DOI: https://doi.org/10.52015/nijbm.v19i2.215
NUML International Journal of Business & Management
Volume 19, Issue 2, December (2024)
Journal Home Page: nijbm.numl.edu.pk/index.php/BM
ISSN 2410-5392 (Print), ISSN 2521-473X (Online)

Does Employee Compensation Influence Financial Leverage? Insight from the Indian Hi-Tech Sector

Syed Shafqat Mukarram[1], Farhan Shahzad[2], Ghulam Yasin[3]

Article History:
Received: November 8, 2024
Revised: December 19, 2024
Accepted: December 25, 2024
Available Online: December 30, 2024

Keywords:
Deferred Compensation, Hi-Tech Firms, financial leverage, National Stock Exchange (NSE), Non-financial firms.

Funding:
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

This study investigates the impact of firm compensation practices on financial leverage in a large emerging market. Employing trade-off theory, this study highlights the importance of deferred compensation in capital structure in the Indian Context, which is associated with the large Hi-Tech sector. To investigate this, we have used hand-collected data from the financial statements of the top 100 listed firms on the National Stock Exchange of India for the period from 2010 to 2022. We have used the difference Generalized Method of Moments (GMM) regression estimation approach for data analysis. Our findings suggested that deferred compensation is negatively related to firms' financial leverage in high-tech firms. Thus, firms can use deferred compensation as a mode of financing for various investment activities instead of external borrowing on stringent conditions for such investment. Our assumptions, grounded in tradeoff theory and agency theory, posit a negative relationship between deferred compensation and firm financial leverage. This suggests that deferred compensation can be effectively utilized in the high-tech sector as an alternative to external borrowing.

Introduction

The choice of financing strategies is a critical determinant of a firm's financial performance and long-term sustainability. It is an important decision to balance between internal resources and external funding options. The relationship between financial leverage and employee compensation remains an underexplored yet increasingly significant dimension of capital structure. This is particularly true in knowledge-intensive industries like the hi-tech sector (Sun & Xiaolan, 2019).). Recent empirical studies, such as those by Lin et al. (2019), highlight the nuanced dynamics of financial decision-making within firms, suggesting that compensation policies may influence not only operational outcomes but also financing preferences. In emerging economies such as India, where the hi-tech sector serves as a backbone of innovation and economic development, understanding these dynamics becomes even more pertinent.

[1]Department of Management Sciences, University of Wah, Pakistan, shafqatmukarram@yahoo.com
[2]Department of Management Sciences, University of Wah, Pakistan, farhan.shahzad@uow.edu.pk
[3]Department of Management Sciences, University of Wah, Pakistan, ghulam.yasin@uow.edu.pk

The study explores the impact of employee compensation on financial leverage in the Indian Hi-Tech Sector to bridge gaps in existing literature and provide actionable insights for policymakers and industry leaders. Adu-Ameyaw et al. (2022) suggest that many financial economists have since taken a profound interest in a firm's capital structure. Different firms can utilize various types of combinations for capital structure to enhance firm value. Some firms may prefer debt financing while others prefer equity financing. Thus, it is important to understand the firm's financial decision dependence and the nature of its frictions. This has drawn much attention from researchers in the last few years (Kweh et al, 2022). As discussed by Matsa (2018), recent literature also highlights the influence of employee compensation on a firm's capital structure.

Compensation includes employee wages, incentives, benefits, and all kinds of other compensation or incentives from the commencement of their employment. Competitive compensation is essential for employers to retain, attract, and motivate employees (Nasrin, 2022). Aligning employee compensation with his personal goals creates a common objective that leads to an increase in the firm's performance and productivity. Employee compensation is believed to be essential for organizational functioning because it is at the core of the employee and firm association (Gupta & Shaw, 2014). Chakraborti et al. (2024) also unveils the factors that may cause mixed findings on the relationship between employee compensation and firm leverage.

Maintaining firm liquidity and sources of finance are the key issues for managers and have attracted immense attention in contemporary research (Diantimala et al., 2021). Nevertheless, researchers and practitioners are still looking for alternative financing models rather than conventional ones (Adu-Ameyaw et al., 2022; Kweh et al., 2022). After the financial crisis of 2008, regulations of lending institutions have been revised; the enactment of these regulations with stringent conditions makes it more difficult for firms to arrange finance and maintain liquidity (Calabrese, 2021). Cole and Gamm (2020) reported, particularly small and less capital-intensive businesses have faced significant challenges in accessing finance from lending institutions following the 2008 crisis.

The Indian economy has shown stellar growth for the last two decades. Indian GDP has reached around 2.9 trillion US$, and exports have reached 330 billion US$. Nevertheless, the poverty line has dropped from 45% to below 22%. Economists predict that by 2023, India is expected to become the third-largest economy in the world (Weqar et al., 2021). Subramanian & Felman (2019) observed that, despite these advantages, firms in the Indian corporate sector have struggled to access finance in the aftermath of the financial crisis. This justifies connecting the firm's internal financing sources with the firm's financial leverage to find a less risky and alternative mode of finance.

Hi-tech firms are heavily reliant on innovation and skilled human capital, where compensation plays a dual role. Firstly, attracting and retaining top talent and mitigating the inherent risks associated with human capital-intensive operations. These firms often operate in competitive and dynamic markets, making their financial and compensation strategies critical to their success and sustainability. Hi-tech firms possess unique characteristics such as high R&D expenditures, significant intangible assets, and competitive labor markets. These factors influence how employee compensation interacts with financial leverage. Incorporating the moderating role of hi-tech firms provides critical insights into how sector-specific dynamics shape the interplay between employee compensation and financial leverage.

Dakua (2019) suggested several drivers for leverage have been identified in the literature, but the relationship between deferred compensation and firm financial leverage is virtually nonexistent, particularly in the Indian context. Moreover, it is very important to investigate how employee compensation practices can influence the firm's financing policy, specifically in small and less capital-intensive industries. Firms operating in the hi-tech sector are less capital-intensive and

rely on internal financing (Sun & Xiaolan, 2019). The Indian hi-tech sector is one of the largest hi-tech sectors in the world (Saeed et al., 2021).

