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ARTICLE

The Moderating Role of Dividend Payout on the Relationship Between Working Capital Management and Profitability: Evidence from Japan's Technology Hardware and Equipment Industry

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Abstract

This study examines the moderating impact of dividend payout on the relationship between working capital management and profitability. The working capital management is measured by the cash conversion cycle, and return on assets and Tobin's Q as profitability measure. The data were collected from the Thomson Reuters Eikon database spanning from 2002 to 2023. The study employed the two-step Generalized Method of Moments (GMM), and Fully Modified Ordinary Least Squares (FMOLS) methods, to estimate the moderating effect of dividend payout ratio on the relationship between CCC and profitability. The findings of this study revealed a negative and statistically significant impact of dividend payout on the profitability of Japan's manufacturing firms, particularly in the technology hardware and equipment industry. It also suggests that in industries where high capital expenditures are necessary, maintaining lower dividend payout ratio may be more conducive to sustaining profitability. These findings encourage a re-evaluation of dividend strategies, emphasizing the importance of aligning dividend payouts with the firm's long-term financial and operational goals to avoid undermining profitability. The study extends the inconclusive empirical evidence on the determinants of dividend policy, working capital management and profitability fills the lacuna in existing literature by focusing on how dividend policy influence working capital management practices and profitability of firms in Japan. The findings are also useful to the board of directors of non-financial firms in deciding an appropriate dividend policy, and to the shareholders in making investment decisions.

Keywords: Cash conversion cycle; Dividend Payout ratio; FMOLS; Japan technology hardware and equipment industry; Tobin's Q

1. INTRODUCTION

One of the key concerns in the contemporary world is the dividend policy. The corporation employs the dividend policy as a set of principles to determine the distribution of dividends to its shareholders. The dividend policy is of paramount importance in any business policy. Furthermore, the distribution of a firm's dividend not only impacts the cash flow of the shareholders, but also provides information on the company's present and future performance. Several scholarly articles [1-4] suggest that firms should develop certain strategies or policies to maximize the return on their investments for their shareholders. The influence of dividends on investors' investing interests makes dividend policy a crucial determinant for firms aiming to maintain their shareholders. In this context, it is essential for the firms to enhance their financial performance, particularly focusing on activity ratios, liquidity ratios, and profitability ratios.

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The aim of this research was to examine how Dividend payout moderates the relationship between working capital management (CCC) and profitability. The profitability metrics used in this researchwere Return on Assets (ROA) and Tobin's Q within the Japanese technology hardware and equipment sector. Dividend distributions are essential for improving a company's profitability by indicating its financial well-being and enticing investors [5]. Consistent dividend payments by a company indicate confidence in its future profits and stability, therefore enhancing investor confidence and augmenting the firm's market worth [6].

Consequently, this might result in an increased stock price, thereby augmenting the company's overall financial success. Furthermore, dividends provide shareholders a concrete and measurable return on their investment, thus alleviating the need to sell shares for the purpose of capital gains, so ensuring stability in the stock price. Bhaduri and Jose [7]. Moreover, the distribution of dividends may serve as a means of exercising control over management by restricting the level of available cash flow, thereby promoting more effective deployment of resources within the organization [8]. Consequently, a well-controlled dividend policy may not only increase the overall value for shareholders but also support sustained profitability by cultivating investor loyalty and encouraging responsible financial management.

Dividend distributions have a substantial impact on the correlation between working capital and profitability by influencing the liquidity and financial safety of a firm. The distribution of dividends by a company results in a reduction of its accessible cash, therefore affecting its working capital. Implementing effective working capital management is crucial for preserving operational liquidity, as it guarantees the company's ability to fulfill its immediate financial commitments while still pursuing lucrative prospects. A well calibrated dividend policy may establish equilibrium, enabling the firm to maintain an adequate amount of working capital to support operations and facilitate expansion, while also allocating surplus earnings to shareholders.

It is essential to maintain this equilibrium as insufficient working capital might result in liquidity limitations, which can have a detrimental impact on profitability. Alternatively, if a corporation retains surplus working capital rather than distributing dividends, it might indicate inefficiency in resource use, which could possibly decrease return on investment. Therefore, by strategically aligning dividend payments with working capital management, a firm may improve its profitability by maximizing liquidity and assuring efficient allocation of capital to achieve financial gains.

The research was mostly driven by the distinctive characteristics of the Japanese automotive industry. The technological hardware and equipment sector is characterized by its extensive capital requirements, necessitating substantial investments in equipment, inventories, and research. Strategic management of working capital is crucial for maintaining profitability in a very competitive and ever-changing business landscape.

In addition, Japanese companies have always adopted a cautious dividend policy in comparison to their Western counterparts. Nevertheless, there has been a transition directed towards augmenting dividend distributions in order to appeal to international investors, thereby establishing it as a relevant factor in financial success.

Despite the extensive research on WCM and profitability, there is a scarcity of studies that particularly examine the distinctive financial dynamics of the technological hardware and equipment industry in Japan. While there exists a significant body of research on the correlation between working capital management and profitability, the moderating influence of dividend distribution has received less attention, particularly within the Japanese technological hardware sector.

A study conducted by Anil and Kapoor [9] examined the determinants of the dividend distribution policy in the Indian Information Technology industry during a seven-year period from 2000 to 2006. The research findings demonstrate that liquidity and earnings volatility are the main factors influencing the dividend payout policy of the Indian IT industry. Cash flows, sales growth, and corporation tax, however, have little bearing on dividend policy.

Zhuang [10] employed a static panel data model to examine the variables affecting Britain's (UK) companies' dividend policies. The 1990–2007 timeframe was part of the dataset used for analysis. According to the results of the Ordinary Least Squares (OLS) regression, the market capitalization of publicly traded UK corporations has an impact on their dividend policy. The market-to-book ratio, debt-equity ratio, return on assets, profits per share, and tax all have little bearing on dividend policy.

The study conducted by Al-Kuwari [11] examined the elements influencing dividend policy in listed non-financial companies belonging to the Gulf Co-operation Council (GCC). Employing the random effect approach, the research proposed that dividend policy is directly influenced by profitability, business size, and government ownership.

The determinants of dividend policy of businesses in New Zealand were examined by Chen and Dhiensiri [12] via an analysis of listed firms on the New Zealand Stock Exchange (NZSE). A favorable correlation was seen between the ownership dispersion of New Zealand enterprises and their dividend payment ratio. The research also demonstrated a negative correlation between dividend payment and insider ownership, as well as a tendency for companies experiencing revenue growth to provide lesser dividends.

Ahmed and Javid [13] examined the variables influencing the dividend distribution policy of businesses in Pakistan between 2001 and 2006 using a sample of 320 non-financial companies listed on the Karachi Stock Exchange. The results showed that the profitability, liquidity, firm size, market concentration, and ownership concentration of companies are important factors influencing the distribution of policy payments. This was demonstrated by using the Lintner [2] model and the Generalized Method of Moments (GMM) as an estimate method.

