintain financial health, enhance efficiency, and adapt to market changes, particularly in developed economies where stable institutional frameworks amplify its benefits (Bhana, 2004; Choi & Han, 2013; D'Souza et al., 2007; Fung & Loveland, 2024; Jiang et al., 2019; Stojcic et al., 2013). Such circumstances are favorable to companies. Financial health makes the firms stable against the changes in the market- more efficiency leads to cost-reducing and more financial performance. The more emphasis on core business activities is made, the more value is produced. Withdrawing out of crisis helps troubled companies to avoid going bankrupt.

Further inversion in innovation helps in the creation of new processes, services, and products. Greater flexibility to changes in the market will guarantee the survival of the firms over a long period. The firms have an easy time acquiring capital due to the increased attraction to investors. To conclude, restructuring helps companies to be competitive because they respond to the changing demands of the dynamic business environment. Restructuring is essential because it would improve the economic welfare of firms (Dechow, 2004).

The areas of restructuring include financial, asset, operational, and managerial (Sudarsanam & Lai, 2001). Financial restructuring involves altering the firm's capital structure and/ or dividend policy. Specifically, distressed firms reduce their disbursement burdens through debt-related and equity-related actions. Debt-related actions include revising the debt-to-equity ratio, renegotiating debt maturity, and adjusting interest rates. Equity-related actions include the issuance of shares and a reduction in dividend payouts. Asset restructuring involves selling non-essential or loss-generating business segments. Through the sale of such segments, firms allocate the freed resources to value-generating uses. In operational restructuring, firms sell the excess resources to reduce costs and improve profitability. The rationale for this study stems from life cycle theory, which posits that firms' strategies and restructuring needs evolve across stages, motivating an examination of how these shifts influence charges in contexts like the US and UK.

Life cycle theory posits that firms' progress through various stages in their development (Mueller, 1972). These stages include introduction, growth, maturity, and decline. (Miller & Friesen, 1984) state that the environment, structure, decision-making approach, and strategy of firms change with life cycle stages (LCS). Likewise, (Ahmed et al., 2025; Hasan & Cheung, 2018) state that firms hold different levels of organizational capital across life cycle stages of firms (LCSF). Several studies also report the influence of LCSF on various firm-level factors. For instance, LCSF influences restructuring strategies, acquisition activity, capital structure, cost of debt, borrowing inclination, finance lease usage, cost of equity, earnings management practices, dividend policy, financial performance, innovation decisions, and risk-taking (Cadenovic et al., 2023; Cai et al., 2024; Chhillar & Lellapalli, 2022; Ghazali & Tanveer, 2024; Habib & Hasan, 2015; Hasan et al., 2015; Koh et al., 2015; Mbanyele, 2020; Owen & Yawson, 2010; Shahzad et al., 2022; Tian et al., 2015; Yazdanfar & Öhman, 2014). These findings suggest the potential influence of LCS conditions on firms' restructuring decisions. Specifically, firms in the introduction stage have a small size, high risk, a simple structure, centralized management, and a high cost of capital due to uncertainty regarding the business venture [24, 25]. So, there is less need for restructuring in the introduction stage. In the growth stage, the revenues of firms grow, which pushes firms to acquire additional capacity and capital. The responsibilities of managers increase. Moreover, firms in the growth stage have less centralization and a more complex structure (Liu et al., 2025; Olson & Terpstra, 1992). In this situation, firms can

restructure assets, capital, operations, and management to meet the demands of this stage. Compared to the introduction stage, the growth stage requires more restructuring actions. In the maturity stage, the sales growth slows down. Firms can restructure their financing to have optimal capital structure, restructure assets to enhance efficiency, and adjust operations to reduce costs and remain competitive. These conditions lead firms to more restructuring actions. In the decline stage, firms face losses due to declining revenues and profit opportunities. Moreover, the operating conditions get worse, and firms exhibit poor prospects for capital providers. At this stage, firms can restructure their capital to decrease debt obligations, divest unprofitable business segments to mitigate adverse income effects, sell surplus assets to meet cash needs, and reorganize operations and organizational structure to minimize costs. As the restructuring requirement varies with the conditions posed by LCSF, it is assumed that the magnitude of restructuring activities and the associated charges differ across LCSF. Figure 1 is used to support this assumption as it indicates the mean restructuring charges across LCSF. According to this figure, mean restructuring charges are lowest in the introduction stage, highest in the growth stage, and very high in the maturity stage, with moderate levels in the decline stage. Thus, the first question of this study is as follows:

- RQ1: What are the effects of life cycle stages of firms on restructuring charges?

Shareholders' wealth maximization is generally recognized as the primary goal of corporations. A principal-agent relationship exists between shareholders and corporate managers due to the delegation of decision-making authority from shareholders to managers (Petersen, 1993). In other words, managers make decisions on behalf of the shareholders. Managers are expected to make decisions that align with the interests of the shareholders. Although information asymmetry often motivates managers to make decisions that align with their personal goals rather than the interests of shareholders (Chen & Chen, 2017; Ward et al., 2019). This conflict of interest is referred to as an agency problem and is mitigated through effective corporate governance (Wang et al., 2021). Institutional ownership is a key component of corporate governance.

Theoretically, institutional investors are assumed to monitor the top managers of firms to keep the interests of owners and managers aligned (Carleton et al., 1998). The active involvement of institutional owners leads to adequate supervision of management, thereby protecting the interests of owners (Liu & Suzuki, 2024). When institutional investors play their role effectively, capital markets respond positively, as they anticipate an improvement in firm performance based on the assumption that corporate decisions are being made in the best interest of the owners (Striewe et al., 2013). However, when institutional investors pursue their own investment goals instead of playing the active monitoring role, it results in poor performance due to incompatibility between corporate decisions and owners' interests (Satt et al., 2021; Yang & Xiang, 2025). These findings compel us to ascertain the influence of institutional ownership on the LCSF-restructuring charges link. Owners of the corporations expect managers to earn and report high income in the annual reports.