Hi-tech firms are subject to high risk and are not able to raise funds from the capital market through public issues. Hence, deferred compensation can be an alternative source for their financing in the Indian hi-tech sector. The significance of employee compensation in a firm's capital structure decision has been acknowledged in the literature (Lin et al., 2019; Agrawal & Matsa, 2013; Berk, Stanton, & Zechner, 2010). These studies recognize the importance of labor wages in designing capital structure. It is crucial to realize that employees cannot be controlled and owned like a physical, tangible asset. They possess the cognitive ability to take and evaluate and then respond to organizational decisions. As Matsa (2018) also suggests, employees' bargaining power depends on the extent to which they can perform tasks that capital cannot.

Deferred compensation is a major aspect of compensation and is widely regarded as an instrument to mitigate observed deficiencies in compensation practices (Dutta & Fan, 2016; Edmans et al. 2012). Using inside debt (determined pension plans and deferred compensation) as part of the executive compensation package may help curb excessive risk-taking if managers are protected by limited liability (Edmans & Liu, 2011). Thus, deferred compensation may be an instrument to reduce firms' cost of debt. The first two papers examine the causes of financial friction in employment. Recent research suggests the effects of employee compensation on firm financial leverage (Lin et al. 2019). Sun & Xiaolan (2019) employed the dynamic contracting model to measure the results and used deferred compensation of employees as a way of financing to retain human capital. The finding of the study reveals that employee financing improves the capacity of high-tech firms by 20% to obtain finance. The firm invests money in intangible capital to increase labor efficiency. Human power is a combination of knowledge, social, cultural, and human qualities, as well as creative ability, expressed by the capability to generate economic value by workers. It is a significant element in business performance in addition to finances. The well-known trade-off theory of capital structure sets the benefits of debt, such as the interest tax shield, but with the disadvantages of high leverage that increases financial distress. Rau (2017) discussed that the trade-off theory suggests that a company will continue to borrow until the limited amount of tax protection from additional borrowing is outweighed by the increased potential cost of financial distress. Several previous studies have suggested a negative relationship between firm financial leverage and employee deferred compensation (Masta, 2018; Dasgupta & Sengupta, 1993; Berk, Stanton, & Zechner, 2010).

This study provides a threefold contribution. Firstly, this study will explicitly discuss how India's high-tech sector can serve as a case study for other emerging economies and identify transferable strategies. In this study, we propose that firms that defer salaries, effectively borrowing from their employees, represent an important, often overlooked, source of finance. Similarly, defined-benefit plans, which are part of a firm's leverage strategy, play a significant role in shaping the capital structure of firms that utilize them. In this context, we integrate employee market frictions into financial theories, we gain a better understanding of how the bargaining power of employees and their willingness to accept deferred compensation, or long-term benefits, might influence a firm's decisions regarding its capital structure. Secondly, this study emphasizes the importance of deferred compensation concerning firm capital structure in the context of the emerging economy of India. The growth of the Indian economy is closely tied to the Indian corporate sector, which relies on alternative financing methods rather than costly conventional ones (Subramanian & Felman, 2019). Employees may agree to accept lower wages today if they expect to get higher future benefits. Subsequently, these funds could be utilized to finance intangible investments rather than borrowing from external sources.

Studies on deferred compensation and firm leverage are virtually nonexistent. While several

factors have been identified in the literature for firm financial leverage, few studies have connected deferred compensation with firm leverage, particularly in the Indian context after the financial crisis. Finally, this study suggests that the industry context is a crucial factor in determining the strength and direction of the relationship between deferred compensation and firm financial leverage. This insight may help to further resolve the conundrum of mixed results found in prior literature on the relationship between compensation and firm financial leverage.

Literature Review

Theoretical Framework

The pecking order theory, developed by Myers & Majluf (1984), explains that managers follow a hierarchy when choosing the source of financing. The pecking order suggests that firms prefer internal sources of financing over external, and if external financing is deemed necessary, then firms choose the least risky financing security first (Udemba, 2020). Like retained earnings, firm financing from deferred compensation of employees is another source of internal financing. One of the important sources is employee compensation in the form of deferred payments that may be considered as a valuable source of financing and may be utilized in the firm's daily operating activities and for other tangible and intangible firm investments (Matsa, 2018). Sun & Xiaolan (2019) argue that firms can utilize such financing sources for their investment purposes, which subsequently affects the firm's debt capacity. Like retained earnings, deferred compensation may be considered a valuable source of internal financing that may also reduce the additional costs attached to external financing.

Trade-off theory and agency theory provide the foundational support for our research. Under trade-off theory, companies make decisions regarding the trade-offs between debt financing and equity financing. However, Lin et al. (2019) note that tax benefits from debt consolidation may not only increase direct costs but also lead to indirect losses. Agency theory represents a conflict between shareholders and executives, particularly because executives may act in their own interests rather than in a way that benefits shareholders. Shareholders may be disappointed with the monitoring and control phase, but this monitoring will continue to a certain extent and can be very costly. A company that underfunds its pension fund effectively borrows from its staff, providing a viable means of income for several reasons. First, deferred tax refunds may be lower than other funded financial services. Second, it reduces agency borrowing costs abroad by providing management with risk-reduction incentives and protecting the company from insolvency. Thirdly, it increases the level of negotiations between companies and unions by withholding part of employees' salaries, giving them a stronger stake in the long-term success of the company (Benmelech at el. 2012).

The trade-off theory of capital structure distinguishes debt benefits, such as interest tax shields, from the disadvantages of maximum financial stress costs. In this view, such costs include both direct (legal fees and advice usually received during insolvency) and indirect costs (loss of customers, suppliers, and employees). Under trade-off theory, firms make decisions regarding credit and equity financing. However, the tax benefits resulting from an increase in debt can increase not only direct but also indirect insolvency costs. Deferred compensation may be used as inside borrowing, allowing a firm to internally borrow from employees without increasing the costs of insolvency.

Agency simulations show that profit has a direct relationship with company value, automated opportunities, level of control, amount of revenue, free cash flow, and the value of management position. Hart and Grossman noted that there is something novel about debt. They further explain that when a lack of funding is at the expense of management, they make better investment decisions to reduce the risk of insolvency. However, Grossman & Hart (1982) highlight instances of bad credit and management practices, such as investing in questionable plans and risky projects.

