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Strategic Impacts of RSUs on Company Performance: Insights into EPS and Profitability Growth

Won (Albert) Park [1,2], Elena Sernova [3] and Cheong-Yeul Park [1,*]

[1] Seoul Business School, aSSIST University, Seodaemun-gu, Seoul 04628, Republic of Korea; won.park@bsl-lausanne.ch
[2] Doctorate of Business Administration (DBA) Program, Lausanne Business School, 1022 Chavannes, Lausanne, Switzerland
[3] Faculty of Business Administration, Lausanne Business School, 1022 Chavannes, Lausanne, Switzerland; elena.sernova@bsl-lausanne.ch
* Correspondence: cyparkl@assist.ac.kr

Abstract: Restricted stock units (RSUs) are a key component of executive compensation schemes, aligning executive incentives with the long-term goals of the company and compensating for the limitations of traditional stock options. This study empirically analyzes the impact of RSUs on corporate performance, particularly earnings per share (EPS) and operating profit. S&P 500 companies' 27 years of data from 1997 to 2023 were used to evaluate the change in performance before and after the introduction of RSUs, and a paired *t*-test and hierarchical regression analysis were applied. The research results show that the introduction of RSUs has a stronger performance improvement effect in the 6th to 10th year after the introduction, suggesting that over time, even if RSUs cause short-term cost burdens, they increase the company's financial stability in the long term and contribute to sustainable growth. In addition, the same analysis was conducted by setting not only EPS but also operating profit as an alternative variable, and it was confirmed that RSUs also have a positive impact on actual profitability improvement. This study emphasizes the need for companies to design RSUs as a strategic compensation system for long-term value creation, not as a short-term performance reward, and suggests the need for a further analysis of the effects of RSUs in various industries and regions.

Keywords: restricted stock units (RSUs); earnings per share (EPS); operating profit; long-term value creation; sustainable growth; S&P 500; company performance; macroeconomic factors

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1. Introduction

1.1. Research Background

The modern business environment is becoming more complex and uncertain due to the acceleration of technological innovation and the internal situations of each country. In particular, with the inauguration of the second Trump administration, protectionism, which is in contrast to the existing globalization trend, is being strengthened and the world economic order is undergoing rapid changes. These changes are causing a reshuffling of the global supply chain and fluctuations in market accessibility, requiring companies to take a long-term and strategic approach to responding to changes in the external environment.

In a rapidly changing economic environment, focusing only on short-term financial performance or stock price increases inevitably weakens a company's sustainability and global competitiveness. In particular, short-term performance pressure is likely to cause

management to focus on short-term profit rather than long-term goals, which can negatively affect the long-term growth and stability of a company (Donaldson & Davis, 1991). As a result, an effective compensation system that aligns management and employees with long-term goals and strengthens the company's core competitiveness is becoming increasingly important.

Restricted stock units (RSUs) are becoming a key long-term performance compensation system that encourages management and employees to promote the long-term growth of the company in this business environment. RSUs are a structure in which compensation is only paid if certain performance targets are met during the vesting period and are known to be effective in alleviating short-term performance pressure and promoting long-term value creation (Murphy & Vance, 2019a). RSUs also contribute to aligning management actions with shareholder value and play an important role in fostering long-term performance and sustainability (W. Zhang et al., 2017a). In particular, in an economic environment where uncertainty is increasing, compensation systems such as RSUs are considered an important means of helping management focus on strengthening the company's sustainability and competitiveness rather than pursuing short-term profits (Filbeck et al., 2013a).

1.2. Research Needs and Limitations of Previous Study

Since Microsoft first introduced RSUs in 2003, RSUs have been studied in earnest. Previous studies showed that RSUs are more effective than stock options in enhancing a company's long-term performance and increasing shareholder value (W. Zhang et al., 2017a). In addition, it was reported that RSUs have the potential to reduce stock price volatility and increase financial stability (X. Chen et al., 2015). However, existing research on RSUs has several important limitations.

First, previous studies did not sufficiently consider the influence of exogenous variables when analyzing the effects of RSUs. Since 2010, the economic environment has been affected by a complex combination of variables, including the US–China trade dispute, the economic downturn caused by COVID-19, high inflation, and prolonged interest rate freezes. These variables can be a barrier to the independent analysis of the impact of RSU adoption on corporate performance. The study by A. Khodakevich et al. (2024a) analyzed the impact of exogenous variables on the financial stability and performance of companies and showed that external economic shocks can act as important variables in corporate performance. This suggests that, when analyzing the effects of long-term compensation schemes such as RSUs, the external environment must be controlled or else it may lead to distorted results.

Second, the indicators used in existing research, such as sales, operating profit, and market capitalization, may be sensitive to external economic shocks and may not fully reflect the long-term value of a company. For example, sales in a particular year may fluctuate sharply depending on external environmental factors, which may result in an underestimation or overestimation of the effect of RSUs. Serkov (2018) analyzed the impact of external shocks on financial indicators by industry and region and pointed out that the indicators for a particular year may not represent the overall performance of a company.