In his study, Agyemang Badu [14] explored the variables affecting the dividend policy of Ghanaian financial firms between 2005 and 2009. The data acquired from the annual reports of the firms under consideration was examined utilizing the random and fixed effect methodologies. Statistically substantial positive correlations were observed between business age and liquidity and dividend payout. However, dividend payments could not be explained by profitability and collateral.

Oladipupo and Ibadin [15] investigated the relationship between dividend policy and working capital management in Nigeria's listed manufacturing companies using data from 2002–2006. According to the findings of the ordinary least squares analysis, working capital management (as determined by the net trade cycle) and dividend policy have a slight but favorable relationship. On the other hand, there is a weak and negative correlation between dividend policy and business growth and profitability.

The study conducted by Bushuru et al. [16] investigated the influence of WCM on the dividend payout ratio in Kenya. The researchers analyzed data from publicly traded companies registered on the Nairobi stock market that covered the time frame from 2006 to 2013. The findings of the multiple regression analysis reveal a statistically significant positive correlation between WCM, namely the CCC and accounts payable period (APP), and the dividend payout ratio.

However, there is a statistically significant inverse association between the dividend payment ratio and WCM, namely the accounts receivable collection period (ACP) and inventory collection period (ICP). Olang and Grace's [17] study found that WCM, as measured by cash management, inventory management, and accounts receivable, had a positive and significant impact on a company's dividend payout policy.

The study conducted by Yusof and Ismail [18] examined the key determinants of dividend policy in 147 publicly traded businesses in Malaysia. Through the use of fixed and random effects, pooling least squares model analytical approaches, the research found that profits, debt, business size, investment, and companies with a high number of shareholders significantly influence dividend payment policy. Analysis of the literature reveals that previous research on dividend policy have taken into account many aspects encompassing market concentration, ownership structure, company size, leverage, earnings, corporation tax, liquidity, financial viability, and sustainability. However, there is a limited number of studies that have specifically investigated the influence of WCM on firms' dividend payout policy.

Limited research conducted in Japan, has been identified that establishes a connection between the impact of dividend payout ratio, WCM, and profitability. Using listed non-financial enterprises on the Tokyo Stock Exchange in Japan, this article aims to fill the existing research vacuum by examining how the dividend payout ratio moderates the link between working capital management and profitability of firms. The research questions that follow will be examined in order to build on the existing empirical data:

i. How does dividend payout ratio directly affect a firm's profitability?

ii. ow does the dividend payout ratio influence the relationship between working capital management (CCC) and profitability in firms listed on the Tokyo Stock Exchange?

iii. Does the dividend payout ratio strengthen or weaken the impact of working capital management efficiency on the profitability of firms in the Tokyo Stock Exchange technology hardware and equipment sector?

The present analysis contributes to the current body of literature by deepening our understanding of the correlation between the dividend payout ratio, the Cash Conversion Cycle, and profitability. Current research on working capital management (WCM) mostly examines the direct correlation between CCC and profitability in different sectors. Nevertheless, the incorporation of dividend distribution as a moderating factor remains mostly uninvestigated. The present analysis contributes to the existing body of knowledge by presenting dividend payment as a plausible determinant that impacts the magnitude and orientation of the association between corporate governance and profitability. Furthermore, it emphasizes that financial policies such as dividend distributions may either strengthen or alleviate the influence of working capital efficiency on company profitability, hence broadening the theoretical range of both working capital management and dividend policy studies. The significance of this contribution is particularly notable in capital-intensive industries such as technology hardware, where the effective management of liquidity and operational efficiency is crucial for maintaining profitability.

Furthermore, the study of dividend policy and working capital management frequently occurs independently, as the former is seen as a financial choice and the latter as an operational choice. The present analysis makes a valuable contribution by establishing a connection between operational efficiency, as measured by CCC, and financial strategy, as measured by dividend payment. The study illustrates that businesses that distribute large dividends may implement more stringent working capital strategies to ensure adequate cash flows, therefore providing a comprehensive perspective on how organizations coordinate their financial well-being and operational effectiveness concurrently. The study demonstrates that dividend choices not only function as indicators of company success but also have an impact on operational plans.

Furthermore, although dividend policy has been thoroughly examined within the framework of agency theory and signaling theory, this study goes beyond these conventional paradigms to explore its significance. Dividend distributions are often seen as indications of the robustness of a company or as financial instruments to minimize agency costs by allocating surplus funds to shareholders. The present analysis demonstrates that dividend distributions may serve as a modulator of operational efficiency, therefore introducing a novel aspect to the comprehension of how companies handle both internal liquidity and shareholder expectations. Thus, it enhances the theoretical comprehension of the significance of dividend policy in influencing corporate behavior beyond investor signaling.

Moreover, the research furthers comprehension of the interaction between corporate financial strategy and operational efficiency measures such as CCC. Through an examination of the relationship between dividend policy and WCM, the study emphasizes the need for companies to synchronize their liquidity management with the generation of shareholder value. Furthermore, it illustrates that the distribution of dividends may function as an internal control mechanism, guaranteeing that companies efficiently handle their working capital to fulfill both operational requirements and shareholder interests.

The findings of this study may provide a foundation for comprehending the potential advantages of combining working capital management (WCM) with dividend payment methods in developing countries or other established markets sharing comparable features. Although Japan has unique economic features, the emphasis on innovation and capital intensity in its technology sector is similar to that of sectors in other areas. It is possible to expand the results of this research to investigate whether comparable dynamics occur in other technology-intensive markets or sectors, therefore enhancing our worldwide knowledge of the interplay between WCM, profitability, and dividend policy.

The paper is structured as indicated below: Section 2 encompasses the examination of existing literature and the formulation of hypotheses, whilst Section 3 delineates the data and variables used in this study. In Section 4, the findings of the panel data regression analysis are presented. Lastly, Section 5 presents a summary and conclusion derived from the results.

2. THEORETICAL FRAMEWORK

2.1. Theories of Dividend

2.1.1. Signaling Theory

The signal theory posits that dividend payments serve as a communication to external investors about the future outlook of the firm. Disbursing dividends by corporations indicates that the firm has realistic prospects for the future [19]. The rationale for this argument is rooted in the information asymmetry that exists between managers (insiders) and external investors. Managers possess confidential knowledge on the present and future prospects of the company that is not accessible to outsiders.

Within the framework of dividend policy, the distribution of dividends serves as a signal to investors, therefore mitigating the imbalance of information [20]. Investors see the rise in dividends as an indication that the company's future profits are expected to improve, thereby boosting investment confidence via dividend distribution [21]. The present research employs activity ratios, liquidity ratios, and profitability ratios as indicators to examine the potential of these three measures to guide dividend policy decisions.

2.1.2. Bird-in-the-Hand Theory

Azekkar et al., [22] "Bird in Hand" model posits that external shareholders tend to favor a more generous payout policy. The preference is in receiving a dividend in the present rather than a financial gain from a future investment that is very unpredictable. Several studies indicate that this approach is ineffective when proposed in a market that is perfectly complete and characterized by investors who act based on principles of rational conduct [23,24].