Lastly, Becker (1964) posits in Human Capital Theory that human knowledge, education, and training are closely correlated with firm-level outcomes. This theory explains the mechanism by which investment in intangible assets, such as employee skills, increases firm productivity, and higher productivity is rewarded through higher compensation (Mincer, 1974; Strober, 1990). Previous researchers have acknowledged that intangible assets may be more valuable than fixed assets and contribute to a business's financial policies. Against this backdrop, we can say that Human Capital Theory provides the basis for the idea that the benefit of deferred compensation, in the form of employee financing, may be more pronounced in industries heavily relying on human capital, as such industries may struggle to attain conventional financing based on human capital as collateral.

Extant research primarily focused on global or regional perspectives, leaving specific national contexts underexplored (Matsa, 2018; Sun & Xiaolan, 2019). Few studies on employee compensation and firm financial leverage within emerging markets, particularly comparing high-growth economies like India with others in South Asia. There are some other countries in the region like Pakistan that share some historical and cultural similarities with India, but differ significantly in terms of economic size, institutional frameworks, and policy maturity. The relative lack of infrastructure development, regulatory consistency, and financial inclusion in Pakistan makes India a more suitable choice to study the intended phenomena at this stage.

Hypotheses Development

Compensation is crucial for both business owners and their employees in terms of attracting, retaining, and motivating employees (Ugoani, 2017). Employee compensation can be divided into two main parts. The first includes bonuses, salaries, and grants, while the latter encompasses flexible working arrangements, additional leave, rewards for employees with more significant responsibilities, and pension and retirement benefits, among others (Ugoani, 2017). Employing compensation strategies that operate at a competitive level of both compensation and equity helps create a shared sense of purpose among employees, leading to increased efficiency and productivity. Individuals seek jobs that align with their creativity and skills, with compensation serving as a key factor along with other benefits (Permadi, 2020).

Previous studies have suggested that executives should receive proper compensation packages to ensure the stability of their firms, along with the capacity of firms' equity and assets to cope with unprecedented circumstances and long-term debts (Nasrin, F. 2022). A US-based study reveals a positive relationship between leverage and compensation (Berk et al., 2010). Firms with higher leverage tend to pay higher compensation to the chief executive officer and employees. Lin et al. (2019) investigate whether distressed firms utilize leverage as a negotiating tool to reduce labor costs. They conduct ordinary least squares regression analysis using empirical data comprising US publicly held companies for the period between 2006 and 2013. Their findings reveal that firms with higher levels of debt compensate and pay more to employees for their human capital risk.

However, some studies have shown that high-leverage firms use it as a negotiating means to reduce labor costs, resulting in lower employee compensation compared to financially healthy firms. Kim & Jang (2020) examine the restaurant industry and explore the effects of employee compensation on performance and leverage. They find that while an increase in employee compensation does not yield immediate returns, it initially leads to a decrease in profits. However, profits increase after one year. A similar pattern is observed in the case of leverage. The results of the study suggest that restaurant firms can adjust employee compensation to manage their performance. The outcomes suggest that restaurant firms should increase employee compensation continuously for sustainable performance.

To start and grow businesses, funding is essential, and they rely not only on physical capital but

also on human capital. Labor market frictions, such as the fact that employees or human capital cannot be retained like physical assets because they act strategically, create challenges. Employees can negotiate for higher compensation, face retirement risk, and incur unemployment costs, among other factors. This complexity in financing employees or the workforce enhances tangible capital (Matsa, 2018). Matsa suggests using these frictions as a basis for considering the distinctive effect of a firm's employees on its financial leverage. The study further suggests that high leverage is often more challenging for employees, affecting their job security and increasing the chances of layoffs.

Firms strategically use leverage in negotiations with employees and defined benefit pension plans. The hiring of employees exposes the company to various inefficiencies in the labor market. Unlike physical capital, people can exhibit creativity, make decisions about where they work, and choose whether to quit, putting employers at risk. Fundamental disputes in the labor market and the private sector impact corporate financial options, such as taking on extra debt or funding employees' pensions. Individuals face retirement risks and anxiety about maintaining the same lifestyle after retirement when they are unable to continue work. In the past, many employers dealt with such concerns of the employees by offering deferred compensation in the form of a defined benefit pension that guarantees normal retirement benefits to their employees (Agrawal & Matsa, 2013). Seo et al. (2018) investigated the relationship between employee compensation and leverage in the context of the Asian financial crisis. They reported a negative link between employee compensation and a firm's financial leverage, a correlation that has been evident since the Asian crisis. Furthermore, their findings suggest that the negative relationship between leverage and compensation is particularly strong among small firms and research and development firms.

An important study was conducted in China to explain how firms can finance their nonphysical investments through employee deferred compensation. The researchers attributed the firm's employees as intangible capital. They analyzed how optimal decisions are influenced by the interaction of financial leverage, intangible capital investment, and employee compensation contracts. The study suggests that the firm achieves employee finance by stretching its immediate payments in the form of future claims. Their findings indicate that particularly research-related investment is highly correlated with employee financing, while it is not correlated with debt issuance. In their quantitative evaluation, they further suggested a new channel of employee financing and justified the cross-industry variations in financing patterns and leverage (Sun & Xiaolan, 2019).

Employees exhibit a weak commitment and may be inclined to pursue better employment opportunities (B. Bell & Van Reenen, 2014). To foster long-term employee loyalty, companies offer attractive compensation contracts that promise higher future remuneration. Workers are willing to accept lower wages today with the expectation of receiving higher compensation in the future (Wei & Yermack, 2011). The compensation contract delineates appropriate timeframes for corporate earnings to facilitate investment (Guiso et al. 2013; Michelacci & Quadrini, 2009).