Finally, existing studies analyzing the effects of RSUs tend to focus mainly on short-term outcomes. While some studies found that RSUs have a positive impact on long-term corporate performance (Bhagat & Romano, 2016a), there are very few studies that actually verified the effects of RSUs from a long-term perspective. In particular, research on the impact of the introduction of RSUs on corporate internal control, financial stability, and the reliability of financial reporting is still in its infancy. This emphasizes the need to understand the effects of RSUs more broadly and analyze them from a long-term perspective.

1.3. Research Objectives

The main objective of this study was to analyze the impact of RSUs on a company's long-term performance and shareholder value. To this end, this study used 27 years of financial and stock data from 1997 to 2023 to examine the long-term impact of RSUs on EPS.

This study aimed to provide a practical basis for policymakers and company decision-makers when evaluating the introduction of RSUs as a key methodology of strategic compensation. By examining the long-term effects of RSUs, this study contributes to the growing body of research supporting RSUs as a viable compensation system that enhances company value. Furthermore, the findings of this study provide insights into the strategic benefits of RSUs, enhancing their role in aligning incentives with long-term company objectives.

2. Literature Review

2.1. Background Theory and Reason for RSUs' Introduction

Jensen and Meckling (1976) defined the discrepancy between the personal interests of management and shareholder value as a proxy problem through the agency theory and proposed stock options as a solution. The agency theory explains the moral hazard and information asymmetry that occur when the principal delegates tasks to the agent for his or her own benefit. This is said to arise from the agent prioritizing his or her own interests or failing to fully reflect the interests of the principal (Jensen & Meckling, 1976).

Stock options are a compensation tool designed to align management's interests with those of shareholders, with the aim of encouraging management to contribute to the company's performance. McConnell and Servaes (1990) found a curvilinear relationship between the percentage of equity held by management and firm value (Tobin's Q), suggesting that an appropriate level of equity compensation can improve corporate performance. However, studies by DeFusco et al. (1990) and Yermack (1995) showed mixed results for long-term performance improvement, with some cases showing negative effects. This showed that stock options can provide an incentive for short-term profit-seeking and stock price manipulation.

Additionally, stock options provide a strong incentive for stock price increases, but there is also a side effect of making them overly focused on short-term performance. According to Jensen and Murphy's (1990) research, management is likely to use a strategy to artificially inflate stock prices by inflating short-term performance. This behavior can undermine long-term corporate value and sustainability and can result in conflicts of interest with shareholders. Furthermore, an excessive grant of stock options can lead to accounting fraud and moral laxity. Burns and Kedia (2006) found that companies with excessive stock options are more likely to have accounting fraud.

A typical example is the accounting fraud cases of Enron and WorldCom in the United States; these are considered to be cases of moral laxity in which management attempted to maximize their personal profits through stock options.

The Enron case was one of the largest corporate scandals in American history, in which the energy company Enron inflated its profits and hid its debts through false accounting and off-the-books transactions and declared bankruptcy in 2001. The WorldCom case was one of the largest accounting fraud cases at the time, in which the telecommunications company WorldCom went bankrupt after it was revealed that it had manipulated its earnings by improperly treating approximately $11 billion in expenses as assets in 2002.

Both cases warned of the dangers of moral laxity and illegal accounting manipulation that occur when corporate executives seek to maximize their personal profits, and both cases resulted in serious financial losses for companies and investors. As a result, the

US government and regulators enacted the Sarbanes–Oxley Act to increase corporate accounting transparency and protect investors. This bill has had a significant impact on the regulation of global companies and their accounting systems since then by strengthening the accountability of management, mandating internal control systems, and establishing legal standards to prevent accounting fraud.

Also, stock options can lead management to choose risk-averse or conservative management strategies. According to a study by Coles et al. (2006), if stock options are granted in excess, management may choose conservative management strategies instead of innovative investments, thereby hindering the company's growth potential. Stock options may also dilute the value of existing shareholders' equity due to the issuance of new shares (Hall & Murphy, 2003), which may lead to excessive compensation for management. Finally, Bebchuk and Fried (2004) pointed out the problem that stock options can be rewarded regardless of business performance due to market volatility.

RSUs were introduced to overcome these limitations. RSUs are designed to be paid out after certain conditions are met, encouraging employees to focus on long-term performance. RSUs are granted based on specific conditions, including tenure and performance milestones, and are converted into stock or cash upon vesting. Unlike stock options, RSUs guarantee the value of the stock, but employees face the tax burden at the time of payment and the risk of stock price fluctuations.

RSUs are evaluated as a compensation tool designed to encourage management to autonomously pursue long-term corporate interests in line with the stewardship theory (Donaldson & Davis, 1991). The stewardship theory is based on the positive assumption that management will act in a committed manner for the success and long-term value of the organization based on trust with shareholders. This theory, in contrast to the agency theory, emphasizes cooperative behavior instead of control mechanisms. Palmer's (2024) study found that RSUs are consistent with the theory of stewardship and reduce agency costs and ensure long-term performance by constraining management's behavior during the vesting period. RSUs and stock options were compared and presented in Table 1.

Table 1. Comparison of RSU and stock options.