2.1.3. The Residual Theory of Cash Dividends

The residual of cash dividends theory posits that a corporate body distributes dividends just when it has surplus money above its earnings that are allocated towards funding intended initiatives [25]. Nevertheless, management is less inclined to distribute substantial dividends since it diminishes their utility attributable to the limited funds under their control. Consequently, management tends to either retain earnings or reinvest them in investments with negative net present value for their own benefit [26]. The study conducted by Wirama et al. [25] consistently asserts that the surplus cash should be allocated as dividends, notwithstanding the management's aversion to distributing earnings in this manner. In line with the research conducted by Agustin & Mahirun, [27], this study examines the impact of liquidity ratios and profitability measures on dividend policy from the perspective of excess cash variables.

2.2. Working Capital Management and ROA

The cash conversion cycle is traditionally seen as an indicator of working capital management [28,29]. Inventory turnover refers to the duration, measured in days, between the expenditure of funds for purchasing inventory and the collection of funds from clients after completed sales [28,29]. Furthermore, CCC provides more accurate analysis for managing a company's working capital status to guarantee it has sufficient cash and the appropriate timing to meet its liquidity requirements [30].

A number of hypotheses elucidate the ramifications of WCM. The present work specifically examines the CCC hypothesis as stated by Oh et al., [31]. The theory elucidates how firms ensure a reduced operational cycle in order to mitigate the repercussions of inadequate working capital management [30]. Efficient WCM by reducing CCC is said to enhance a corporation's liquidity, productivity, and values [32]. A longer CCC suggest insufficient WCM, which frequently results in lower business value and profitability [32]. Consequently, a shorter CCC is suggested as it shows how strong the business is [33].

The theories of CCC propose that companies maintain a reduced level of cash conversion cycle, which is anticipated to enhance company performance and value. This implies that companies should have a proactive strategy in handling working capital to improve their level of performance. Extensive empirical research conducted worldwide examines the impact of CCC on industrial performance.

Various research produced divergent findings, with the majority suggesting that CCC had a negative impact on corporate performance. A study conducted by Yeboah, S., and Kjårland, [29] investigated the impact of CCC on the profitability of 13,797 small and medium-sized enterprises (SMEs) in Sweden between 2008 and 2011. The results indicated a robust inverse correlation between financial performance and CCC. Using data from the Orbis database, Akindele et al., [34], investigated how WCM affected the profitability of four African manufacturing firms between 2005 and 2009: South Africa, Kenya, Nigeria, and Egypt. They discovered that CCC significantly decreased company profits.

An investigation conducted by Wang et al. [35] in Pakistan found that WCM had a detrimental impact on the overall productivity of manufacturing publicly traded businesses. Gonçalves et al. [36] examined the effect of WCM over a nine-year period (2006–2014) on the profitability of unlisted companies in the UK. The researchers found a strong negative relationship between profitability and working capital efficiency. Additionally, Gołas, [37] evaluated the effect of WCM on the profitability of Polish milk processing companies during a ten-year period (2008–2017) using data from emerging economies. According to the study, CCC significantly impairs business performance. Additionally, Yousaf and Bris [38] investigated the impact of WCM on financial performance using a sample of 326 Czech businesses. Business performance is significantly impacted negatively by WCM, according to the results of a two-step technique GMM estimator.

Mandipa et al., [39] looked at the connection between the CCC and the financial performance of South African retail firms that were listed between 2010 and 2019. The results of the investigation showed that the net operating profit margin was negatively impacted by CCC. Herison et al., [40] assessed how WCM affected Indonesian listed trading companies' profitability from 2015 to 2019. According to the data, working capital turnover and profitability are significantly correlated negatively. Urhoghide and Korolo, [41] also looked at the connection between WCM and the financial performance of 56 publicly traded non-financial companies in Nigeria from 2016 to 2020. With the use of GLS regression, the authors showed that CCC significantly harmed the company's profitability.

Le, [42] found that, for a sample of 497 Vietnamese businesses from 2007 to 2016, working capital management has a negative impact on firm value, profitability, and risk. For steel companies in Vietnam. Additionally, Ren et al. [43] found that the profitability of Chinese non-state-owned businesses was negatively correlated with the cash conversion cycle.

Soukhakian and Khodakarami [44] found that the cash conversion cycle has a negative relationship with an asset's rate of return (ROA) when they examined the relationship between working capital management and efficiency as well as the regulatory role of macroeconomic factors (inflation and GDP) in Iran's listed manufacturing firms. Although macroeconomic factors do not modify the link between working capital management and firm success, they do have a positive and substantial association with ROA.

The research conducted by Ahmad et al., [45] examined the impact of WCM on company performance by selecting a sample of 577 firms from three Asian countries during the period of 2004 to 2020. The findings of the research revealed that the CCC substantially enhanced ROA.

H1: CCC has a negative impact on ROA of Japan's Technology Hardware and Equipment industry.

2.3. The Effect of WCM on Tobin's *Q*

Optimal administration of WCM may improve a firm's financial performance, therefore significantly influencing Tobin's Q. Effective management of inventory levels enables a firm to minimize carrying costs and enhance cash flow, therefore resulting in increased profitability. Equally, effective administration of accounts receivable and accounts payable may enhance cash flow efficiency and minimize reliance on external funding. The presence of sufficient working capital allows a firm to take advantage of growth prospects by offering the essential liquidity to allocate towards new initiatives, research and development, marketing, and expansion. Optimization of working capital by a firm to stimulate growth and achieve greater profitability might lead to a rise in Tobin's Q.

A lack of adequate operating capital may suggest an elevated degree of financial risk and instability. A corporation with a significant amount of short-term debt or difficulties in fulfilling its present obligations may face financial difficulties, which may have a detrimental effect on Tobin's Q indicator. Investors prioritize stability and may attribute a reduced market value to a firm that has substantial difficulties in managing its working capital. Working capital's effect on Tobin's Q may also

be influenced by industry-specific attributes. The inventory needs and cash cycle characteristics of industries like retail or manufacturing may need significant expenditures in working capital. Under such circumstances, the market may anticipate increased levels of working capital, and firms who effectively handle their working capital may nevertheless have a positive valuation.

Scholarly research has recently investigated the correlation between WCM and a firm's financial success by using accounting-based techniques and market-based approaches such as Tobin's Q ratio. The study conducted by Afrifa [46] revealed that small and medium-sized enterprises (SMEs) place more importance on working capital management (WCM) compared to big enterprises. This is because, in contrast to external sources like corporate equity and loans, SMEs have easier access to internal sources of funding, such as working capital. Their results suggest that companies with cash flows over the median threshold have the ability to allocate more funds towards working capital, hence improving their ROA and Tobin's Q. The authors conducted a detailed analysis of how cash flow affects the correlation between working capital and company performance in SMEs in the United Kingdom.

On the other hand, Singh et al. [47] conducted a meta-analysis and discovered that WCM, as evaluated by the CCC, negatively impacts profitability as measured by Tobin's Q ratio, ROA, return on capital employed (ROCE), gross operating profit (GOP), and net operating profit (NOP). These results suggest that businesses may increase their profitability by implementing a proactive working capital strategy.