The significance of employee compensation in a firm's capital structure decision has been acknowledged in the literature (Lin et al., 2019; Masta, 2018; Agrawal & Matsa, 2013; Bark, Stanton, & Zechner, 2010). Previous studies have yielded mixed results. One stream (Titman, 1984; Berk et al., 2010; Brown et al., 2009) indicates a positive relationship between compensation and the firm's leverage, suggesting that highly leveraged firms pay high compensation to employees working in a risky environment. Further, Anton et al. (2019) suggest that highly leveraged firms tend to compensate employees for the human capital risk they bear. Conversely, Chu Lin et al. (2018) argue that firms in financial distress often use leverage as a negotiating tool to reduce employee compensation compared to financially stable firms. Similarly, Seo et al. (2018) report a negative relationship between financial leverage and employee compensation during the Asian

financial crisis. Their findings further indicate that this negative relationship is particularly pronounced in small, high-risk firms with elevated levels of leverage. Chakraborti et al. (2024) and Rasheed et al. (2024) propose a model aimed at uncovering the underlying factors contributing to the mixed findings regarding the relationship between employee compensation and firm leverage.

Additionally, some studies also suggest a negative relationship between firm financial leverage and employee compensation (Masta, 2018; Dasgupta & Sengupta, 1993; Berk, Stanton, & Zechner, 2010). A negative relationship implies that highly debt-financed companies offer lower compensation to employees because debt financing has a corrective effect on employees. Individuals working in financially distressed firms might accept lower salaries to avoid unemployment.

Deferred compensation is widely regarded as an instrument to address observed deficiencies in compensation practices (Dutta & Fan, 2016; Edmans et al. 2012). The recent strengthening of disclosure rules for deferred compensation has led to substantial use of deferred compensation by firms, confirming the beneficial effects of such compensation arrangements (B. Bell & Van Reenen, 2014; Wei & Yermack, 2011). Using inside debt (determined pension plans and deferred compensation) as part of the executive compensation package may help curb excessive risk-taking, especially when managers are protected by limited liability (Edmans & Liu, 2011). Therefore, deferred compensation can serve as an instrument to reduce firms' cost of debt.
A firm that underfunds employee pensions and deferred compensation is essentially taking a loan from its employees, representing a favorable means of financing for multiple reasons for the firms (Masta, 2018; Autor & Dorn, 2013). Firstly, tax profits may be more economical compared to other financing sources, particularly for financially distressed firms (Ahmed et al. 2023; Cooper & Ross, 2001). Secondly, it diminishes agency conflicts generated by external borrowing by incentivizing managers to manage risks and thereby reducing insolvency (Ahmad et al. 2016; Sundaram & Yermack, 2007). Thirdly, it enhances the company's negotiating power with trade unions by withholding a portion of their compensation, simultaneously giving them a substantial share in the long-term success of the company (B. Bell & Van Reenen, 2014).

We investigate the negative relationship between deferred compensation and financial leverage. Our first hypothesis suggests a negative relationship between leverage and deferred compensation. Our assessment of the assumption is that firms use deferred compensation as a means of "inside borrowing." Inside loans are sometimes at lower-than-market rates when employees agree to give up their current compensation until their retirement. This characteristic of labor, as one of the inputs to production, has a significant impact on how businesses organize their financing, potentially helping reduce a firm’s overall debt level. Thus, based on the above arguments, we hypothesize as follows:

H1: There is a negative relationship between deferred compensation and financial leverage.

Fast technological progress, an increase in international competition, and the concept of a "knowledge-based" economy are reshaping the investment priorities of the corporate sector. These priorities are shifting from physical investments to research-based investments in many countries. Evidence indicates that physical investment is being surpassed by investment in Research and Development (R&D), marking a radical change in the investment patterns of certain industries in developed countries (Brown & Petersen, 2009). R&D investment is inherently risky and uncertain. Therefore, executive compensation is structured to provide incentives to CEOs for risk-taking, particularly in the form of increased investment in R&D (Coles et al., 2006). Due to the uncertain and risky nature of R&D investments, external credit for such investments is not easily available. Consequently, R&D investments become more reliant on the availability of internal funds, which are accessible in the form of deferred compensation or retained earnings. An increase in a firm's deferred compensation is likely to increase the firm's R&D investment.

The previous studies indicate that highly leveraged firms often utilize leverage as a means to control wages (Brown et al., 2009; Dasgupta & Sengupta, 1993). Dasgupta and Sengupta (1993) specifically found a negative relationship between leverage and employee compensation. They elaborate on how an organization can strategically choose an optimal capital structure to influence the outcome of its bargaining with employees. This bargaining tool effect is anticipated to result in a negative relationship between leverage and employee compensation.

During the R&D boom of the 1990s, firms financed their research and development activities from various sources, including cash flow, equity issuance, and internal finance (in the form of deferred compensation or retained earnings). The link between employee compensation and R&D investments is derived from the traditional agency conflict that arises from the separation of ownership and management of a firm. The optimal solution to this problem involves increasing the manager's long-term incentives rather than reducing free cash flows (Hall & Lerner, 2010). Increasing deferred compensation has a positive impact on firms' R&D, as observed in various industries (Agrawal & Matsa, 2013). Recent studies also conclude that firm investment in R&D is highly correlated with employee financing but not correlated with debt issuance (Sun &Xiaolan, 2019). This suggests that deferred compensation may increase the firm's R&D investment. Therefore, we hypothesize as follows:

H2: The relationship between deferred compensation and financial leverage is stronger in high-tech firms.

Methods

Sample and Data

The Indian high-tech sector has been chosen due to its significant contributions to economic growth, employment generation, and global competitiveness. India has emerged as a global leader in technology-driven industries, supported by government initiatives like "Digital India" and significant foreign direct investment. Policies such as the IT Act, start-up-friendly regulations, and innovation incentives provide a fertile ground for studying the interplay between policy and industry performance.

The top 100 non-financial firms listed on the National Stock Exchange (NSE) of India have been selected as a sample for this study. Data is hand-collected from the published annual reports of the listed firms on the NSE. The National Stock Exchange of India is an active Asian market and is considered a large emerging market in Asia (Saeed & Mukarram, 2022). The top 100 firms are chosen as the sample due to their largest market capitalization and representation of a significant portion of the market.