	Stock Option	RSUs
Stock ownership method	Granting the right to purchase shares at the exercise price.	Payment of shares upon fulfillment of certain conditions.
Vesting conditions	Possible to purchase shares at the time of option exercise; setting of vesting and expiration periods.	Automatic ownership of shares upon fulfill- ment of conditions, no voting rights and dividend rights before vesting.
Non-functional effect	There is a possibility of non-functional triggering of price hikes, such as information manipulation and stock repurchases, to boost stock prices.	There is a low possibility of non-functional triggering of behavior because value is assigned regardless of stock prices.
Incentive effect	There is a high expectation of rewards from stock price hikes, and there is a high possibility that executives and non-executive employees will focus on short-term stock price hikes.	Long-term performance and stable rewards encourage executives and employees to focus on long-term performance.

The introduction of RSUs gained momentum by changes in the US FAS 123(R) accounting rules in 2004. While existing stock options were not recognized as expenses on the financial statements, stock options have been treated as expenses since the implementation

of FAS 123(R), which has increased the accounting burden, and RSUs have emerged as an alternative. RSUs can be treated more simply in accounting and are advantageous for maintaining financial transparency (H. Chen et al., 2022a). Leading companies such as Microsoft and Alphabet (formerly Google) have switched from stock options to RSUs in response to this regulatory change, suggesting that RSUs are effective in driving long-term performance and reducing accounting burdens.

Follow-up studies showed that RSUs contribute to improving the quality of financial reporting and reducing earnings management (Choi et al., 2023) and induce long-term performance through employees' behavioral adjustment and psychological satisfaction (Murphy & Vance, 2019b). On the other hand, the vesting conditions of RSUs were pointed out as a disadvantage in that they increase the administrative burden and can distort performance measurement depending on external market factors (X.-L. Chen et al., 2022b).

2.2. The Global Status and Stages of RSUs' Introduction

The introduction of RSUs can be divided into four stages according to the company's compensation system and strategic goals. This is divided into the following four phases: (1) the Exploration Phase, (2) the Expansion Phase, (3) the Maturity Phase, and (4) the Optimization Phase (Yang, 2024). Each phase describes the process of introducing and developing RSUs within a company. This allows you to understand the impact of RSUs on a company's compensation strategy and performance metrics at each stage.

- Exploration Phase

In the Exploration Phase, RSUs are introduced on a small scale and on a trial basis, mainly for some key management or senior personnel. At this stage, the impact of RSUs on actual performance is observed and whether to expand them company-wide is reviewed. In addition, the compensation system is reviewed overall, the RSU policy is piloted, and internal opinions are collected. This is a stage that is mainly applicable to startups that are exploring new performance-based compensation systems or companies that are considering switching from existing stock options to RSUs.

Bhagat and Romano (2016b) pointed out that equity-based compensation is effective in inducing long-term accountability among management and explain that the initial introduction of RSUs can help mitigate management's risk-taking. Additionally, according to Jensen and Meckling's (1976) agency theory, the initial stage of introducing RSUs is the first step in implementing a compensation system to align management's goals with shareholders' interests.

- Expansion Phase

In the Expansion Phase, the scope of application of RSUs is expanded company-wide to provide all employees and management with RSUs. At this stage, RSUs are used as a key tool in talent attraction and retention strategies and play a central role in equity-based compensation schemes. Large companies in Japan, such as Toyota, Sony, and Softbank, are representative examples of companies that have actively introduced RSUs to respond to the global competitive environment.

H. Chen et al. (2022a) found that RSUs are more effective than traditional stock options in inducing long-term performance and analyzed that RSUs contribute to increasing the fairness and transparency of the compensation system when they are expanded to various levels of the organization in the diffusion phase.

- Maturity Phase

The maturity phase is the period when RSUs become the company's main compensation system and act as a key element in connecting the interests of shareholders and management. At this stage, the vesting conditions and performance indicators of RSUs

are clearly linked to establish a clear relationship between compensation and performance. Large companies in Europe, such as LVMH and SAP, have reached this stage by closely linking RSUs to long-term performance management and stock price appreciation.

A study by Choi et al. (2023) pointed out that RSUs are effective in improving the quality of financial reporting and reducing earnings manipulation, while Murphy and Vance (2019a) mentioned that RSUs encourage employees' long-term performance participation and contribute to reducing the sale of shares for short-term liquidity.

- Optimization Phase

The Optimization Phase is the period when the introduction of RSUs is fully established and the operating method is continuously adjusted according to corporate strategy and market changes. At this stage, a customized compensation structure is introduced and RSUs are combined with other compensation systems to optimize the organization's performance and compensation system. Apple, Google, and Microsoft in the United States are examples of companies that have combined cash compensation with RSUs to increase employee satisfaction and maximize the long-term performance-inducing effect of RSUs.

Jia (2023) noted that the combination of RSUs and cash compensation plays an important role in increasing employee satisfaction and improving the company's financial performance. This customized approach opens up the possibility of more sophisticated adjustments to a company's compensation strategy.