Moreover, analysts' income forecasts serve as earnings targets for the managers. The contradictory effect of restructuring charges on current earnings and firm value makes restructuring decisions complex (Choi & Han, 2013; Dechow, 2004). Appropriate restructuring activities increase firm value but also result in a reduction of current-period income due to the incurrence of restructuring charges (Adut et al., 2003). Accounting standards require firms to record restructuring charges when they are incurred (Bhojraj et al., 2017). The incurrence of restructuring charges obstructs managers from meeting the earnings expectations of analysts and owners (Dechow, 2004). When managers assess that they would fail to achieve the earnings target by employing the proper practices, they manage earnings to meet the earnings forecast (Libby & Kinney, 2000; Moehrle, 2002). As managers are responsible for planning and controlling the restructuring program, they can adjust the restructuring level to meet their short-term goals. Past studies have reported that managers adjust restructuring activities and charges to manage earnings (Bens & Johnston, 2009; Bhojraj et al., 2017; Moehrle, 2002). In the absence of institutional investors, management's desire to meet analysts' income forecasts and owners' current-period earnings expectations may drive them to incur fewer restructuring charges by skipping necessary restructuring actions. However, in the presence of institutional investors, the active monitoring of restructuring activities by the investors can prevent managers from taking such value-diminishing actions. Therefore, we are interested in finding whether institutional owners actively engage with top managers to ensure that the restructuring requirements of LCS are being fulfilled. So, the second question of this study is as follows:

- RQ2: Does institutional ownership moderate the effect of life cycle stages of firms on restructuring charges?

To the best of our knowledge, no study has investigated the influence of LCSF on restructuring charges and the moderating effect of institutional ownership on the relationship between LCSF and restructuring charges. Thus, the current study aims to address this research gap, making it a novel contribution. The findings of this study will be beneficial for investors. The insight into the relationship between LCSF and restructuring charges will enable investors to predict the likely changes in restructuring charges resulting from the transition of firms in LCS. Moreover, understanding the effect of institutional ownership on the relationship between LCSF and restructuring charges will assist investors in identifying optimal stock investments. Following figure shows the restructuring charges across the firm life cycle stages:

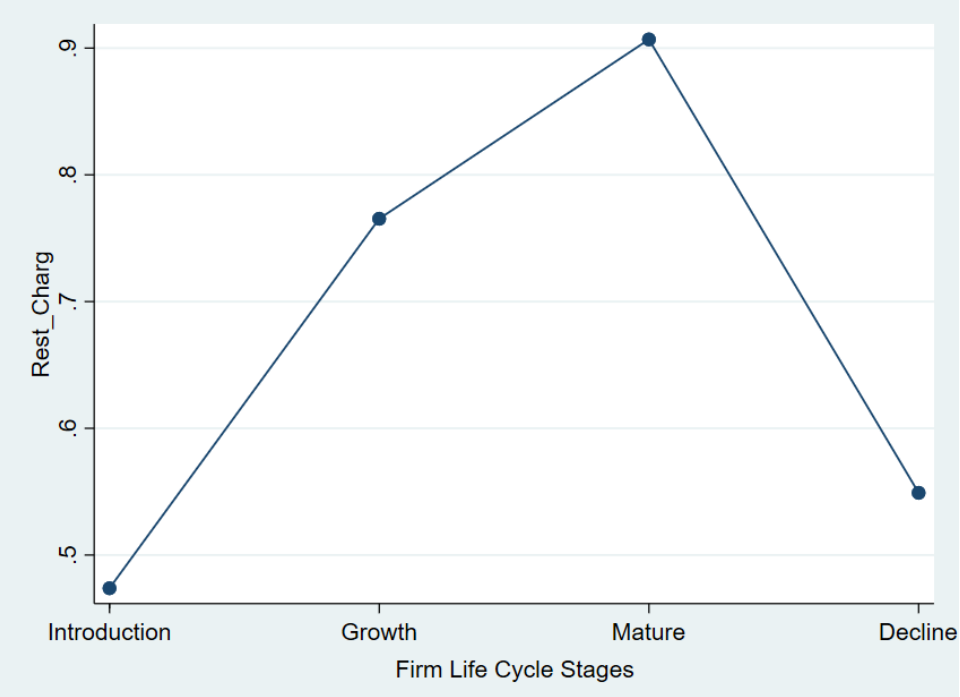

Figure 1: Restructuring charges across Firm Life Cycle Stages

Further, this paper is organized as follows: Section 2 reviews the literature, Section 3 details the methodology, Section 4 presents results and discussion, Section 5 concludes, followed by references.

2. Literature Review

2.1 Restructuring

The current literature suggests that restructuring is among the most controversial research areas. In restructuring, (Khurana & Lippincott, 2000) examined the relationship between the restructuring charges and the returns of stock during the restructuring period. According to the authors, the nature of the relationship among these variables is based on the earnings status of firms. In this study, a significant relationship between these variables was reported as being positive and insignificant between loss and profit-generating firms, respectively. The (Atiase et al., 2004) study explored the connection between restructuring charges and post-restructuring performance. The authors found a positive correlation between restructuring charges and earnings, which implies that high post-restructuring earnings are usually accompanied by high restructuring charges. Moreover, (Kam et al., 2008) also examined the market responses to the restructuring policies announced by the ailing companies. The authors noted that announcements of paid mergers and acquisitions, an

increase in leverage by restructuring of its debt, asset swaps, and intentional sales of its assets have been positively received on the market. There was, however, a negative response to the announcement of managerial restructuring. Another finding of this study is that there is a difference in market response based on the forms of ownership. Similarly, (Jaggi et al., 2008; Stoiber et al., 2025) examined how investors responded to the restructuring efforts of firms. Authors reported that the nature of the reaction depends on the perception of the investors on the outcome of the restructuring. Investors respond well when they are convinced that stipulated restructuring plans will enhance the performance of a firm. On the other side, they respond negatively. When, reorganization of activities does not have the prospects of performance improvement.