This study utilizes annual data for analysis from the period 2010 to 2022, covering 13 years. The selection of this period is based on data availability and access to relevant information. To achieve the stated goals, the study primarily relies on secondary data collected from the official website of the National Stock Exchange and audited annual reports published by non-financial companies listed on the exchange. Quantitative data is used in this study to analyze the relationships between deferred compensation and financial leverage in Indian-listed firms. One of the major advantages of quantitative research is that findings are reliable when a specific and exact sample is analyzed; consequently, using a sample of sufficient size allows for the generalization of results.

Dependent Variable

Financial Leverage (FL)

Financial leverage is a dependent variable crucial to the financial management system, capable of directly or indirectly influencing corporate decision-making to a large extent. The total debt ratio serves as a proxy for measuring the firm's financial leverage. The estimation of the debt ratio involves considering total debt over the total assets of the company (Sheikh & Wang, 2012; Sila

et al., 2016).

Independent Variable

Deferred Compensation (DC)

Deferred compensation is an independent variable that can be measured through various proxies. In this study, the sum of old age benefits, pensions, employee welfare funds, gratuity, and provident funds is used as a proxy to measure deferred compensation (Masta, 2018). When a person retires from a job, a pension is offered for the rest of their life (Lin et al., 2019). Deferred compensation is widely regarded as an instrument to mitigate observed deficiencies in compensation practices (Dutta & Fan, 2016; Edmans, Gabaix, et al., 2012). Deferred compensation is a component of pay that is to be paid to employees later. Largely, in most parts of the world, taxes on this income are deferred until it is paid out. Deferred compensation includes pension plans, retirement plans, and stock-option plans (Masta, 2018).

Hi-Tech Firms (HTF)

High-tech firms serve as moderating variables. A high-tech firm is a binary variable that takes the value 1 when the firm is categorized as a high-tech firm according to the Standard Industrial Classification Code (SIC) and 0 otherwise. Therefore, the identification of high-tech firms from the sample of 100 firms, as discussed above, is necessary. Firms in industries characterized by uncertainty due to rapid technological developments and subsequent changes in consumer demand face significant challenges. These industries include electronic and telecommunication, information technology/software, and biotech pharma (Tsai and Luan, 2016).

Firms operating in information technology/software, biotech pharma, and electronic and telecommunication industries are characterized by uncertainty due to rapid changes in technological development and consumer demands (Tsai and Luan, 2016). Consistent with prior literature, the high-tech sample is constructed from firms in Healthcare, Software, Information Technology (including BPO-IT or Business Process Outsourcing in Information Technology), telecommunications, automotive, and electronics sectors (Winters & Yusuf, 2007; Chaudhuri & Ravalli, 2006).

Control Variables. There are some important variables known as control variables. In conducting research, researchers keep these control variables constant (Lin et al., 2019). In our research work, we consider research and development, firm age, sales, return on equity, and return on assets as the control variables. By doing so, we aim to isolate and identify the specific influence an independent variable has on a dependent variable.

Return on equity (ROE). Return on equity is the ratio of a company's net income and its shareholders' equity. ROE is a measuring scale of firm profitability and how efficiently it makes profits (Alzoubi, 2016).

Return on assets (ROA). Return on assets is the ratio of firm's net income and the average of total assets. ROA tells how much profit a firm makes in relation to its total assets (Sila et al., 2016).

Firm Size (FS). Firm size is the log of the firm's total assets (Sila et al., 2016).

Firm age (FA). Firm age can be measured through the time between its going public and the current time in years (Sila et al., 2016).

Sales (SA). Sales refer to the total net sales made by the firm in a year, we collect the data on sales through the financial statements of the firm from 2010 to 2019(Lin et al, 2019).

Data Analysis

Quantitative data analysis is adopted by using panel regression analysis. We have simultaneously employed Panel Least Squares and Random/Fixed effects. Panel data regression is an impactful way to assess the dependencies of unobserved independent variables on a dependent variable. A panel data regression is simplest because it combines time series and cross-sectional data. In a panel least squares regression, it is assumed that the behavior of corporate data is consistent in

various periods. This approach uses the OLS methodology or the least squares technique to estimate the panel data model (Zulfikar, 2018).

Random/Fixed effects regressions are very important and useful, particularly when data falls into categories like industries, firms, states, etc. In such cases, researchers normally want to control characteristics of those categories that might influence the dependent variable. The researcher can never be sure that all relevant control variables are included in the model. If you estimate with panel OLS, the chance of the presence of unobservable factors that are correlated with the underlying variables still exists, resulting in omitted variable bias. Random/fixed effect regression will eliminate omitted variable bias if you believe that these unobservable factors are time-invariant (Bell & Jones, 2015). The Breusch-Pagan test allows us to choose between a random/fixed effects regression and a panel OLS regression. The null hypothesis in the Breusch-Pagan test is that variances across entities are zero.

We can use the fixed-effect model to avoid omitted variable bias. The main advantage of the FEM is to control all time-invariant omitted variables. The term "fixed effects" in the fixed effects regression model is used because the statistic indicates that the intercept is time-invariant. In simple words, the intercept may vary across individuals but remains unchanged over time (Jackling &Johl, 2009). It is a common assumption in regression analysis that all factors impacting the dependent variable but not included in the regression model can be appropriately summarized by a random error term. Fixed effects and random effects are the two most general and frequently used panel data estimation methods (Baltagi, 2008). The key advantage of FEM over classical OLS models is that the potential sources of bias in the estimations are limited.

Table 1: **Hausman Test**

Chi-Square (χ^2)	Degrees of Freedom (df)	p-Value
18.34	3	0.0001

The random effects model assumes that the unobserved variables are uncorrelated with all observed variables or, in other words, statistically independent of all observed variables. The Hausman test is performed to select the appropriate model between the fixed effect model and the random effect model. The null hypothesis shows (H0: Select FE ($p< 0.05$) that the fixed effect model is appropriate. For the above-mentioned reasons, standard errors may be very high when using the fixed effects regression model. Endogeneity can arise from time-invariant endogenous variables, measurement errors, and reverse causality, which may lead to biased results even when using fixed effects (FE) models. These challenges are common in finance research. To address endogeneity, prior studies have recommended the use of the Generalized Method of Moments (GMM). One significant advantage of GMM over other methods is that lagged variables can serve as valid instruments for endogenous variables. The relationship between deferred compensation and financial leverage is complex and influenced by various factors, which can be better understood through lagged variables. To achieve more robust research outcomes, a two-step system GMM approach is employed to tackle endogeneity issues.