- Regional Maturity and Utilization of RSUs' Adoption

The maturity of RSUs varies by region. The US went through the Exploration Phase from 2003 to 2008 and the Expansion Phase from 2009 to 2015 and is now in the Optimization Phase. In the US, RSUs are widely used as long-term incentives, and their effectiveness is maximized by combining them with cash compensation in a customized compensation structure. On the other hand, although the rate of adoption of RSUs in Europe is somewhat slower, their use is increasing as large companies such as SAP use RSUs to strengthen management accountability, build a link between performance and compensation, and so on. In Japan, stock options have traditionally been used as the main compensation system, but the introduction of RSUs is gradually expanding as global competition intensifies and the importance of attracting talent emerges. Large companies such as Toyota, Sony, and SoftBank are working to establish a performance-based compensation system by linking long-term performance and share price growth through RSUs.

2.3. The Importance of EPS

EPS is calculated by dividing a company's net profit by the number of outstanding shares and is a key indicator that directly reflects the profitability that shareholders receive from the company. This provides important evidence for assessing the impact of long-term performance compensation schemes such as RSUs on a company's financial performance and shareholder value. While other indicators are limited to showing the overall performance of a company, EPS is considered to be an indicator that can clearly show the profit that shareholders directly receive.

EPS is also useful in that it can efficiently represent a company's actual profit-generating ability. This has the advantage of being able to evaluate cost reduction or profit maximization strategies that cannot be reflected in indicators such as sales or operating profit. EPS is suitable for assessing the impact of the introduction of RSUs on a company's pure profitability by showing pure profit that includes all costs, such as debt interest expenses and taxes. Filbeck et al. (2013b) pointed out that EPS is closely linked to major financial strategies, such as share buybacks, dividend policies, and leverage use, and emphasized the importance of EPS in analyzing the effects of introducing RSUs.

Moreover, EPS is an indicator that can fairly compare the performance of companies with different capital structures by taking into account the number of shares issued. Even for companies with the same net income, EPS can vary depending on the number of shares issued, which plays an important role in identifying companies that are more valuable to shareholders. On the other hand, indicators such as sales and operating profit do not reflect differences in company size, which can give an excessive advantage to large companies. EPS is considered a measure that can fairly compare corporate performance by compensating for these limitations.

EPS is closely linked to the stock price and is used as an important indicator for evaluating corporate value. In particular, EPS is used as an essential basis for investors to determine whether the stock price is reasonable in relation to the EPS through the price-to-earnings ratio (P/E ratio). Tamimi and Sebastianelli (2017) noted that the EPS serves as a clear indicator of the relationship between a company's stock price and profitability and that the introduction of RSUs is suitable for assessing the impact of increasing a company's stock value and shareholder value.

EPS is also useful for evaluating the efficiency of management's use of resources. For example, if EPS decreases despite increased sales, this may indicate a failure to control costs or dilution of shareholder value due to additional share issuance. Also, EPS is sensitive to changes in the capital structure, such as the issuance of shares and the purchase of treasury stock, making it useful for analyzing the impact of changes in the capital structure on corporate performance after the introduction of RSUs. Bhagat and Romano (2016c) demonstrated that EPS is a good indicator of the sensitivity of capital to such fluctuations.

In addition, EPS is an indicator that can track long-term net income changes rather than short-term stock price fluctuations, making it suitable for evaluating the long-term effects of introducing RSUs. Vijh and Yang (2007) confirmed that EPS is useful for assessing the relationship between a company's strategic decision-making and long-term financial performance, and changes in EPS can be used to quantitatively analyze whether long-term profitability has improved since the introduction of RSUs.

Finally, EPS is closely linked to dividend policy. Companies generally use EPS as a basis for determining their dividend payout ratio. Therefore, if the introduction of RSUs has increased EPS, it increases the likelihood of paying higher dividends to shareholders and it means that RSUs have contributed to increasing shareholder value.

In conclusion, EPS is directly linked to shareholder returns and is an indicator that can simultaneously consider a company's net profit efficiency, capital structure, and stock value. It is also an essential tool for verifying the long-term effects of RSUs as a tool for systematically analyzing corporate performance based on long-term data.

2.4. Using EPS as a Metric for Verifying RSUs' Performance

Using EPS as a validation metric to evaluate the impact of introducing RSUs is a valid approach suggested in the various literature. EPS is considered an appropriate indicator for assessing the long-term effects of RSUs because it represents the profitability that directly accrues to shareholders as the net income of a company divided by the number of shares. EPS evaluates the real profitability of a company from the perspective of shareholders and is a reliable measure of how much a company has increased shareholder value since the introduction of RSUs.

Platikanova (2008) explained that EPS is a clear indicator of a company's ability to generate net income and is suitable for evaluating the results of long-term performance-based compensation systems such as RSUs. In particular, EPS is used as an important indicator because, unlike other financial indicators, it can comprehensively reflect the company's stock issuance structure and cost-saving effects to show the real impact of RSUs.

Additionally, Filbeck et al. (2013a) emphasized that the EPS is closely related to the stock price and that RSUs are suitable for assessing the impact of equity value.