Choi & Han (2013) investigated the impact of restructuring on firm value. In this study, the authors focused on the firms' use of spin-ins as an internal restructuring action and noted the positive effect of restructuring on firm value. This finding indicates that restructuring creates value for shareholders. Moreover, (Stojcic et al., 2013) examined the impact of restructuring on the competitiveness of firms. Authors noted that restructuring activities improve input productivity and cost efficiency, which in turn, enhances competitiveness. (Ghosh & Dutta, 2014) studied the performance levels of restructured firms on a pre-merger and post-merger basis. This study focused on four performance parameters: market share, per-share earnings, personnel compensation as a percentage of after-tax earnings, and human capital return on investment (HCRI). The authors noted a significant change in HCRI only. (Ushijima & Iriyama, 2015) probed the roles of sell-off and closure in firm restructuring. Authors state that a sell-off plays a financial role as firms raise funds for their remaining segments by selling assets. However, closure plays an operational role as firms use it to enhance efficiency by either combining various operating units or terminating inefficient operations. (Nishihara & Shibata, 2016) studied the decision-making of shareholders of distressed firms. Authors state that shareholders of distressed firms face two choices: either to go for direct liquidation or to restructure their existing debt level. Shareholders prefer debt restructuring over complete liquidation when it is possible for their firms to defer the sale of its majority of assets; the firm's running, financing, and renegotiating cost is lower; firm's debt carries high coupon rate and coupon reduction through renegotiation is possible; and firm has nearly steady cash flows. Moreover, (Kim & Park, 2016) studied the association between financing sources and restructuring. For enhancing restructuring activities, private bank loans were identified as a superior source among all financing options. Foreign bank loans were considered the second-best source, based on their impact on the restructuring process. Authors also state that equity does not work better than debt in enhancing restructuring activities.

Elsiefy & AbdElaal (2019) investigated the influence of debt restructuring via sale-leaseback assets on firm value. Authors state that the sale-leaseback of assets enables firms to amend their financial position. However, this strategy erodes firm value. (Kim et al.,

2019) examined the association between debt restructuring and follow-on equity issuance. Authors state that financial distress prompts firms to issue new equity and utilize the proceeds to restructure their debt. Moreover, firms often replace debt with equity by directly issuing shares to creditors. Also, such restructuring often changes corporate control. Additionally, (Jiang et al., 2019) investigated the impact of debt restructuring on the firm's investment. Authors noted no significant improvement in investment as a result of debt restructuring. Authors also observed that the effects of debt restructuring on investment vary from firm to firm, based on characteristics such as the amount and mode of restructuring payments, the nature of the industry, the characteristics of debt re-arbitration, and property rights. Precisely, debt restructuring lessens overinvestment when a firm is state-owned, belongs to an industry with surplus capacity, and repays debt using its assets. (Jiang et al., 2019) studied the debt restructuring by firms facing debt overhang. Authors state that firms continue to manage their debt through either debt-for-equity or equity-for-debt exchanges. This management continues till firms attain the investment trigger point. When this point is reached, firms redeem their entire old debt and borrow new debt to support their investments to some extent.

Furthermore, (Halford & Li, 2020) investigated the influence of political linkages on debt restructuring among financially distressed firms. Authors support the notion that creditors extend debt restructuring-related favors to firms with political connections. Specifically, this study suggests that the political associations of directors and executives of distressed firms facilitate their avoidance of bankruptcy filings and recovery from distress through out-of-court arrangements. Moreover, (Wan et al., 2023) studied the approach of directors towards debt restructuring. Authors observed that directors of some firms restructure debt at a later stage of financial distress. This delay reduces the likelihood that firms will emerge from the restructuring successfully. However, early restructuring can be promoted through aptly incentivizing directors. (Xu et al., 2023) investigated the influence of goodwill on firms' restructuring decisions. This study documents that the probability of restructuring via disposing of subsidiaries increases with an increase in the amount of goodwill. Moreover, the pressure to recognize goodwill impairment also increases the likelihood of a subsidiary's disposal.

2.2 Firm Life Cycle Stages

Various studies investigated the influence of life cycle stages on firm-level factors. (Habib & Hasan, 2015) examined the association between LCS and the risk-taking propensity of firms. The authors noted different risk-taking tendencies across LCSF (Min et al., 2025). This study suggests that firms take on more risk during the introduction and decline stages, and lower risk during the growth and maturity stages. (Hasan et al., 2017) investigated the relationship between LCSF and firms' propensity to engage in corporate tax evasion practices. The study confirms that the propensity to evade practice of corporate tax is dependent on LCSF. The authors noted that in the introduction and decline stages, the firms had a greater tendency towards tax evasion and a lesser tendency in the growth and maturity

stages. The impact of LCSF on leverage was studied (Mbanyele, 2020). The nonlinear correlation between LCSF and leverage was detected by the authors. It means that companies will borrow less in the first years of their existence. They, however, augment their borrowing with age. The researchers (Kakhbod et al., 2025; Rehman et al., 2021) examined the connection between LCSF and the cash levels of firms. According to authors, there are varying levels of cash maintained by firms through LCSF. Precisely, the firms increase their cash levels when they enter the growth stage. In growth stage, firms have greatest amounts of cash to fulfill their investment requirements. Firms also begin to reduce their cash holdings in a successive manner as they pass through the expansion phase.

Krishnan et al. (2020) examined the association between LCSF and the quality of financial reporting. Specifically, this study considered the quality of matching revenues and expenses across LCSF. Authors state that the matching quality varies with LCSF. Lower matching quality was observed in the introduction, growth, and decline stages (Ghazali et al., 2025). Moreover, higher quality was noted in the maturity stage. Additionally, (Almeida & Kale, 2024) probed the association between LCSF and accrual quality. Authors state that accrual quality changes with LCSF in an inverted U-form pattern. Firms exhibit lower accrual quality during the introduction and decline stages, and higher quality during the growth and maturity stages. (Chhillar & Lellapalli, 2022) examined the influence of three stages of the life cycle on earnings management practices. Authors observed less earnings management in the maturity stage and more earnings management in the decline stage. Precisely, firms in the decline stage make downward adjustments in earnings to obtain better offers in debt renegotiation. On the other hand, this study did not observe a specific pattern of earnings management in the growth phase, implying that firms are not dependent on earnings management during this stage. Additionally, (Cadenovic et al., 2023) questioned the influence of LCSF on dividend policy. The authors state that dividend payout varies with LCSF. Specifically, young firms tend to pay lower dividends, whereas mature firms tend to pay higher dividends. Moreover, (Ghazali & Tanveer, 2024) examined the influence of LCSF on the finance lease usage of firms. Authors found an inverted U-shaped association between LCSF and finance lease usage, indicating that firms increase their use of finance leases in the growth and maturity stages, and decrease their use in the introduction and decline stages.