Model

$$FL_{it} = \alpha + \beta_1 DC_{it} + \beta_2 HTF_{it} + \beta_3 DC_{it} \times HTF_{it} + + (\beta_4 - \beta_7)\, CV + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

FL: Financial leverage

DC: Deferred compensation HTF: High Tech Firms

CV: Control Variables, where α is a constant, βs are coefficients of variables, and ε is the error term.

Results

Descriptive Statistics and Correlations

Descriptive statistics of all variables, serving as proxies for financial leverage, deferred compensation, High-Tech Firms, and control variables, are presented in Table 2. The average financial leverage is 49%, measured as the total debt to total assets. This value is consistent with prior studies measuring leverage in listed firms in India (Mukarram, 2018). Deferred Compensation is a measured sum of old age benefits, pension, employee welfare funds, gratuity, and provident funds, scaled by total assets, and used as proxies to measure deferred compensation. The average value of deferred compensation (DC) is relatively low in relation to the total assets of the firm, suggesting that firms in India are not effectively utilizing deferred compensation plans. However, the maximum value shows that 6% of deferred compensation concerning total assets is an encouraging sign. The correlation coefficient between the variables is presented in Table 3.

Table 2: Descriptive Statistics

Descriptive Statistics	Deferred company station	Financial Leverage	High-Tech Firms	Firm size	Sales	Return on assets	Return on equity	Firm age
Mean	0.00113	0.4900	0.280	21.6876	6.7699	0.3457	0.7982	44.987
Median	0.00004	0.4546	1.000	21.7756	1.2651	0.3212	0.6876	34.987
Maximum	0.05732	0.9651	1.000	25.5751	15.987	2.8768	4.9879	108
Minimum	0.000	0.000	0.000	5.6588	0.0011	0.0088	0.0001	19
Std. Dev.	0.0089	0.3876	0.298	2.6831	21.765	0.8768	1.9879	21.276
Observations	1300	1300	1300	1300	1300	1300	1300	1300

Table 3: Correlation

Correlation	Deferred Compensation	Financial Leverage	High-Tech Firm	Firm size	Sales	Return on Assets	Return on Equity	Firm Age
Deferred compensation	1							
Financial Leverage	-0.0244	1						
High-tech Firms	0.323	-0.267**	1					
Firm size	0.365	-0.026	-0.472	1				
Sales	0.004	-0.032	0.015*	0.029	1			
Return on assets	0.165**	-0.006	0.209	0.168**	0.087*	1		
Return on equity	0.487*	-0.078	-0.0548	0.278**	0.0733	-0.090**	1	
Firm age	0.066***	-0.037**	-0.1215	-0.087	0.176	0.027*	-0.768	1

*Significant at the 10% level; **significant at the 5% level, *** at the 1% level.

Table 4: Breusch-Pagan Test

Chi-Square (χ^2)	Degrees of Freedom (d f)	p-Value
12.34	5	0.154

Financial leverage and deferred compensation

Table 5 shows that deferred compensation and financial leverage have a negative relationship; however, this relationship is not significant. Durbin-Watson and Breusch- Pagan tests report that our results are appropriate. The Durbin-Watson value is 1.97, which shows the absence of autocorrelation. An insignificant p-value of the Breusch-Pagan heteroscedasticity tests shows that there is no heteroscedasticity. Our first hypothesis suggests a negative relationship between leverage and deferred compensation. The second hypothesis posits that deferred compensation is negatively related to firm leverage in high-tech firms. The results reveal that deferred compensation negatively and significantly affects the firm's financial leverage in high-tech firms. Increasing deferred compensation reduces the firm's leverage. These results confirm the second hypothesis. The findings are significant and align with the conclusions of Sun & Xiaolan (2019), who suggested that employee financing increases the firm's research and development activity or intangible capital due to the limited availability of finance for intangible capital.

Many previous studies found a negative relationship between employee compensation and financial leverage. Dasgupta & Sengupta (1993) explain that negative relationships indicate that high-profit firms pay less for workers' compensation because leverage has a corrective effect on workers. Employees of a financially distressed firm often agree to lower wages to avoid a firm default (Brown, Fee, & Thomas, 2009). Using inside debt (determined pension plans and deferred compensation) as part of the executive compensation package may help curb excessive risk-taking if managers are protected by limited liability (Edmans & Liu, 2011). Thus, deferred compensation may be an instrument to reduce firms' cost of debt. A firm that underfunds its pension and deferred employee compensation is taking a loan from its employees, which is a favorable means of financing for multiple reasons for the firm (Masta 2018; Autor & Dorn, 2013).

Tax profits may be cheaper in comparison to other financing sources for a financially distressed firm (Ahmad, Saboor, &Nouman, 2021; Cooper & Ross, 2001). Secondly, it decreases agency conflict generated due to outside borrowing by incentivizing the manager to manage the risk and thereby reducing insolvency (Ahmad, Saboor, &Nouman, 2021; Sundaram & Yermack, 2007). Thirdly, it enhances the company's negotiating power with trade unions by withholding a portion of their compensation, while at the same time giving them a solid share in the long-term success of the company (B. Bell & Van Reenen, 2014).