While previous studies discussed the positive impact of RSUs on corporate performance, most of them analyzed the effects of RSUs indirectly through other indicators such as stock price, sales, and operating profit rather than directly verifying EPS. For example, Murphy and Vance (2019c) argued that RSUs induce long-term performance, alleviate short-term performance pressure, and enhance financial stability. X. Zhang et al. (2017b) explained that RSUs are effective in improving the quality of financial reporting and increasing shareholder value and indirectly suggested that these effects can be evaluated through financial indicators such as EPS. However, these studies have limitations in that they discussed the effects of RSUs, focusing on the EPS, rather than systematically verifying them.

There are several reasons why EPS is superior to other metrics in measuring the impact of RSUs. Metrics such as sales or operating profit are sensitive to external environmental factors (e.g., inflation, interest rates, etc.), which may under- or overstate the actual impact of RSUs. EPS, on the other hand, is evaluated as an indicator that can clearly show the effects of introducing RSUs under the control of external variables by directly reflecting the net profit of the company. EPS also plays an important role in analyzing the long-term performance of RSUs. According to a study by Vijh and Yang (2007), the EPS is an indicator of a company's long-term profitability, showing that compensation systems such as RSUs can be linked to a structure that promotes the long-term financial stability of the company.

On the other hand, there are limited studies that directly verified the impact of RSUs on EPS, and most studies analyzed the effects of introducing RSUs for a short period of time on a small number of companies in a specific region or industry. Such studies often focused on metrics other than EPS or did not sufficiently examine the long-term performance of RSUs.

This study complements the limitations of the existing literature and provides originality through the following distinctions. First, this study systematically verified the direct relationship between RSUs and EPS to derive the impact of RSUs on EPS. Second, we controlled external factors such as inflation, interest rates, and economic growth rates to clearly verify the independent effects of RSUs. Third, the study used S&P 500 company data to present results based on a broader sample than previous studies and analyzed changes in mid- to long-term performance after the introduction of RSUs to reexamine the effects of RSUs from a long-term perspective.

3. Research Methods

3.1. Research Data

This study extracted 27 years of financial and stock-related data from the Bloomberg Finance database for 440 companies (as of 2023) from 1997 to 2023, excluding the financial sector, from the companies included in the S&P 500, and analyzed the impact of the introduction of RSUs on the EPS of companies.

The reason for selecting data from S&P 500 companies is that the data of companies included in the S&P 500 level provide a data environment and characteristics suitable for RSU research. These companies comply with the strict accounting standards and disclosure requirements of the United States and systematically disclose information related to financial performance and management strategies. This transparency and standardization of data provide a reliable basis for the long-term analysis of the effects of RSU adoption and play an important role in increasing the objectivity and reliability of research (Tamimi & Sebastianelli, 2017). Moreover, S&P 500 companies maintain a stable position in mature markets and adopt management strategies that emphasize gradual innovation and long-

term performance. This provides an optimal research environment to confirm that RSUs can effectively work to promote long-term stability and sustainability beyond short-term performance (Vijh & Yang, 2007).

Another reason for setting S&P 500 companies as the research target is that these companies are used as a global benchmark. S&P 500 companies represent the US economy and the management style of mature conglomerates and are used as an important benchmark by investors and researchers. This will further enhance the academic and practical applicability of the RSU adoption effect analysis. In particular, the financial data of S&P 500 companies provide in-depth insights into how RSUs change the long-term performance and shareholder value of mature large companies (Filbeck et al., 2013b).

This study excluded financial companies from the analysis. Financial companies have complex profit structures and are subject to strong financial regulations. This characteristic can cause confusion in clearly measuring the impact of reward schemes such as RSUs on corporate performance (Tamimi & Sebastianelli, 2017). In addition, the interests of the financial sector are mainly based on financial assets and investment returns, which can lead to distortions when comparing EPS analysis with other industries. Therefore, by excluding the financial sector, this study sought to ensure consistency and reliability in the analysis (Filbeck et al., 2013b).

On the other hand, the reason why small companies such as startups were not included in the research subjects is that there are limitations in analyzing the long-term effects of RSUs. Startups operate in a high-risk, high-growth environment and tend to prioritize expanding market share and attracting investment in the short term. In contrast, RSUs are designed as a compensation system that encourages management behavior to create long-term shareholder value and strengthens risk aversion, which is not suitable for the management environment of startups (Vijh & Yang, 2007). Furthermore, startups are often subject to high financial uncertainty in the early stages and have little or no net income, making it difficult to analyze those using indicators such as EPS. EPS is the net income of a company divided by the number of shares, which is suitable for measuring stable profitability and sustainable performance, but it is difficult to accurately analyze the effects of RSUs because the financial data of startups a highly volatile and unreliable (Platikanova, 2008).

What is more, startups often use stock options as their main compensation system. Stock options provide compensation based on the future value of the stock and are suitable for the high-risk, high-reward structure of startups. On the other hand, RSUs are a compensation system that emphasizes long-term stability and predictability, which is not in line with the characteristics of a startup. Consequently, RSUs may not be effective in achieving the expected performance in startups and are less suitable for analyzing their impact (Filbeck et al., 2013a).