2.3 Firm Life Cycle Stages and Restructuring

Koh et al. (2015) examined the influence of LCSF on the restructuring choices of financially distressed firms. This study states that the firm's selection of restructuring strategies depends upon LCSF. Specifically, firms select personnel reduction strategies in the earlier stages. Moreover, firms use an asset restructuring strategy in the maturity stage. Additionally, authors claim that the execution of all restructuring strategies does not guarantee recovery from financial distress. Only dividend reduction and investment reduction enhance the chances of recovery. Comparing Koh et al. (2015) on stage-specific

strategies, contrasting passive investor scenarios in recent studies like Bankruptcy Prediction, Financial Distress and Corporate Life Cycle, highlight distress variations, supporting H1 that LCSF influences charges via unique requirements. As this study highlights the effect of LCSF on restructuring choices, it is assumed that LCSF can also affect restructuring charges. As all LCSs have unique conditions and restructuring requirements, they can influence restructuring charges. The hypothesis formulated in this context is as follows:

- H1: Life cycle stages of firms influence restructuring charges.

2.4 Institutional Ownership

Existing literature shows that various studies have attempted to recognize the consequences of institutional ownership. (Striewe et al., 2013) examined the effect of institutional ownership on the performance of firms. Authors state that performance improves with an increase in institutional ownership. The activism of institutional investors results in a lower cost of capital and better access to financing, which in turn leads to improved performance (Dong et al., 2025). Likewise, (Jabin, 2025; Satt et al., 2021) also studied the institutional ownership-performance link. However, this study suggests that institutional ownership hurts performance. This suggests that, rather than playing an active monitoring role, institutional investors prioritize maximizing benefits from their investment portfolios.

Siew et al. (2016) studied the impact of institutional ownership on information asymmetry. Authors state that information asymmetry decreases with an increase in institutional ownership. Jong and Ho (2018) examined the influence of ownership structure on the executive remuneration of family firms. This study reports a significant positive relationship between total family ownership and remuneration. Moreover, it presents no evidence regarding the significant influence of domestic and foreign institutional ownership on executive compensation. Additionally, authors observed that institutional investors are often unsuccessful in preventing controlling family stockholders from expropriating minority stockholders through executive remuneration. This study pinpoints the presence of the Type-II agency problem and proposes that institutional investors can negatively influence executive remuneration if a non-family director becomes the CEO.

Oikonomou et al. (2019) examined the link between short-term and long-term institutional ownership with corporate social performance (CSP). This study reports the negative influence of short-term institutional ownership on CSP and the positive influence of long-term institutional ownership on CSP. These findings suggest that institutional investors with a long-term investment horizon tend to seek higher CSP. In contrast, those with a short-term investment horizon are less inclined to do so. (Potharla et al., 2021) Investigated the influence of institutional ownership on earnings management. The authors report a negative association between these variables. This implies that institutional investors play an active and effective monitoring role in restraining earnings management practices, which in turn, enhances the quality of financial reporting. (Wang et al., 2021) probed the influence of institutional ownership on firm value over various stages of the life cycle. It

is stated that both domestic and foreign institutional ownership have a positive impact on firm value across all stages of the life cycle. (Minh Ha et al., 2022) examined the effect of institutional ownership on the cost of debt. Authors state that institutional ownership has an insignificant effect on the cost of debt, implying that lenders do not assess the creditworthiness of firms based on their ownership structure. (Su, 2024) probed the association between equity ownership of mutual institutional investors and the cost of equity. The authors state that the cost of equity decreases with an increase in equity ownership by mutual institutional investors. The synergistic benefits of governance and the threat of investors' exit are the primary reasons behind the decrease in equity cost. (Liu & Suzuki, 2024) examined the effect of institutional ownership on stock liquidity. This study reports a non-linear U-shaped association between institutional ownership and stock liquidity.

2.5 Institutional Ownership and LCSF-Restructuring Charges Link

Park & Kim (2008) probed the effect of corporate governance and regulatory changes on restructuring. This study suggests that regulatory changes prompt firms to undertake restructuring actions, including asset reduction and downsizing. Moreover, institutional investors also push firms to restructure via downsizing. Additionally, (Kang et al., 2010) examined the influence of institutional ownership and manager-owner motives on the restructuring decisions during the periods of economic shock. Authors report that during economic shocks, firms frequently take cash-realizing restructuring actions to address their liquidity issues. Moreover, ownership of firms by unaffiliated financial institutions results in a higher level of restructuring activities. Considering the effect of institutional ownership on restructuring, it is assumed that institutional ownership can also influence the link between LCSF and restructuring charges. Ideally, institutional investors are expected to play an effective monitoring role to ensure that corporations' decisions are taken in the best interest of their owners. Moreover, analysts and owners expect managers to meet their earnings forecasts. The contrary effects of restructuring charges on current earnings and firm value make the restructuring decision complex (Choi & Han, 2013; Dechow, 2004). Meeting LCS restructuring requirements increases firm value but reduces current-period income due to the incurrence of restructuring charges (Adut et al., 2003). As accounting standards require firms to record restructuring charges upon actual incurrence (Bhojraj et al., 2017), the recognition of restructuring charges reduces current-period income, hindering managers from meeting the earnings expectations of analysts and owners (Dechow, 2004). When managers assess that they would fail to achieve the earnings target by employing the proper practices, they manage earnings to meet the earnings forecast (Libby & Kinney, 2000; Moehrle, 2002). They disregard the actual restructuring requirements and incur the desired restructuring charges by adjusting the restructuring level (Bens & Johnston, 2009; Bhojraj et al., 2017; Forcadell et al., 2025; Moehrle, 2002). In the absence of institutional investors, management's desire to meet earnings forecasts can drive

them to incur fewer restructuring charges by skipping necessary restructuring actions. However, in the presence of institutional investors, the active monitoring and control of restructuring activities by the investors can prevent managers from taking such value-diminishing actions. The hypothesis formulated in this context is as follows:

- H2: Institutional ownership moderates the relationship between LCSF and restructuring charges.

3. Methodology

3.1 Data and Sample Selection

The primary objective of this study is to investigate the impact of LCSF on restructuring charges. Moreover, to investigate how institutional ownership moderates the link between LCSF restructuring charges. The panel data approach is used to investigate the described effects. The firm-level data for non-utility and non-financial entities are obtained from S&P Capital IQ Pro for the period 2000-2023. The sample consists of 7,570 firm-year observations of non-utility and non-financial entities from 14 countries listed in Table A of the Appendix. The selection of firms from only 14 developed countries is justified by data availability in S&P Capital IQ Pro, ensuring comparability in governance standards and robustness across diverse institutional contexts like North America and Europe.