In their latest study, Chancharat and Kumpamool [48] analyzed working capital management (WCM) in US firms over a 27-year period (1990-2017) using many measures such as accounts receivable (A/R) turnover, inventory turnover, days payable outstanding (DPO), and cash conversion cycle. The study revealed that the mean values of these measures differed across industries, suggesting that the suitable level and working capital management strategy differ based on the kind of company. A shorter CCC and DPO, along with increased A/R and inventory turnover, were shown to enhance a company's Tobin's Q ratio and return on invested capital (ROIC).

Farhan et al., [49], on the other hand, demonstrated that a lower CCC lowers a business's profitability without having an impact on Tobin's Q ratio. This suggests that extremely successful businesses could place less emphasis on WCM efficiency. A company's Tobin's Q ratio is therefore not yet clear how working capital management affects it. In light of the adverse impact of CCC on profitability, the following hypothesis is formulated:

H2: CCC has a negative impact on Tobin's Q of Japan's Technology Hardware and Equipment industry.

2.4. The Effect of Dividend Decision on the Relationship Between Working Capital and Profitability

A dividend refers to the fundamental profit or return on the investment made by a shareholder. The assessment of risk and investment potential in a corporation involves considering many elements such as firm size, financial constraints, investment opportunities and options, and external pressures. Shareholder Lee & Park, [23], contended that, under certain simplifying assumptions, the choice to distribute dividends has no impact on the value of a company and becomes hence insignificant. However, conventional wisdom, although with modified assumptions, holds that a well-controlled dividend policy is crucial for shareholders since it may impact share prices and the wealth of owners. This argument is predicated on two assumptions: firstly, that there is no tax disadvantage for investors in receiving dividends.

Secondly, that companies may successfully obtain cash in capital markets for new projects without incurring substantial issuance costs. Advocates of the second school argue that dividends are detrimental to the typical investor due to the tax inefficiencies they generate, leading to reduced value.

Lastly, there are others in a third category who contended that dividends are unequivocally beneficial as common investors appreciate them. Therefore, despite extensive study on dividends, business managers and financial economists continue to encounter what Black [50] referred to as a dividend puzzle, characterized by incongruous components.

The study conducted by Amidu [51] revealed that dividend policy has a significant impact on business performance, particularly on profitability as assessed by the return on assets. The findings indicated a very favorable and a statistically significant relationship between dividend policy, sales

growth, return on equity and return on assets. These findings suggest that the profitability of a company is affected when it implements a dividend payment strategy. In addition, the data indicated a statistically significant correlation between profitability and dividend payment ratio.

Ighomereho et al. [52] investigated the connection between listed firms' dividend payments and return on assets in Nigeria. Panel regression analysis was employed in the study, which included data from a sample of 30 listed companies in Nigeria for the years 2011 to 2019. According to reports, ROA significantly improves dividend payments. According to the study's findings, companies with high ROA often pay out larger dividends than those with low ROA. This conclusion shows that the profitability of a corporation is a major factor of dividend distribution in Nigerian listed companies.

Similarly, Oluwole and Oyeleye [53] examined how dividend payments in Nigerian manufacturing companies were impacted by return on assets (ROA). Ten chosen companies that were listed on the Nigerian Exchange throughout a ten-year period (2010-2019) provided the data. The fixed effect and random effect regression models were used in the study to analyze panel data. The findings showed a strong positive correlation between ROA and dividend distribution over the long and short terms.

Furthermore, the effect of return on assets on the dividend distribution policy of Nigerian consumer goods businesses that are listed was investigated by Igben et al. [54]. The yearly published accounts of the firms under evaluation served as the source of secondary data. The research uses panel data regression analysis on a sample of 21 companies between 2010 and 2019. The results showed that ROA significantly improves dividend payout policy, meaning that companies with higher ROA also pay out higher dividends.

Tran, [55], propose that dividends serve as an indicator of the stability of a company's future cash flows. A comprehensive analysis of existing literature indicates that the primary factors influencing dividend choices are liquidity, post-tax profits of the company, cash flow concerns, future earnings, historical dividend patterns, investment returns, legal obligations, growth potential, inflation, and interest rates.

The observed correlation between dividend distribution and profitability gives rise to the development of the following hypothesis:

H3: The relationship between CCC and the profitability of Japan's technology hardware and equipment industry is positively impacted by DPR.

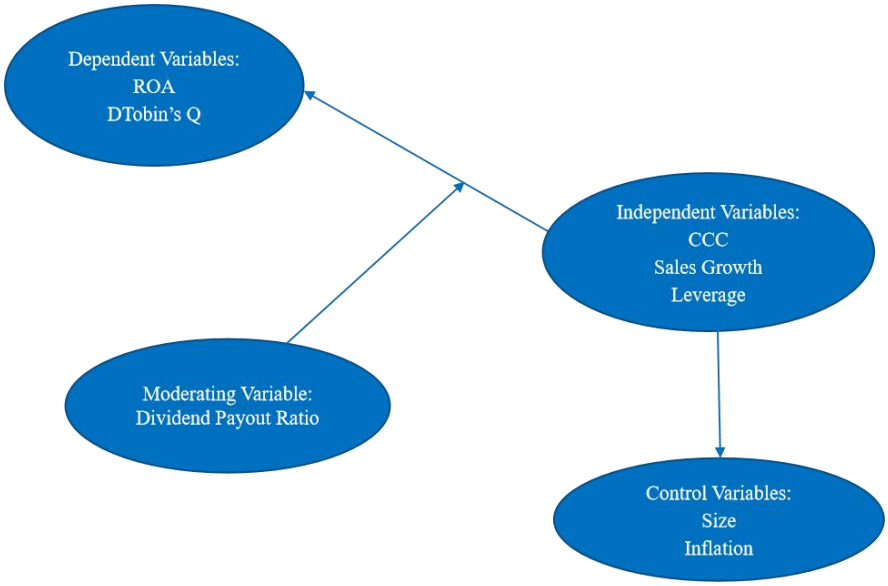

Figure 1. Conceptual Model (Source: composed by Authors).

3. METHODOLOGY OF THE STUDY

3.1. Sample and Data Collection

The research was conducted using data obtained from Japanese non-financial organizations, namely enterprises in the Technology Hardware and Equipment sector. According to Partner [56], the Japanese Technology Hardware and Equipment sector plays a vital role in Japan's economy and has a substantial worldwide impact. The sector in question comprises a diverse array of industries, such as semiconductors, consumer electronics, robots, telecommunications equipment, and computer gear.

The data for the study was acquired by the researchers via the Thomson Reuters Eikon portal. The study conducted by Koroma and Bein, [57] used data obtained from the Thomson Reuters Eikon database to investigate the moderating impact of economic policy uncertainty on the association between working capital management and profitability from UK non-financial firms. The impact of capital structure deviations from the golden ratio on the financial performance of enterprises in the UK and France was investigated by Amin and Cek [58] using data from Eikon. The reliability of using data from the Eikon database has been established [59].