Table 5: Effect of Deferred Compensation on Financial Leverage

	Panel Least Squares Regression	Fixed-Effect Regression	Difference Generalized Method of Moments
	(I)	(II)	(III)
Deferred compensation (DC)	0.05302 (0.0433)	0.0416 (0.0601)	-0.0746 (0.0801)
High-Tech Firm (HTF)	-0.04655 (0.0529)	-0.0341 (0.099)	-0.0385 (0.075)
High-Tech Firms*Deferred Compensation (HTF*DC)	- 0.6361*** (0.0290)	-0.510*** (0.0012)	-0.910*** (0.000)
Firm size	0.4633* (0.2287)	0.7781*** (0.100)	0.816*** (0.189)
Sales (SA)	-0.9689 (0.8689)	-0.8798 (0.7352)	-0.576 (0.349)
Return on asset (ROA)	-0.1769 (0.996)	-0.29879 (0.2769)	-0.381 (0.516)
Return of equity (ROE)	0.1355* (0.05474)	0.1698 (0.6987)	0.193 (0.491)
Firm age (FA)	0.056731*** (0.001)	0.07791*** (0.004)	0.0928*** (0.000)
Lag (Financial Leverage)	0.0373*** (0.000)	0.0539*** (0.000)	0.0701*** (0.000)
Observations	1300	1300	1300
R-Square	0.47034	0.7597	0.7597
Adjusted R-Square	0.4532		
Durbin Watson Test	1.97		
F-Test	61.5887	79.6761	81.678
Prob > F	0.0000	0.0000	0.0000
Wald Chi2			270.37
Prob > Chi2			0.000
AR(1)			0.0354 (0.036)
AR(2)			0.6312 (0.402)
Hansen J test			0.17456 (0.673)

This table reports the results of examining the relationships between deferred compensation and financial leverage, which were estimated by Panel least square, Fixed Effect, and GMM. Statistics were based on annual data for the years 2010–2022 from India.

Conclusion and Discussion

In this study, we concluded, after analyzing the data of a hundred non-financial firms listed on the National Stock Exchange of India over the period of 2010 to 2022, using the GMM model. Our results reveal that deferred compensation negatively affects the financial leverage of the firm. Different theories proposed by various research scholars on capital structure exist; among them, the trade-off theory suggests that firms' financing activities aim to maintain the optimal level of debt financing that affects firm-level outcomes. The findings of the present research show a negative and significant association between deferred compensation and financial leverage, indicating that deferred compensation reduces the leverage of the firm, particularly in high-tech firms. The significant negative relationship between deferred compensation and financial leverage in high-tech firms confirms the rationale that high-tech firms are highly intangible capital-intensive firms for which conventional financing is not easily available (Sun & Xiaolan, 2019). This study highlights the importance of deferred compensation in terms of capitalization in the Indian context, where a large high-tech sector exists, and India's growth relies on the growth of its high-tech sector.

This study provides evidence that deferred compensation negatively influences the firm's financial leverage when testing the linear relationship between deferred compensation and financial leverage. Findings indicate that deferred compensation in terms of pension and other retirement benefits is negatively related to the firm's debt level. These findings are consistent with the prior studies (Sun & Xiaolan, 2019; Matsa, 2018). The findings of the study suggest that in the hi-tech sector financial leverage of the firm positively moderates the relationship between deferred compensation and leverage. Our assumptions based on the Pecking order theory and agency theory are that deferred compensation may be considered as a valuable source of financing to be utilized in a firm's daily operating activities and for other tangible and intangible firm investments. However, in large firms, this relationship does not hold significantly.

Contributions

Extensive literature on compensation and leverage is presented, but due to different theoretical perspectives, methodologies, variable measurement, and the nature of businesses, there is diversity in results. Moreover, vast literature exists in the context of different developed countries that intend to investigate the relationship between deferred compensation and leverage (Sun &Xiaolan, 2019; B. Bell & Van Reenen, 2014; Wei & Yermack, 2011; Agrawal &Matsa, 2013; Benmelech et, al., 2019; Graham et al., 2019). However, there are very few studies that focus on deferred compensation in the context of emerging/developing economies. Previous capital structure theories only emphasize tangible or physical capital, and we incorporate intangible or human capital aspects into capital structure theories, enhancing our understanding of the capital structure and disclosing how companies' capital structures are shaped by employee considerations in developing countries.

Additionally, employing trade-off theory, this study explains that a firm can utilize not only retained earnings but also deferred compensation as a source of internal financing that helps the firm reduce financial leverage. By using agency theory, deferred compensation increases the employees' stakes in the organization, enhancing firm monitoring. Through this, firm monitoring improves because the employees have invested their money in the organization, and the firm's health is at risk, so they scrutinize their balance more strongly and avoid risky investments.

Implications and Limitations

The findings of the study have important implications, especially for managers in decision-making, financial advisors, and policymakers. As a result of these findings, managers gain a better understanding and knowledge of deferred compensation as a source of inside borrowing. Secondly, firms can utilize deferred salaries in their operational activities or routine financing instead of borrowing from outside under difficult conditions and much higher borrowing costs. This inside borrowing helps firms avoid external borrowing at higher interest rates and also aids in retaining employees by withholding some part of their wages. Lastly, using inside debt (determined pension plans and deferred compensation) as part of the executive compensation package may help curb excessive risk-taking if managers are protected by limited liability.

The current study is carried out in the Indian context. Therefore, the findings of this study may apply to similar other emerging markets but are not generalized to other stock markets worldwide. Hence, an extension would be carried out by exploring differences and similarities with other emerging stock markets.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Ahmad, N., Jahan, A., & Imtiaz, N. (2016). Measure of attachment style. *The International Journal of Indian Psychology*, *3*(4), 48-60.

Ahmed, A. M., Ali, M. N., & Hágen, I. (2023). Corporate governance and capital structure: Evidence from Europe. *International Journal of Professional Business Review*, *8*(7), e01663-e01663.

Alzayed, N., Eskandari, R., Eshraghi, A., &Yazdifar, H. (2023). Revisiting corporate governance and financial risk-taking. *International Journal of Finance & Economics*.

Autor, D. H., & Dorn, D. (2013). The growth of low-skill service jobs and the polarization of the US labor market. *American Economic Review*, *103*(5), 1553-1597.

Bell, B., & Van Reenen, J. (2014). Bankers and their bonuses. *The Economic Journal*, *124*(574), F1-F21.

Benmelech, E., Bergman, N. K., & Enriquez, R. J. (2012). Negotiating with labor under financial distress. *The Review of Corporate Finance Studies*, *1*(1), 28-67.

Benmelech, E., Frydman, C., & Papanikolaou, D. (2019). Financial frictions and employment during the great depression. *Journal of Financial Economics*, *133*(3), 541-563.

Chakraborti, R., Dahiya, S., Ge, L., & Gete, P. (2024). A model of managerial compensation, firm leverage and credit stimulus. *Journal of Financial Stability*, *72*, 101248.