3.2 Research Model

As panel data regression facilitates estimation of firm-specific and time-varying effects, the econometric model used in this study is based on this form of regression. The models used to examine the influence of LCSF on restructuring charges and the moderating effect of institutional ownership on the LCSF-restructuring charges link are as follows:

$$RC_{it} = \beta_0 + \beta_1 Introduction_{it} + \beta_2 Growth_{it} + \beta_3 Maturity_{it} + \beta_4 Decline_{it} + \beta_5 SIZE_{it} + \beta_6 DER_{it} + \beta_7 DTCR_{it} + \beta_8 LFCF_{it} + \sum \eta_j IND_j + \sum \delta_j YEAR + \varepsilon_{it} \quad (1)$$

$$RC_{it} = \beta_0 + \beta_1 Introduction_{it} + \beta_2 Growth_{it} + \beta_3 Maturity_{it} + \beta_4 Decline_{it} + \beta_5 IO_{it} + \beta_6 SIZE_{it} + \beta_7 DER_{it} + \beta_8 DTCR_{it} + \beta_9 LFCF_{it} + \sum \eta_j IND_j + \sum \delta_j YEAR + \varepsilon_{it} \quad (2)$$

$$RC_{it} = \beta_0 + \beta_1 Introduction_{it} + \beta_2 Growth_{it} + \beta_3 Maturity_{it} + \beta_4 Decline_{it} + \beta_5 IO_{it} + \beta_6 Introduction_{it}\ x\ IO_{it} + \beta_7 Growth_{it}\ x\ IO_{it} + \beta_8 Maturity_{it}\ x\ IO_{it} + \beta_9 Decline_{it}\ x\ IO_{it} + \beta_{10} SIZE_{it} + \beta_{11} DER_{it} + \beta_{12} DTCR_{it} + \beta_{13} LFCF_{it} + \sum \eta_j IND_j + \sum \delta_j YEAR + \varepsilon_{it} \quad (3)$$

In models 1, 2, and 3, RC represents restructuring charges and is the dependent variable of this study. LCSF is the independent variable of the current study. Introduction, growth, maturity, and decline represent the stages of the life cycle. IO represents institutional ownership and is used as a moderating variable. To control the effects of some additional factors on restructuring charges, a few more variables are added to the model as control variables. These variables include size, debt-to-equity ratio (DER), debt-to-total-capital ratio (DTCR), and levered free cash flow (LFCF). Industry fixed effects ($\sum \eta_j IND_j$) are added in the model to control the industry-specific elements that may affect RC. Also, year fixed effects ($\sum \delta_j YEAR$) are added in the model to account for time-specific macroeconomic factors. Lastly, ε_{it} denotes the error term and reflects all other unobserved factors that may affect RC. Due to large values of RC, it is scaled by total assets. LCSF are recognized by employing the following criteria of (Dickinson, 2011):

Stage / Cash Flow	Operating Cash Flow	Investing Cash Flow	Financing Cash Flow
Introduction	–	–	+
Growth	+	–	+
Maturity	+	–	–
Shakeout	+ or –	+ or –	+ or –
Decline	–	+	+ or –

Dummy variables are used to represent each stage of life cycle. Out of five stages, the shakeout stage is excluded as it serves as a reference group. Moreover, it is excluded to evade the dummy variables trap. To represent a specific stage, a value of either 0 or 1 is assigned to a dummy variable. For instance, the dummy variable for the introduction stage equals 1 if a firm is present in this stage and 0 otherwise. Similarly, the dummy variable of the growth stage is equal to 1 if a firm exists in this stage or 0 otherwise. Moreover, the dummy variable of maturity stage is equal to 1 if a firm is present in this stage or 0 otherwise. Lastly, the dummy variable for the decline stage equals 1 if a firm is in this stage, and 0 otherwise. Institutional ownership is measured as the percentage of shares owned by institutional investors. Size is measured by taking the natural log of the total assets.

3.3 Data Analysis Techniques

A two-step system GMM is applied to identify the influence of LCSF on restructuring charges and the moderating effect of institutional ownership on the relationship between LCSF and restructuring charges. Two-step system GMM is strongly justified for our dynamic panel dataset as it effectively handles endogeneity and unobserved heterogeneity, unlike OLS which suffers from omitted variable bias, which overlooks persistence in restructuring processes. Statistically, this estimator is appropriate for handling potential

endogeneity and unobserved firm-specific heterogeneity. We cite relevant literature supporting its use in corporate governance research. Theoretically, the dynamic specification captures the persistence of restructuring cost effects over time, which aligns with the multi-year adjustment processes described in agency theory and restructuring literature. Diagnostic tests (Hansen J-statistic) are also reported to confirm validity of instrumental variables. Moreover, the robustness of the results is tested twice. In the first test, the full sample is divided into two samples, i.e., small firms and large firms. Then, the two-step system GMM is applied to both samples to determine the robustness of the results. In the second test, the full sample is again divided into two subgroups: low ROA firms and high ROA firms. The two-step system GMM is again applied to both samples to ratify the robustness of the results. Lastly, robust standard errors are considered to ensure the absence of heteroskedasticity and autocorrelation in the data, while confirming that the coefficient estimates are statistically valid and reliable.

4. Results and Discussion

4.1 Descriptive Statistics

The descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics

Variable	N	Mean	SD	25th Percentile	50th Percentile	75th Percentile
RC	7570	0.867	2.573	0.026	0.140	0.594
Introduction	7570	0.052	0.222	0	0	0
Growth	7570	0.223	0.416	0	0	0
Maturity	7570	0.592	0.491	0	1	1
Decline	7570	0.019	0.138	0	0	0
IO	7570	20.050	14.977	7.682	17.772	29.362
Size	7570	1.201	0.712	0.756	1.2146	1.664
DER	7570	-0.002	0.001	-0.002	-0.002	-0.002
DTCR	7570	-0.005	0.002	-0.007	-0.006	-0.004
LFCF	7570	-0.001	0.001	-0.001	-0.0012	-0.001

In table 1, the mean value of restructuring charges is 0.867. As restructuring charges are scaled by total assets, mean value indicates that firms incur significant restructuring charges on average. The mean value of institutional ownership is 20.050, which indicates that institutional investors own almost 20% stock of firms on average.