A purposive simple technique was employed to select the companies. A total of 2904 years of observation were obtained from panel data including 132 firms in Japan's technology hardware and equipment industry, that met the selection criteria. Those firms that did not have 22-year data covering from 2002 to 2023, were not considered part of the study, because they did not provide sufficient or complete data during the chosen years of investigation.

3.2. Variable Selection

3.2.1. Dependent Variables

The variables used in all the investigations are consolidated in Table 1. This research used two dependent variables, namely ROA and Tobin's Q, to assess the profitability of the business. Each company, regardless of its size, has an asset designed for its operational purposes. The enterprises must generate returns from the use of their assets. The ROA is a metric used to assess the effectiveness and efficiency of a corporation's management in leveraging its assets to create sufficient profits. A lower ROA suggests that the assets of the business are not being fully used, indicating inefficiency in management. Conversely, a greater ROA indicates efficient use of assets, corresponding to efficient management. Tobin's Q is calculated by dividing a company's market worth divided by the cost of replacing its assets. A Tobin's Q number below 1 indicates that the companies are relatively undervalued, whereas a value over 1 indicates that the businesses are excessively priced.

3.2.2. Independent Variables

This research included three independent variables, namely the CCC, LEV, and SG, to assess the WCM of the organizations. The above-named variables serve as proxies for WCM. The CCC is a metric that quantifies the time it takes for a company to recover the funds spent on inventory by selling its products. The metric of leverage quantifies the amount of debt used by a corporation to fund its assets. Sales growth is a metric used to evaluate the ability of a company's sales effort to increase revenue within a certain timeframe.

3.2.3. Controlling Variables

Two control variables were employed in the study: inflation and the size of the companies listed on the Tokyo Stock Exchange. A log was applied to the businesses' total assets to determine their size. Inflation was downloaded from world bank.

Table 1. Summary of variables and formulae

Variable	Acronyms	Formula	Source
Dependent Variables			
Return on assets	ROA	Net income/total assets *100	Nuzulla and Murtianingsih, [60]
Tobin’s Q	TOBQ	Market capitalization/Total assets	Nuzulla and Murtianingsih, [60]
Moderating Variable			

Dividend Payout Ratio	DPR	Dividend per share/EPS	
Independent variable			
Cash conversion cycle	CCC	Average receivable days (ARD) + inventory day (INVD) - average payable days (APD)	Hassan et, al. [61]
Leverage	LEV	(Debt/Equity)	Shah et al., [62]
Sales Growth	SG	(this year's sales – previous year's sales)/previous year's sales)	Vijayakumaran, [63]
Control Variables			
Size	SIZE	(the natural logarithm of Total Assets)	Vijayakumaran, [63]
Inflation	INF		World Bank

Source: Authors

A Winsorization approach called Winsor2 was used to handle outliers. This technique entails substituting extreme values with the 10th and 90th percentiles. To minimize the occurrence of outliers, the research used the Winsor2 method on the variables ROA, Tobin's Q, CCC, SG, LEV, and (CCC X DPR).

3.3. Research Model

The study used four models to ascertain the impact of dividend payout on the relationship between CCC and profitability of Japanese Technology Hardware and Equipment industry.

Model 1:

$$ROA = \alpha + \beta 1\, CCC_{tF} + \beta 2\, SG_{tF} + \beta 3 LEV_{tF} + \beta 4\, SIZE_{tF} + \beta 5\, INF_{tF} + \beta 6\, DPR_{tF} + \varepsilon$$

Model 2:

$$ROA = \alpha + \beta 1\, CCC_{tF} + \beta 2\, SG_{tF} + \beta 3 LEV_{tF} + \beta 4\, SIZE_{tF} + \beta 5\, INF_{tF} + \beta 6\, DPR_{tF} + \beta 7(\mathrm{CCC} * \mathrm{DPR})_{tF} + \varepsilon$$

Model 3:

$$Tobin's\ Q = \alpha + \beta 1\, CCC_{tF} + \beta 2\, SG_{tF} + \beta 3 LEV_{tF} + \beta 4\, SIZE_{tF} + \beta 5\, INF_{tF} + \beta 6\, DPR_{tF} + \varepsilon$$

Model 4:

$$Tobin's\ Q = \alpha + \beta 1\, CCC_{tF} + \beta 2\, SG_{tF} + \beta 3 LEV_{tF} + \beta 4\, SIZE_{tF} + \beta 5\, INF_{tF} + \beta 6\, DPR_{tF} + \beta 7\, (\mathrm{CCC} * \mathrm{DPR})_{tF} + \varepsilon$$

3.4. Data Analysis

Two estimation techniques, the GMM and the Fully Modified Ordinary Least Squares (FMOLS), were used in the research to assess the influence of dividend distribution on the association between CCC and profitability. The GMM was particularly used to tackle the problem of endogeneity and mitigate any possible bias [64]. The statistical modeling tool used for the estimate was Stata.

As an alternative to a one-step method, the research used a two-step robustness strategy to reduce the influence of missing data on the findings. Due to its susceptibility to the effect of any missing data, the one-step method computes the difference between present and past variables. Conversely, the two-step method computes the mean of the variables and deducts it from the present variable, therefore diminishing the possible impact of absent variables in an individual year.

This work used the two-step system GMM methodology, following the method proposed by Ullah et al. [64], by including two lags of the dependent variable to account for its persistence. To assess the

impact of market share on the correlation between CCC and profitability, the research used four models to investigate this effect.

4. RESULTS AND DISCUSSIONS

In Table 2, the descriptive statistics for all the variables under investigation are shown. Japan's Technology Hardware & Equipment sector has an average mean Return on Assets (ROA) of 2.534%. The findings indicate that the company was able to allocate 2.534% of its profits from its whole assets. This also is an indicate of efficiency, the more effectively the company's is using its assets to generate profits Markonah et el., [65]. This resulted in the sampled manufacturing firms reporting profits.

The average mean of Tobin's Q is 0.671. Indications point to the market assessing the value of these firms' assets to be lower than their replacement cost, maybe indicating an undervaluation Japan's Technology Hardware and Equipment business has an average. The firms may not be using their assets as efficiently as possible, leading the market to assign a lower value Kadim et al., [66].

Cash Conversion Cycle (CCC) of 101.161 days, indicating that firms in this sector generate cash from their production investments in just over 101 days. A CCC of 101.161 days in Japan technology hardware and equipment sector indicates that firms in this industry take over three months to generate cash from their production investments. This implies relatively long production and sales cycles and may reflect the complexity of the industry. Managing this lengthy cycle is crucial, as it requires firms to maintain sufficient working capital, but also offers opportunities to improve operational efficiency by optimizing inventory, receivables, and payables management Barine, [67].

The mean size of the natural logarithm of total assets for Japan's Technology Hardware and Equipment industry is 17.59, which represents the average size of these firms' total assets. The mean natural logarithm of 17.59 for total assets in Japan's Technology Hardware and Equipment industry indicates that firms in this sector are generally large, asset-heavy firm**.** This reflects the capital-intensive nature of the industry, which requires substantial investment in infrastructure, equipment, and technology to remain competitive.