Cooper, R. W., & Ross, T. W. (2001). Pensions: theories of underfunding. *Labor Economics*, *8*(6), 667-689.

Cowling, M., Nightingale, P., & Wilson, N. (2023). COVID-19 lending support and regional levelling up: evidence from UK loan guarantee schemes. *Regional Studies*, 1-16.

Diantimala, Y., Syahnur, S., Mulyany, R., & Faisal, F. (2021). Firm size sensitivity on the correlation between financing choice and firm value. *Cogent Business & Management*, *8*(1), 1926404.

Dasgupta, S., & Sengupta, K. (1993). Sunk investment, bargaining and choice of capital structure. *International Economic Review*, 203-220.

Dutta, S., & Fan, Q. (2015). Earnings management and dynamic incentives. AAA. Graham, J. R., Kim, H., Li, S., &Qiu, J. (2023). Employee costs of corporate bankruptcy. *The Journal of Finance*, *78*(4), 2087-2137.

Gigauri, I., Janjua, L. R., Panait, M., & Guillen, F. P. (2023). Exploring the Nexus Between Financial Inclusion, Poverty, Digitalization and Sustainable Development Goal. *LUMEN Proceedings*, *19*, 63-81.

Guiso, L., Pistaferri, L., &Schivardi, F. (2013). Credit within the Firm. *Review of Economic Studies*, *80*(1), 211-247.

Gupta, N., & Shaw, J. D. (2014). Employee compensation: The neglected area of HRM research. *Human Resource Management Review*, *24*(1), 1-4.

Hall, B. H., & Lerner, J. (2010). The financing of R&D and innovation. In *Handbook of the Economics of Innovation* (Vol. 1, pp. 609-639). Elsevier.

Kathan, M. C., & Tykvová, T. (2023). How do leveraged buyouts affect industry peers? Analysis of the information and the competition channels. *Review of Financial Economics*.

Kreilkamp, N., Matanovic, S., Schmidt, M., &Wöhrmann, A. (2023). How executive incentive design affects risk-taking: a literature review. *Review of Managerial Science*, *17*(7), 2349-2374.

Kim, H. S., & Jang, S. S. (2020). The effect of increasing employee compensation on firm performance: Evidence from the restaurant industry. *International Journal of Hospitality Management*, *88*, 102513.

Kweh, Q. L., Tebourbi, I., Lo, H.-C., & Huang, C.-T. (2022). CEO compensation and firm performance: Evidence from financially constrained firms. *Research in International Business and Finance*, *61*, 101671.

Lin, H.-C., Liang, S.-H., Chiu, S.-C., & Chen, C.-Y. (2019). Leverage and employee compensation–the perspective of human capital. *International Journal of Managerial Finance*, *15*(1), 62-78.

Matsa, D. A. (2018). Capital structure and a firm's workforce. *Annual Review of Financial Economics*, *10*, 387-412.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, *48*(3), 261-297.

Mukarram, S. S., Saeed, A., Hammoudeh, S., &Raziq, M. M. (2018). Women on Indian boards and market performance: A role-congruity theory perspective. *Asian Business & Management*, *17*, 4-36.

Naeem, M. A., & Adeneye, Y. (2023). Carbon Risk and Access to Finance. *Available at SSRN 4578248*.

Pradana, R. W., &Chalid, D. A. (2023). Intellectual capital and firm's financial distress risk: Evidence from developed and developing countries. *Journal Management Tori Dan Trepan*, *16*(2).

Rasheed, M. H., Rasheed, M. S., & Farooq, R. (2024). The interplay of Ownership, Governance, and Capital Structures with Firm Performance: Insights from the Manufacturing Sector in Pakistan. *UW Journal of Management Sciences*, *8*(1).

Saleem Salem Alzoubi, E. (2016). Ownership structure and earnings management: evidence from Jordan. *International Journal of Accounting & Information Management*, *24*(2), 135-161.

Sharma, G. D., Kraus, S., Talan, A., Srivastava, M., &Theodoraki, C. (2023). Navigating the storm: the SME way of tackling the pandemic crisis. *Small Business Economics*, 1-21.

Sisodia, A., & Maheshwari, G. (2023). Effect of determinants on financial leverage in FMCG industry: An empirical study of capital structure prior to COVID-19. *Asia-Pacific Journal of Management Research and Innovation*, 2319510X231178408.

Saeed, A., Mukarram, S. S., & Belghitar, Y. (2021). Read between the lines: Board gender diversity, family ownership, and risk-taking in Indian high-tech firms. *International Journal of Finance & Economics*, *26*(1), 185-207.

Sila, V., Gonzalez, A., & Hagendorff, J. (2016). Women on board: Does boardroom gender diversity affect firm risk? *Journal of Corporate Finance*, *36*, 26-53.

Strober, M. H. (1990). Human capital theory: Implications for HR managers. *Industrial Relations: A Journal of Economy and Society*, *29*(2), 214-239.

Subramanian, A., &Felman, J. (2019). India's great slowdown: what happened? What's the way out?

Sundas, S. (2019). Firm Size and Financial-Leverage Choice. Evidence from an Emerging Economy. *International Journal of Commerce and Finance*, *5*(1), 25-33.

Tsai, H.-F., & Luan, C.-J. (2016). What makes firms embrace risks? A risk-taking capability perspective. *BRQ Business Research Quarterly*, *19*(3), 219-231.

Titman, S. (1984). The effect of capital structure on a firm's liquidation decision. *Journal of Financial Economics*, *13*(1), 137-151.

Ugoani, J. (2012). Executive Compensation Management and Productivity Among Indigenous Small and Medium Enterprises (SMEs) in Nigeria. *Available at SSRN 2185608*.

Waqar, F., Khan, A. M., Raushan, M. A., & Haque, S. I. (2021). Measuring the impact of intellectual capital on the financial performance of the finance sector of India. *Journal of the Knowledge Economy*, *12*, 1134-1151.

Wei, C., & Yermack, D. (2011). Investor reactions to CEOs' inside debt incentives. *The Review of Financial Studies*, *24*(11), 3813-3840.