For this reason, in this study, which aimed to verify the effects of RSUs through changes in mid- to long-term EPS, the research subjects were limited to S&P 500 companies that value stability and sustainability. Startups have short lifespans and frequently change their management strategies, and a significant number of startups fail in the early stages or fail to grow into large companies. This characteristic makes it difficult to secure long-term data, and it also causes limitations in analyzing the long-term effects of RSUs.

3.2. Research Hypothesis and Model

This study analyzed the impact of RSU introduction on company EPS changes and set a hypothesis to verify whether the effect of RSU introduction strengthens over time. This hypothesis aims to assess the impact of RSU introduction on EPS by analyzing different aspects of the introduction period while controlling for exogenous variables.

The following hypotheses were formulated in order to ascertain the impact of RSUs on EPS.

Hypothesis 1 (H1): *There is expected to be a significant difference between the sum of EPS for the five years prior to the introduction of RSUs and the sum of EPS for the five years after the introduction of RSUs.*

Hypothesis 2 (H2): *There is expected to be a significant difference between the sum of EPS for the 10 years prior to the introduction of RSUs and the sum of EPS for the 10 years after the introduction of RSUs.*

To verify these hypotheses, the EPS of a company was compared five and ten years before and after the introduction of RSUs, and the statistical method used was the paired sample *t*-test. The matched-samples *t*-test was unable to set independent or control variables, thus necessitating the use of actual EPS to eliminate the effects of inflation factors, thereby enhancing the study's reliability. Real EPS can be calculated as follows:

$$\text{Real EPS} = \text{Nominal EPS} \div (1 + \text{Nominal Inflation})$$

It is conceivable that EPS may appear to rise during periods of high inflation, but this may be an optical illusion caused by inflation rather than a genuine improvement in performance. Furthermore, 10 years of data were used to measure the five years before and after the introduction, and 20 years of data were used to measure the 10 years before and after the introduction. Given the extended time frame, it was imperative to meticulously examine the impact of inflation on EPS.

- Analysis of the impact of the introduction of RSUs on EPS Hypothesis

In order to verify that RSUs are more effective in the long term, a hypothesis was established to compare the EPS change of companies that introduced RSUs for 1–5 years with those that did not and to compare the EPS change of companies that introduced RSUs for 6–10 years with those that did not.

Hypothesis 3 (H3): *There is expected to be a significant difference between the sum of EPS for five years without RSUs and the sum of EPS for five years during 1–5 years after the introduction of RSUs.*

Hypothesis 4 (H4): *There is expected to be a significant difference between the sum of EPS for five years without RSUs and the sum of EPS for five years during 6–10 years after the introduction of RSUs.*

This study used hierarchical regression to test the hypotheses stated above. Additionally, to introduce RSUs, financial and macroeconomic indicators known to affect EPS were added as independent variables to consider external variables that may affect EPS. Financial indicators include operating profit, total assets, sales, and ROA (return on assets), while macroeconomic indicators include inflation, interest rates, and economic growth. These variables were reported to have a significant relationship with EPS in previous studies.

For example, Sunartiyo (2018) reported that inflation can affect a company's EPS and stock price, with EPS having a positive impact on stock price (Sunartiyo, 2018). Moreover, A. Wijaya et al. (2021a) analyzed that interest rates have a significant impact on EPS and that the lower the interest rate, the lower the cost of financing for the company and the more likely it is to increase EPS (H. Wijaya et al., 2021b).

As for operating profit, Leibowitz and Kogelman (2022a) presented the impact of operating profit on a company's operating leverage and EPS, explaining that an increase in operating profit can lead to an increase in EPS (Leibowitz & Kogelman, 2022b). Meanwhile, Panggabean et al. (2021) emphasized that EPS reflects the operating performance of a company and is closely related to stock prices (Panggabean et al., 2021).

As for ROA, N. Senewe et al. (2021a) reported that ROA can have a positive impact on EPS and stock prices and that the higher a company's return on assets, the higher its EPS (P. Senewe et al., 2021b). This suggests that ROA reflects the efficiency of a company's asset utilization and is an important determinant of EPS.

As for economic growth, Hsu et al. (2022) reported that the relationship between EPS growth and economic growth has a significant impact on investors' stock returns' forecasts by country and pointed out that, even if the economic growth rate is high, stock market returns may be low if EPS growth is low (Hsu et al., 2022).

This study analyzed the independent and aggregate effects of each variable on EPS through a hierarchical regression analysis that included these variables. Financial and macroeconomic data were collected for 27 years from 1997 to 2023, and key financial data (sales, operating profit, and total assets) were obtained from corporate disclosures (SEC filings) and the Bloomberg database. Macroeconomic indicators (inflation, interest rates, and economic growth) were collected from the World Bank and IMF databases.

The key to this analysis was that the introduction of RSUs was added as an independent variable (dummy variable) to analyze the explanatory power of the effect of the introduction of RSUs. In the first stage of the analysis, we analyzed only financial variables and macroeconomics as independent variables, excluding RSUs, and in the second stage, we added the introduction of RSUs as an independent variable to see if it improved the explanatory power. This verified the impact of the introduction of RSUs on EPS. Table 2 presents the financial and macroeconomic indicators used in this study.