The average leverage of 0.457 suggests that around 45.7% of the activities in this business are funded by debt, while the remaining 54.3% are sourced from stock or assets. The current degree of leverage indicates a responsible use of borrowed funds. The rating is neither too high, which would imply a more precarious financial situation, nor too low, which may imply a failure to fully use potentially advantageous leverage.

The sales growth rate of 2.12 is a percentage, indicating that, on average, the firms in this industry had a 2.12% rise in sales each year. The 2.12% sales growth rate implies that firms in Japan's Technology Hardware and Equipment industry are experiencing slow but positive growth. This suggests that the industry is mature**,** with steady demand but fewer opportunities for rapid expansion. While stable, this growth rate may encourage firms to explore innovation, cost optimization, or new market opportunities to increase their growth potential.

On average, firms in Japan's Technology Hardware and Equipment sector distribute 76.9% of their net income to shareholders in the form of dividends, as shown by the average Dividend Payout Ratio (DPR) of 0.769. Consequently, the industry's maturity and emphasis on generating consistent revenue make it attractive to investors that prioritize income. Yet, it also implies that these firms may have restricted financial resources accessible for investments in expansion or innovation.

The Technology Hardware and Equipment sector in Japan has an average inflation rate of -0.181 (-18.1%), indicating a substantial degree of deflation. This implies that prices in the industry have decreased by an average of 18.1%. Various causes, such as technical progress, reduced demand, or heightened competition, may be responsible for this deflation. Decreasing prices may be advantageous for consumers and stimulate sales, but they can also exert strain on corporate revenues and profit margins Venkataraman & Petersen, [68].

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	2904	2.534	3.498	-4.025	8.052
Tobin's Q	2904	0.671	0.463	0.204	1.651

CCC	2904	101.161	56.061	21.846	201.71
SIZE	2904	17.59	0.727	13.752	22.413
LEV	2904	0.457	0.492	0.013	1.524
SG	2904	2.12	12.167	-16.719	23.7
DPR	2904	0.769	2.212	0.0000	58.824
INF	2904	-0.181	1.334	-1.881	3.753

Source: Authors

This paper presents the findings of the matrix correlation study in Table 3. Numerous scholars [69,70] have employed the connection between the matrix's independent variables to ascertain the presence of perfect collinearity. A multiple regression assumption, as described by Guevara, [71], is that the independent variables should not exhibit perfect correlation. According to Arhinful & Radmehr, [72] and Vatcheva et al. [73], a matrix correlation is said to be completely correlated if the two independent variables' coefficients are greater than 0.80. The matrix correlation analysis findings indicate that the independent variables don't exhibit perfect connection with one another.

Table 3: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ROA	1.000							
(2) Tobin’s Q	0.362	1.000						
(3) CCC	-0.082	0.103	1.000					
(4) SIZE	0.045	0.038	0.011	1.000				
(5) LEV	-0.270	-0.092	0.003	-0.052	1.000			
(6) SG	0.395	0.181	-0.114	-0.008	-0.009	1.000		
(7) DPR	-0.141	0.006	0.026	-0.007	0.034	-0.042	1.000	
(8) INF	0.112	0.030	0.091	0.018	-0.063	0.060	0.011	1.000

Source: Authors

The multicollinearity test is conducted to see whether the regression model detects a link among the independent variables by computing the Variance Inflation Factor (VIF). A VIF score below 10 indicates the absence of multicollinearity [74]. The presence of perfect correlation between the variables was established using variance inflation factors. When each variable's variance inflation factor is less than 10 [75,76], the correlation between independent variables is deemed flawless. Based on the variance inflation factor calculation, each variable's variance inflation factor is less than or equal to 10 (Table 4). Multicollinearity is implied when there is no perfect correlation between the variables.

Table 4: Variance inflation factor

	VIF	1/VIF
CCC	1.024	0.977
SG	1.02	0.98
INF	1.018	0.982
LEV	1.008	0.992
DPR	1.004	0.996
SIZE	1.003	0.997
Mean VIF	1.013	

Source: Authors

Model 2: The Moderating Role of DPR on the Relationship between CCC and ROA

The study's findings indicate that CCC has a favorable influence on profitability, which aligns with prior research undertaken by Koroma & Bein, [57]; Afza & Nazir, [77], Stephen and Elvis, [78] in identifying a robust positive association between CCC and profitability. Consequently, the corporation may achieve more profitability from its current assets, resulting in an enhancement of ROA. Moreover, efficient management of the CCC improves asset turnover by reducing the number of resources locked up in the operational cycle, therefore contributing to increased profitability. Hence, organizations that enhance their working capital efficiency generally see a proportional rise in ROA Abbadi & Abbadi, [79], thereby highlighting the pivotal significance of working capital effectiveness in the overall financial performance. A rise of 1% in CCC is linkable to a corresponding increase in ROA of.009.

Statistically significant effects of sales growth and inflation on ROA were observed. Augmented profitability and asset efficiency resulting from sales growth have a beneficial effect on ROA. During a period of rising sales, a corporation often achieves more revenues without a commensurate growth in assets, therefore enhancing its operating margin Faghanizadeh et al., [80]. This results in enhanced utilization of current assets, hence increasing ROA, a metric that quantifies the efficiency with which a corporation transforms its assets into net income. Additionally, sales growth might indicate heightened market demand and competitive prowess, which further enhances long-term profitability and enhanced ROA. The synergistic impact of increased revenues and consistent or improved asset utilization highlights the crucial significance of sales growth in improving overall financial performance Naqvi et al., [81].

Increased nominal sales and asset values resulting from inflation may have a beneficial influence on ROA, therefore potentially improving profitability if well controlled. With the rise in inflation, the prices of products and services may increase, leading to larger revenues for firms that do not necessarily incur a proportional increase in expenses. This is especially true for organizations with pricing power or those operating in sectors with inelastic demand. This may result in enhanced profit margins and, as a result, a greater ROA, as the higher profits are produced with the same or somewhat expanded capital structure. Furthermore, inflation may increase the nominal worth of a company's assets, especially fixed assets such as real estate or equipment, therefore enhancing the net income to total assets ratio. However, the beneficial effect of inflation on ROA mostly relies on a company's capacity to control the increasing costs of inputs and sustain or enhance its ability to set prices in an environment characterized by inflation.

The variables of size, leverage, dividend payment, and the interaction variable showed a statistically significant effect on ROA. The inverse correlation between the size coefficient and profitability implies that as the size of a company grows, its profitability always declines. This negative correlation may be ascribed to several variables. Larger corporations often encounter decreasing returns to scale, when the advantages of expansion are surpassed by the heightened intricacy and inefficiency in operations, coordination, and allocation of resources Vansvik & Friskytt, [82]. Moreover, bigger companies may encounter more considerable regulatory limitations and lengthier decision-making procedures, thus impeding their capacity to promptly adapt to market fluctuations and exploit emerging prospects. Moreover, when companies expand, they may face heightened rivalry and market saturation, which may diminish profit margins. These variables contribute to a situation in which the size coefficient has a detrimental effect on profitability, suggesting that above a certain threshold, expansion may not necessarily result in increased returns and might, in fact, result in worse financial performance.