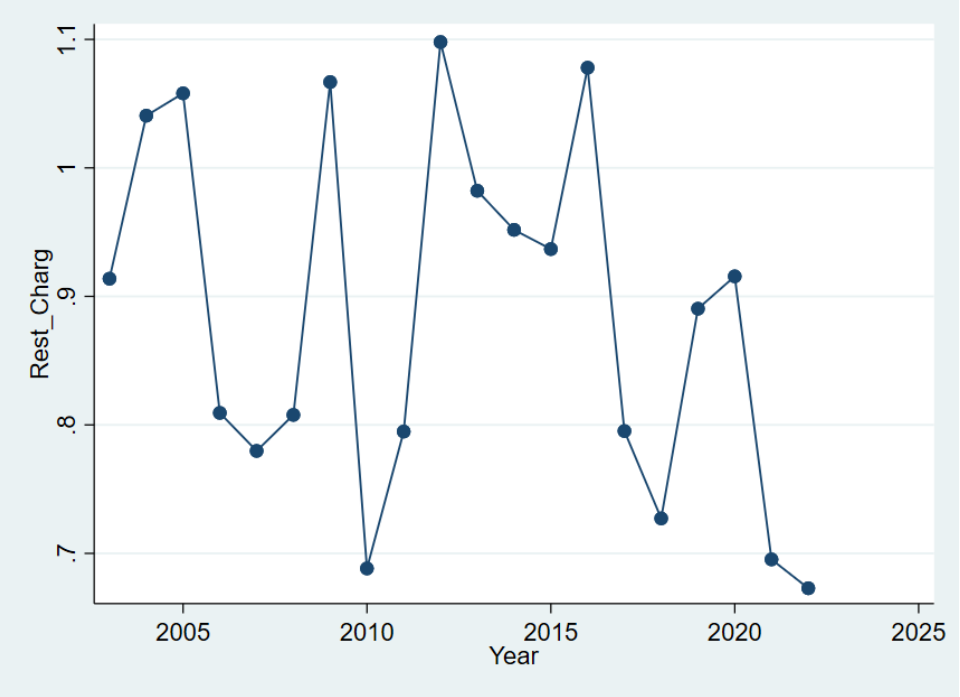

Figure 2: Mean Restructuring Charges for the Period 2000-2023

Figure 2 shows the mean restructuring charges during the period 2000 to 2023.

4.2 Pairwise Correlation

The pairwise correlations between the variables are shown in Table 2.

Table 2: Pairwise Correlations

Variable	Intro	Grow	Matur	Decline	IO	Size	DER	DTCR	LFCF
Introduction	1								
Growth	-0.125	1							
Mature	-0.282	-0.645	1						
Decline	-0.033	-0.075	-0.169	1					
IO	-0.248	0.011	0.162	-0.091	1				
Size	0.011	-0.007	0.002	-0.032	0.015	1			
DER	0.028	0.01	-0.022	0.018	0.021	-0.003	1		
DTCR	-0.028	0.096	-0.053	-0.014	0.253	0.059	0.123	1	
LFCF	-0.066	-0.062	0.062	-0.03	0.341	0.005	-0.006	0.04	1

4.3 Regression Results

The regression results of two-step system GMM are reported in Table 3. The calculations of marginal effect of institutional ownership on restructuring charges across LCSF are reported in Table 4.

Table 3: Two-step System GMM (Dependent Variable: RC)

Variables	Model 1	Model 2	Model 3
Lag RC	-0.209***	-0.193***	-0.191***
	[0.001]	[0.001]	[0.001]
IO		0.053***	0.038***
		[0.002]	[0.003]
Introduction	-1.035***	-2.058***	1.812***
	[0.090]	[0.095]	[0.284]
Growth	0.44]8***	0.911***	-0.120
	[0.029]	[0.030]	[0.076]
Maturity	1.351***	1.681***	0.770***
	[0.020]	[0.021]	[0.067]
Decline	-2.226***	-1.012***	1.589***
	[0.065]	[0.071]	[0.185]
Introduction × IO			-0.145***
			[0.014]
Growth × IO			0.034***
			[0.004]
Maturity × IO			0.036***
			[0.003]
Decline × IO			-0.200***
			[0.010]
Size	-2.042***	-2.115***	-2.225***
	[0.055]	[0.058]	[0.063]
DER	-1350.904***	-1482.889***	-1663.341***
	[77.974]	[84.291]	[89.398]
DTCR	862.256***	735.144***	755.273***
	[11.143]	[11.512]	[13.734]
LFCF	-161.437***	-140.696***	-138.214***
	[1.988]	[1.898]	[2.010]
Constant	2.641***	0.284	0.372*
	[0.188]	[0.199]	[0.223]
Observations	7570	7570	7570
Number of Firms	1412	1412	1412
Hansen J-stat	251	249	249
AR(1) p-value	0.014	0.013	0.008
AR(2) p-value	0.404	0.424	0.487
Hansen p-value	0.235	0.370	0.213

Standard errors in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

Table 4: Marginal Effects of Institutional Ownership on Restructuring Charges by LCSF

LCS	Coefficient of IO	Coefficient of LCS* IO	Marginal Coefficient of IO
Introduction	0.038	−0.145	0.038 + (−0.145)= − 0.107
Growth	0.038	0.034	0.038 + 0.034= + 0.072
Maturity	0.038	0.036	0.038 + 0.036= + 0.074
Decline	0.038	−0.200	0.038 + (−0.200)= − 0.162

In Table 3, the results of Model 1 indicate a negative association between the introduction stage and restructuring charges, suggesting that restructuring charges decrease as a firm enters the introduction stage. The results further indicate a positive association between the growth stage and restructuring charges, suggesting that restructuring charges increase as a firm transitions into the growth stage. Moreover, the results also show a positive association between the maturity stage and restructuring charges, indicating that restructuring charges increase as a firm reaches the maturity stage. Results further indicate a negative association between the decline stages and restructuring charges, suggesting that restructuring charges decrease as a firm enters the decline stage. The statistical significance of these associations proves that LCSF influences restructuring charges. Thus, we accept hypothesis 1. Literature documents that firms' circumstances change with LCSF, which results in different restructuring requirements. The diversity of restructuring requirements across LCSF results in different restructuring charges. So, LCSF influences restructuring charges as well as the restructuring strategies (Koh et al., 2015).