Table 2. Financial and macroeconomic indicators.

Category	Details
Financial Indicators	Operating profit, ROA, Total Assets, Revenue
Macroeconomic Indicators	Inflation, Interest Rate, Economic Growth Rate

3.3. Additional Validation of Research Results

This study also conducted a robustness analysis to more precisely assess the impact of RSU adoption on corporate performance. While EPS was used as an important indicator of corporate performance in previous studies, some critics (Platikanova, 2008) have argued that EPS is subject to the influence of various factors, including a company's accounting policies, share issuance and repurchase, and dividend policies, and thus requires further verification to improve the reliability of the study.

Therefore, in this study, we performed an alternative variable robustness analysis by changing the dependent variable from EPS to operating profit and further conducted a hierarchical regression analysis with the same data to verify whether the pattern of improved explanatory power (R^2) remains consistent. Operating profit is a direct reflection of a company's intrinsic profitability and operational efficiency and can be a reliable measure of a company's performance (Leibowitz & Kogelman, 2022a). In previous studies, operating profit was also used as a key variable to explain the relationship between a companies's operating leverage and EPS growth, and it was emphasized that it is useful for measuring a company's ability to continuously generate profits (P. Senewe et al., 2021b).

In the additional analysis, the following two comparisons were made.

First, to verify H3, the impact of RSU introduction on improving corporate profitability was evaluated by comparing the operating profit of companies that introduced RSUs with the operating profit of companies that did not introduce RSUs for five years.

Second, to verify H4, the impact of RSU adoption on long-term profitability improvement was verified by measuring the operating profit of companies that adopted RSUs for 6–10 years and comparing it with the operating profit of companies that did not adopt RSUs for the same period (5 years).

Hierarchical regression analysis was conducted twice to verify H3 and H4 as follows.

Model 1: The basic model was constructed by setting only macroeconomic variables (inflation, interest rates, and economic growth) and financial variables (sales, ROA, total assets, and operating profit) as independent variables. This controlled the impact of the macro environment and internal financial factors on operating profit H. Wijaya et al., 2021b).

Model 2: We added the introduction of RSU to the above model to evaluate the independent impact of RSU introduction on operating profit and verify whether the explanatory power (R^2) improved.

4. Result

4.1. Hypothesis Analysis Result

First, an analysis was conducted to examine the effects before and after the introduction of RSUs. A paired sample *t*-test was performed on 140 companies that had 20 years of EPS data available to assess the impact on EPS one to five years before and after the introduction of RSUs.

Table 3 presents the results of the paired sample *t*-test for H1.

Table 3. Paired sample *t*-test for H1.

Category	Paired Difference			95% CI		t	df	*p*-Value (Two-Tailed)
	Mean	SD	SEM	LL	UL			
RSUs (5 Years Before–After)	4.887	27.209	2.300	9.433	0.339	2.125	139	<0.05

The mean difference in the average EPS before and after the introduction of RSUs was 4.887, with a t-value of 2.125 and a significance probability of $p < 0.05$, which is interpreted as a significant result.

Table 4 presents the results of the paired sample *t*-test for H1.

Table 4. Paired sample *t*-test for H2.

Category	Paired Difference			95% CI		t	df	*p*-Value (Two-Tailed)
	Mean	SD	SEM	LL	UL			
RSUs (10 Years Before–After	21.427	48.570	4.105	29.543	13.310	5.220	139	<0.001

The mean EPS before and after the introduction of RSUs was 21.427, and the t-value for this difference was 5.220 with a significance probability of $p < 0.001$, which translates into a highly statistically significant result.

Both H1 and H2 showed statistically significant results, but H2 was statistically more significant than H1 (H2 with $p < 0.001$ and H1 with $p < 0.05$). The fact that the correlation between EPS and RSUs became stronger over time after the introduction of RSUs suggests that RSUs may have a positive impact on the long-term performance of a company.

While RSUs have a positive impact in the short term, they are a compensation scheme that shows more pronounced performance in the long term, suggesting that they are effective as a strategic tool for companies to increase sustainability and shareholder value. This result may show that companies should evaluate and utilize the effects of RSUs from a long-term perspective when introducing them.

To test this hypothesis, we analyzed the explanatory power of RSUs in a hierarchical regression of EPS without RSUs (N = 220), EPS 1–5 years after RSUs' introduction (N = 220), and EPS 6–10 years after RSUs' introduction (N = 220). In Model 1, we employed the financial and macroeconomic indicators delineated in previous chapter (3.2. Research hypothesis and model). In Model 2, this study included RSUs' introduction (dummy variable) to assess the enhancement in explanatory power.

Next, the hierarchical regression analysis results for H3 will be examined.

A hierarchical regression analysis was conducted to analyze the impact of the introduction of RSUs on EPS for five years without RSUs and the sum of EPS for five years during 1–5 years after the introduction of RSUs (Table 5).

Table 5. Hierarchical regression for H3.