The use of leverage may have a detrimental effect on ROA by amplifying financial risk and perhaps diminishing net income in relation to the company's asset base Salsabila et al., [83]. As a company increases its debt, it simultaneously faces elevated interest costs, which may gradually diminish its net income. Should the cost of debt surpass the profits derived from the supplementary assets funded by this loan, the total profitability of the company diminishes. This decrease in net income, when computed in relation to total assets, diminishes the ROA, indicating ineffective use of the assets in producing profit. Moreover, high leverage may lead to financial difficulty, which may result in asset sales at a loss or increased borrowing costs, further downgrading the firm's ROA.

Therefore, while leverage may enhance losses in advantageous circumstances, it presents substantial hazards that might weaken ROA, especially in unpredictable or declining markets Jin, & Wu, [84].

Dividend distributions may have a detrimental effect on ROA by redirecting capital away from potential reinvestment prospects that might improve asset efficiency. By distributing a substantial proportion of its earnings to dividends, a firm diminishes the cash accessible for internal expenditures, research and development, or growth initiatives. Insufficient reinvested profits might result in a deceleration in asset base efficiency growth and restrict the company's capacity to produce more returns from its assets. Therefore, while dividend distributions might financially compensate shareholders, they can also lead to a reduction in net income compared to the whole asset base, thereby diminishing the ROA. Furthermore, if the dividend distributions are funded by borrowing instead of retained revenues, the extra interest costs may further diminish net income, hence exacerbating the adverse effect on ROA. Hence, while dividends might indicate the financial well-being and worth of shareholders, they must be counterbalanced by the need for efficient use of assets and reinvestment to sustain an ideal ROA Lien, [85].

By intensifying liquidity limitations and limiting capital available for asset investment, the interplay between the CCC and dividend distribution may have a negative impact on ROA. A protracted cash conversion cycle, which characterizes the duration required to convert goods and receivables into cash, may exert pressure on a company's liquidity and working capital Johan et al., [86]. When a company consistently maintains large dividend payments, it may have a compounding difficulty as significant capital expenditures from dividends further reduce its liquid financial resources. Under this simultaneous strain, the firm may be compelled to either reduce necessary operating expenses or acquire more short-term debt in order to effectively handle its cash flow. Both situations may result in inefficiencies in the use of assets and decreased ability to make strategic investments, therefore degrading the ROA. Additionally, the pressure on liquidity may lead to increased borrowing expenses or financial difficulties, which may further weaken returns on assets. Hence, the combination of an extended cash conversion cycle with substantial dividend distributions often leads to a reduced ROA by limiting the company's capacity to efficiently oversee and allocate its assets.

Model 4: The Moderating Role of DPR on the Relationship between CCC and Tobin's Q

There is a statistically significant positive effect of the CCC and Sales growth on Tobin's Q. [87,88]. These positive CCC relationships indicate that the Japanese companies successfully managed their CCC and were able to streamline their operational processes, resulting in increased profitability and total market value. Investors see this operational efficiency positively, resulting in a greater Tobin's Q ratio, since the market holds the perception that these companies are more proficient in creating value from their assets. Moreover, effective management of working capital, as shown by an optimized CCC, may indicate strong managerial competence and financial well-being, thus increasing the company's market value compared to its cost of replaceable assets. Hence, the favorable influence of the CCC on Tobin's Q highlights the need of effective capital management in augmenting the value of a company.

Evidence has shown that SG has a statistically significant and positive effect on Tobin's Q, underscoring its vital function in augmenting the market's perception of business worth. Sales growth is a metric that quantifies the rise in revenue within a certain timeframe Wu et al., [89]. It serves as an indicator of a company's capacity to increase its market share, introduce new approaches, and efficiently meet the demands of consumers. Enhanced profitability is often linked to this expansion, as increased sales volumes may result in enhanced economies of scale and greater profit margins. Hence, companies that exhibit robust sales growth are often placed at a higher valuation by investors, who see them as having promising future potential and the capacity to maintain a competitive edge Rabinovich, [90]. The market confidence is seen in a somewhat higher Tobin's Q, which signifies that the market value of a company surpasses the cost of replacing its assets. This suggests that investors are prepared to pay a higher price for shares in firms that have robust growth prospects. Hence, the statistically substantial and positive influence of sales growth on Tobin's Q highlights the need of increasing revenue as a crucial factor in determining market value and strengthening investor confidence. For every 1% rise in CCC and SG, there will be a corresponding increase of.002 and.003 correspondingly.

The combination of the CCC and DPR as a moderating variable has been shown to have a statistically significant negative effect on Tobin's Q. This suggests that when companies optimize their CCC while keeping or increasing their DPR, their market value in relation to their asset replacement cost tends to decline. This paradoxical discovery implies that investors may see the combination of aggressive working capital management and large dividend payments as an indication of a possible excessive focus on short-term profitability, which may come at the cost of long-term growth opportunities. A shorter CCC often suggests effective operations and faster cash flow production, while a greater DPR implies robust shareholder returns [91]. If these elements interact negatively with Tobin's Q, it suggests that the market perceives these strategies as possibly restricting reinvestment opportunities, innovation, or capital expansion, which are crucial for maintaining long-term competitive advantage and growth, particularly in industries that need substantial ongoing investment. Thus, while usually seen as favorable financial indicators, the simultaneous impact of CCC optimization and DPR may result in a perceived lack of investment in future expansion, thereby reducing the market value of the company.

Furthermore, the attributes of company size, leverage, dividend payment, and inflation have a statistically significant negative effect on Tobin's Q, except for inflation which specifically had a negative influence on Tobin's Q. A rise of 1% in the moderating variables of size, leverage, dividend payment, and inflation will lead to corresponding decreases in numerical values of 0.303,0.372,0.046,0.011, and 0.004.

Robustness Test

Panel B of Table 5 from the study investigated how DPR moderates the link between CCC and profitability in the Japanese automobile sector. The Fully Modified Least Squares (FMOLS) approach was used to conduct this test. Incorporating this approach, Models 2 and 4 in Table 5 illustrate the findings, demonstrating that the interaction effect of (CCC*DPR) had a negative impact on ROA and Tobin's Q. Furthermore, the CCC still had a favorable influence on profitability, as shown by the ROA and Tobin's Q index. The results obtained are validated by these findings.

Hypothesis

H1: There is a negative impact of CCC on the ROA of Japan manufacturing firms.

Based on Model 1, where CCC was used as an indicator of working capital and ROA as a measure of profitability, the p-value for the coefficient of CCC was 0.000, and the coefficient itself was -0.001 (positive). This indicates that a 1% increase in CCC resulted in a 0.1% increase in ROA. Therefore, we reject H1, which suggests a negative impact of CCC on the ROA of Japan's technology hardware and equipment industry.

H2: There is a negative impact of CCC on the Tobin's Q of Japan's technology hardware and equipment industry.