The results of Model 2 show a significant positive relationship between institutional ownership and restructuring charges, indicating that restructuring charges increase with an increase in institutional ownership. In other words, institutional investors pressure top managers to meet the restructuring requirements of LCS, leading to the incurring of high restructuring charges. The results of model 2 also show significant negative associations between restructuring charges and the introduction and decline stages. It also shows significant positive associations of restructuring charges with growth and maturity stages. The observed nature of the influence of LCSF on restructuring charges is the same for both models 1 and 2.

The results of Model 3 reveal significant interaction terms between institutional ownership and each stage of the life cycle. Table 4 shows negative marginal coefficients for both the introduction and decline stages. This suggests that institutional ownership mitigates the adverse effects of the introduction and decline stages on restructuring charges. In other words, the existence of institutional ownership results in a smaller decrease in restructuring charges when a firm enters either the introduction or the decline stage. Moreover, Table 4 shows positive marginal coefficients for both the growth and maturity stages. This suggests that institutional ownership enhances the positive impact of the growth and maturity stage on restructuring charges. In other words, the presence of institutional ownership results in a significant increase in restructuring charges when a firm moves into either the growth or

the maturity stage. These results demonstrate that institutional ownership moderates the link between LCSF-restructuring charges. Thus, we accept hypothesis 2. When institutional investors do not own firms, the management's desire to report good current-period earnings and/or meet analysts' earnings forecast fearlessly drives them to incur less than the required restructuring charges by skipping necessary restructuring actions. However, when owned by the institutions, these investors prohibit managers from such value-diminishing actions by actively monitoring and controlling the restructuring activities.

The positive marginal coefficients for growth and maturity clarify that institutional ownership enhances charge increases by amplifying monitoring, aligning with agency theory and recent 2025 findings on life-cycle performance; in country contexts, this is more pronounced in US firms due to liquid markets versus Japan's relational systems.

4.4 Robustness Tests

Table 5 reports the results of robustness tests, and Table 6 reports the related calculations of the marginal effect of institutional ownership on restructuring charges across LCSF.

Table 5: Robustness Tests: Small vs Large Firms, Low ROA vs High ROA Firms

Variables	Small Firms	Large Firms	Low ROA Firms	High ROA Firms
RC	0.003**	-0.182***	-0.258***	-0.149***
	[0.001]	[0.001]	[0.001]	[0.001]
IO	0.002***	0.066***	0.029***	0.092***
	[0.000]	[0.003]	[0.001]	[0.003]
Introduction	-0.241***	1.513***	-3.644***	9.086***
	[0.006]	[0.235]	[0.052]	[1.964]
Growth	0.065***	0.637***	0.408***	0.616***
	[0.005]	[0.065]	[0.021]	[0.089]
Maturity	-0.013***	1.290***	0.816***	2.233***
	[0.004]	[0.058]	[0.018]	[0.083]
Decline	-0.198***	1.923***	-2.217***	17.346***
	[0.007]	[0.121]	[0.039]	[0.712]
Introduction × IO	0.007***	-0.189***	0.035***	-0.457***
	[0.000]	[0.012]	[0.002]	[0.111]
Growth × IO	-0.002***	0.020***	0.020***	-0.009**
	[0.000]	[0.003]	[0.001]	[0.004]
Maturity × IO	-0.002***	0.024***	0.035***	-0.007**
	[0.000]	[0.002]	[0.001]	[0.004]
Decline × IO	0.001***	-0.153***	0.112***	-0.752***
	[0.000]	[0.006]	[0.003]	[0.029]
Size	-0.123***	-3.778***	-2.733***	-2.311***
	[0.006]	[0.086]	[0.035]	[0.064]
DER	70.072***	-1583.389***	-419.959***	-946.219***
	[1.424]	[69.757]	[36.866]	[44.589]
DTCR	-48.681***	562.442***	-127.412***	530.707***
	[0.294]	[10.645]	[4.007]	[9.907]
LFCF	-76.544***	-132.017***	-136.691***	-391.311***
	[4.577]	[1.722]	[0.827]	[3.220]
Constant	-0.248***	1.717***	-0.948***	-0.763***
	[0.008]	[0.209]	[0.116]	[0.150]
Observations	3415	4155	3043	4527
No. of Firms	936.000	596.000	1002.000	899.000
Hansen J-stat	249.000	249.000	249.000	249.000
AR(1) p-value	0.000	0.015	0.000	0.040
AR(2) p-value	0.872	0.413	0.664	0.320
Hansen p-value	0.589	0.440	0.205	0.180

Standard errors in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

Table 6: Marginal Effects of Institutional Ownership on Restructuring Charges by LCSF

	Small Firms	Large Firms	Low ROA Firms	High ROA Firms
LCS	**Marginal Coefficient of IO**	**Marginal Coefficient of IO**	**Marginal Coefficient of IO**	**Marginal Coefficient of IO**
Intro.	0.002 + 0.007 = + 0.009	0.066 + (−0.189) = − 0.123	0.029 + 0.035 = +0.064	0.092 + (−0.457) = −0.365
Growth	0.002 + (−0.002) = 0	0.066 + 0.020 = + 0.086	0.029 + 0.020 = +0.049	0.092 + (−0.009) = +0.083
Maturity	0.002 + (−0.002) = 0	0.066 + 0.024 = + 0.090	0.029 + 0.035 = +0.064	0.092 + (−0.007) = +0.085
Decline	0.002 + 0.001 = + 0.003	0.066 + (−0.153) = − 0.087	0.029 + 0.112 = +0.141	0.092 + (−0.752) = −0.660

Table 5 reports the results of the first robustness test. For both samples of small and large firms, the coefficients of all interaction terms are statistically significant. Moreover, for large firms, Table 6 shows negative marginal coefficients for the introduction and decline stages, and positive marginal coefficients for the growth and maturity stages. For large firms, the presence of institutional ownership results in a slight decrease in restructuring charges when a firm enters either the introduction or decline stage, and a significant increase in restructuring charges when a firm enters either the growth or maturity stage. These results are consistent with those of the full sample reported earlier. However, in the case of small firms, Table 6 shows positive marginal coefficients for the introduction and decline stages, and zero coefficients for the growth and maturity stages. The results of small-sized firms differ from those of large-sized firms because small-sized firms have a relatively small asset base, capital base, and organizational structure compared to the latter, which decreases the magnitude of restructuring requirements and the associated costs. This reduces managers' concerns about the current-period income effects of restructuring charges. However, in the case of large firms, a bigger asset base, capital base, and organizational structure increase the magnitude of restructuring requirements and the associated costs, which makes managers more concerned about the current period income effects of restructuring charges.