Based on Model 3, where CCC was used as an indicator of WCM and Tobin's Q as a measure of firm value, the p-value for the coefficient of CCC was 0.000, and the coefficient itself was 0.002 (positive). This indicates that a 1% increase in CCC resulted in a 0.2% increase in Tobin's Q. Therefore, we reject H2, which suggests a negative impact of CCC on the Tobin's Q of Japan's technology hardware and equipment industry.

H3: The relationship between CCC and the profitability of Japan's technology hardware and equipment industry is positively impacted by DPR.

However, based on the findings that were inconsistent with this hypothesis, we reject H3. The results support the idea that DPR negatively influences the relationship between CCC and profitability in Japan's technology hardware and equipment industry.

Table 5: The Moderating Role of DPR

Panel A: GMM				
	Model 1	Model 2	Model 3	Model 4
Panel A: GMM				
L	0.412***	0.404***	0.656***	0.657***

Cash conversion cocycle	0.001***	0.009***	0.002***	0.002***
Size	-0.238	-0.548***	-0.375***	-0.372***
Leverage	-1.84***	-1.68***	-0.049***	-0.046***
Sales Growth	0.097***	0.092***	0.003***	0.003***
Dividend Payout Ratio	-0.060***	-0.006***	0.001***	-0.191
Inflation	0.022***	0.015**	-0.005***	-0.004***
CCC*DPR	-	-0.012***	-	-0.303***
Arellano-Bond test:				
Arellano-Bond test for AR (1)	0.0000	0.0000	0.0000	0.0000
Arellano-Bond test for AR (2)	0.986	0.827	0.230	0.220
Sargan (P-value)	1.0000	1.0000	1.0000	1.0000
Panel B: FMOLS				
Cash conversion cocycle	0.011	0.051	-0.012	0.010
Size	-6.169	-7.884	-0.809	-0.828
Leverage	-21.64***	-23.404***	-1.132	-1.228
Sales Growth	-0.112	-0.120	0.051***	0.050
Dividend Payout Ratio	-2.993	2.834	0.311	0.309
Inflation	2.995	3.053	0.052	0.057
CCC*DPR	-	-0.073	-	-0.002
R-square	2.308	1.935	2.289	2.218

5. CONCLUSIONS AND IMPLICATIONS

5.1. Conclusions

The present research investigated the possible moderating influence of DPR on the correlation between WCM, ROA, and Tobin's Q in Japanese computer hardware and equipment companies. The results provide substantiation for the moderating influence of DPR on the correlation between CCC and the financial performance. In corporate financial management, the significance of the DPR in shaping the connection between the CCC and profitability cannot be overstated.

By limiting a company's internal financial resources, the dividend payout ratio (DPR) reduces its capacity to reinvest operational benefits into more efficiency enhancements, hence weakening the correlation between profitability and the cash conversion cycle (CCC). A high DPR diverts cash flows to shareholders, decreasing funds available for working capital management and increasing reliance on expensive external financing, ultimately diluting the positive impact of CCC efficiency on profitability. In contrast, a shorter CCC usually increases profitability by speeding up cash recovery from operations.

This moderating impact is especially noticeable in the computer and hardware sector of Japan, which is distinguished by intense R&D, capital-intensive manufacturing procedures, and robust supplier networks. Furthermore, the industry's susceptibility to deflationary local demand, foreign exchange concerns, and global market volatility makes liquidity management even more challenging. Because of these industry-specific challenges, companies that must balance large dividend obligations with the requirement for significant investments in operations and innovation may discover that gains in CCC alone may not translate into increased profitability.

A greater DPR, which indicates a company's dedication to distributing earnings to shareholders Badru & Qasem, [92], may indicate robust financial position and inspire investor trust, hence possibly

improving the perceived worth of effective cash management. On the other hand, a high DPR might restrict the company's capacity to reinvest its profits into the firm, therefore limiting its potential to enhance or sustain an ideal CCC, particularly in sectors that need substantial capital expenditure. Curiously, the findings of this research also revealed an adverse and statistically significant influence of DPR on the profitability of manufacturing companies in Japan, particularly in the equipment and technology sector.

Increasing dividend distributions may have a negative impact on profitability (ROA and Tobin's Q) in this capital-intensive sector, where ongoing investment in research, development, and technical innovation is crucial for sustaining competitive advantage and long-term growth. The inverse correlation suggests that when companies designate a higher proportion of their profits to dividends, they may be exhausting the resources required for crucial reinvestment, therefore limiting their capacity to innovate, expand operations, and adapt to fast technological advancements.

Although stockholders expecting quick gains may benefit from a high DPR, it may adversely affect a company's working capital management and long-term profitability. A high DPR decreases internal working capital, which in turn compels companies to depend on expensive external financing, heightens financial risk, and diminishes operational responsiveness. Financial managers must so meticulously evaluate the compromises between compensating shareholders with dividends and guaranteeing enough liquidity and operational profitability. Aligning dividend distributions with efficient management of working capital is crucial for attaining sustained financial prosperity.

Management must meticulously achieve a balance between dividend policy and the requirement to finance current company operations and future expansion prospects. Furthermore, it implies that in sectors that need significant investments in capital, it may be more advantageous to support profitability by maintaining lower DPR. The results of this study stress the need of reassessing dividend plans, highlighting the need of matching dividend distributions with the company's long-term financial and operational objectives in order to prevent compromising profitability.

5.2. Implication for Managers

The findings of this research have various implications that have significant value for managers and the field of working capital investment. This study indicates that managers should be cognizant of the impact of DPR on the correlation between WCM and profitability. Significant management implications for the Japanese technology hardware and equipment business arise from the favorable influence of DPR on the correlation between the CCC and profitability.

- Managers may need to reconsider their dividend policies. They might shift focus from returning excessive cash to shareholders toward reinvesting profits into the business, particularly in innovation, research, and development, which are critical in the tech industry.
- Managers should clearly communicate the reasons behind potentially lower dividend payouts, emphasizing the importance of reinvesting in growth opportunities to ensure long-term profitability. This transparency can help manage investor expectations and maintain confidence in the company's strategic direction.
- Managers should focus on deeper operational efficiencies, such as reducing lead times, improving inventory management, and better aligning production with demand to enhance cash flows without relying solely on dividend policies to drive profitability.
- Managers should ensure that their strategies support sustainable growth, even if it means lowering dividend payouts temporarily to reinvest in the business. This approach is crucial for maintaining competitive advantage and profitability in the long run.
- The technology hardware and equipment industry are subject to rapid changes. Managers need to be agile in adapting their strategies, ensuring that CCC management aligns with market conditions and that DPR adjustments are made to support the company's financial stability in volatile environments.

The following limitations should be considered when interpreting the findings and implications of the current study. First, this study was limited to a single country and solely focused on technology hardware and equipment industry. Future research should expand the sample size by including more companies from various subsectors and take data over longer period. Methodologically, advantage of

panel data regression analysis using fixed and random effects should be explored to know whether there is heterogeneity in the observations across the firms and time.

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