Table 5 also reports the results of the second robustness test. For both samples of low-ROA and high-ROA firms, the coefficients of all interaction terms are statistically significant. Moreover, for high ROA firms, Table 6 shows negative marginal coefficients for introduction and decline stages, and positive marginal coefficients for growth and maturity stages. For high-ROA firms, the presence of institutional ownership results in a slight decrease in restructuring charges when a firm enters either the introduction or decline stage, and a significant increase in restructuring charges when a firm enters either the growth or

maturity stage. These results are consistent with those of the full sample reported earlier. However, in the case of low ROA firms, Table 6 shows positive marginal coefficients for all four stages of the life cycle. The results of low-ROA firms differ from those of high-ROA firms due to the consequences of their differing profitability statuses. In the case of low ROA firms, owners and analysts expect smaller future earnings. This relieves managers from the pressure of meeting challenging earnings targets and reduces the need for restructuring-level adjustments. Conversely, owners and analysts expect significant future earnings from firms with high ROA. These earnings targets put more pressure on managers and consequently increase the need for restructuring level adjustments.

For large/high-ROA firms, negative marginal in decline stages mitigate decreases logically through stronger governance, supporting life cycle theory and contrasting smaller firms' results per global distress trends.

5. Discussion of Findings

This study offers valuable insights into the impact of firm life cycle stages on restructuring charges and the moderating effect of institutional ownership on the relationship between LCSF and restructuring charges. Results show that restructuring charges decrease when a firm moves into either the introduction or the decline stage. On the contrary, restructuring charges increase when a firm enters either the growth or the maturity stage. The differences in the stage-specific restructuring requirements and the corresponding restructuring actions are the possible reasons behind the variation in restructuring charges across LCSF. Results further show that institutional ownership moderates the influence of LCSF on restructuring charges. Due to institutional ownership, restructuring charges decrease with a relatively smaller magnitude when a firm enters either the introduction or the decline stage. However, restructuring charges increase to a relatively larger magnitude when a firm transitions into either the growth or maturity stage. This diversity is the result of the active monitoring and controlling of restructuring activities by the institutional investors. In other words, institutional investors actively engage with managers to ensure the fulfillment of stage-specific restructuring requirements. Managers fear that meeting restructuring requirements will negatively affect short-term earnings due to the incurrence of high restructuring charges. This fear prompts them to skip certain restructuring activities in LCSF, resulting in a greater decrease in restructuring charges when firms enter either the introduction or decline stage, and a lesser increase in restructuring charges when firms enter either the growth or maturity stage. This approach improves short-term earnings, but at the expense of future favorable outcomes from appropriate restructuring. However, the institutional owners of corporations strive for the favorable effects of restructuring by barring managers from evading necessary restructuring activities. Thus, the active engagement of institutional investors with managers regarding restructuring activities mitigates the agency problem by shaping the restructuring decisions in the interest of the owners.

To balance LCSF and institutional ownership for controlling restructuring costs, firms should target >20% ownership in growth/maturity stages, as supported by recent efficiency

studies as supported by recent efficiency studies in the 2025. This aligns with Table 4's marginal effects, where positive coefficients in mature stages contrast lower charges in US market-driven contexts vs. European labor-regulated ones.

6. Conclusion

The curiosity about the influence of firm life cycle stages on the restructuring charges and the effect of institutional ownership on the relationship of specified variables motivated us to study this unexplored phenomenon. The results reveal a negative influence of the introduction and decline stages on the restructuring charges, and a positive influence of the growth and maturity stages on the restructuring charges. This finding suggests that restructuring charges increase when a firm enters either the growth or maturity stage, and decrease when a firm transitions into either the introduction or decline stage. Results also confirm the moderating effect of institutional ownership on the relationship between life cycle stages and restructuring charges. Specifically, institutional ownership is associated with a larger increase in restructuring charges when a firm transitions into either the growth or maturity stage, or a smaller decrease in restructuring charges when a firm enters either the introduction or decline stage. This finding suggests that active engagement between institutional investors and managers regarding restructuring activities leads to the fulfillment of stage-specific restructuring requirements.

The findings of the present study are helpful for investors. The insight into the relationship between LCSF and restructuring charges will enable investors to predict changes in restructuring charges and their likely financial effects due to the transition of firms in LCS. Moreover, the understanding of the effect of institutional ownership on the relationship between LCSF and restructuring charges will assist investors in identifying optimal stock investments. Limitations include exclusion of utilities/financials and emerging markets, potential endogeneity despite GMM, and reliance on S&P data without causal ownership experiments. These findings inform policymakers on enhancing corporate governance to promote active institutional monitoring, reducing agency costs in restructuring as evidenced in global surveys.

It is evident from the results that institutional investors endeavor to value-maximizing restructuring by prohibiting managers from attaining the sub-optimal restructuring level. Therefore, to maximize wealth, investors are expected to select stocks of corporations that are owned by institutional investors. This study investigated the effect of a single component of corporate governance on the relationship between LCSF-restructuring charges. Therefore, in the future, the moderating effect of other components of corporate governance on the relationship between LCSF-restructuring charges can be investigated. Additionally, future studies could incorporate ESG factors as missing constructs, apply machine learning for improved LCSF classification, or test in emerging markets with alternative theories like resource dependence.

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Availability of Data

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Declaration of AI Use

It is declared that no generative AI tools / LLMs were used in writing this manuscript. Only Grammarly was used for correcting the grammatical errors and for clarity of the paper.

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Appendix

Table A: Average Restructuring Charges 2000-2023 (Selected Countries)

Country	Restructuring Charges (000)
Australia	18113
Belgium	57966
Canada	37719
Finland	93796
France	108011
Germany	129233
Ireland	86655
Italy	52415
Japan	73932
Netherlands	75261
Sweden	32915
Switzerland	120577
USA	77090
United Kingdom	86104