Independent Variable	Model 1						Model 2					
	B	S.E	β	t(p)	Collinearity Statistics		B	S.E	β	t(p)	Collinearity Statistics	
					TOL	VIF					TOL	VIF
Intercept	2.413	0.322	-	7.488	-	-	1.824	0.351	-	5.196	-	-
Inflation	−7.411	9.187	−0.051	−0.807	0.512	1.954	−7.153	9.042	−0.049	−0.791	0.512	1.954
Interest Rate	−1.392	3.932	−0.026	−0.354	0.365	2.738	−1.428	3.870	−0.027	−0.369	0.365	2.738
Economic Growth Rate	−11.765	7.120	−0.117	−1.652	0.411	2.435	−11.837	7.007	−0.117	−1.689	0.411	2.435
ROA	0.008	0.004	0.099	2.147	0.965	1.036	0.008	0.004	0.104	2.292	0.965	1.037
Total Assets	0.000	0.000	0.024	0.377	0.507	1.973	0.000	0.000	0.024	0.376	0.507	1.973
Revenue	0.000	0.000	0.117	1.740	0.455	2.197	0.000	0.000	0.118	1.794	0.455	2.197
Operating Income	0.000	0.000	0.167	2.780	0.570	1.753	0.000	0.000	0.166	2.824	0.570	1.753
RSUs' Introduction							0.385	0.099	0.174	3.903	0.999	1.001
	R^2 = 0.102, Corrected R^2 = 0.087 F = 7.086, $p < 0.001$						R^2 = 0.132, Corrected R^2 = 0.116 ΔR^2 = 0.030, ΔCorrected R^2 = 0.039 F = 15.235, $p < 0.001$					
Durbin–Watson	-						1.782					

After examining the multi-collinearity among the independent variables used in the regression analysis, it was confirmed that there was no multi-collinearity problem as the tolerance of all independent variables was 0.1 or higher and the variance inflation factor (VIF) was less than 10. In addition, the Durbin–Watson statistic was 1.782, indicating that there was no problem with autocorrelation among residuals.

In Model 1, the explanatory power was analyzed by inputting major financial variables (inflation, interest rates, economic growth rate, ROA, total assets, sales, and operating profit) that could affect EPS as independent variables. The modified R^2 of Model 1 was 0.087, indicating that the analyzed variables explained about 8.7% of the EPS variation (F = 7.086, $p < 0.001$), and the regression model was statistically significant. Among the independent variables, ROA (t = 2.147, $p < 0.05$) and operating profit (t = 2.780, $p < 0.01$) were identified as variables that had a significant impact on EPS. This suggests that EPS is likely to increase as ROA and operating profit increase.

In Model 2, the impact on EPS was analyzed by introducing the adoption of RSUs as an additional independent variable. The revised R^2 increased to 0.116 with the addition of the introduction of RSUs, indicating an improvement in explanatory power by approximately 2.9% compared to Model 1. The regression model still showed a statistically significant level (F = 15.235, $p < 0.001$), and the introduction of RSUs (t = 3.903, $p < 0.001$) was found to be a significant variable affecting EPS. In particular, companies with RSUs showed a significant increase in EPS.

Next, the hierarchical regression analysis results for H4 will be examined.

A hierarchical regression analysis was conducted to analyze the impact of the introduction of RSUs on EPS for 5 years during 6–10 years after the introduction of RSUs (Table 6).

Table 6. Hierarchical regression for H4.

Independent Variable	Model 1						Model 2					
	B	S.E	β	t(p)	Collinearity Statistics		B	S.E	β	t(p)	Collinearity Statistics	
					TOL	VIF					TOL	VIF
Intercept	2.843	0.339	-	8.384	-	-	1.568	0.352	-	4.455	-	-
Inflation	−11.996	9.677	−0.080	−1.240	0.510	1.963	−10.828	9.019	−0.072	−1.201	0.510	1.963
Interest Rate	−0.724	4.150	−0.013	−0.175	0.365	2.741	−1.147	3.868	−0.021	−0.297	0.365	2.741
Economic Growth Rate	−13.579	7.507	−0.130	−1.809	0.407	2.458	−13.026	6.994	−0.125	−1.862	0.407	2.458
ROA	0.005	0.004	0.058	1.237	0.962	1.040	0.006	0.004	0.069	1.585	0.962	1.040
Total Assets	0.000	0.000	0.026	0.398	0.506	1.976	0.000	0.000	0.026	0.425	0.506	1.976
Revenue	0.000	0.000	0.106	1.552	0.454	2.201	0.000	0.000	0.109	1.717	0.454	2.201
Operating Income	0.000	0.000	0.103	1.701	0.569	1.756	0.000	0.000	0.016	1.874	0.569	1.756
RSUs' Introduction							0.814	0.099	0.353	8.250	0.998	1.002
	R^2 = 0.068, Corrected R^2 = 0.052 F = 4.603, $p < 0.001$						R^2 = 0.192, Corrected R^2 = 0.178 ΔR^2 = 0.124, ΔCorrected R^2 = 0.126 F = 68.059, $p < 0.001$					
Durbin–Watson	-						1.832					

After examining the multi-collinearity among the independent variables used in the regression analysis, it was confirmed that there was no multi-collinearity problem as the tolerance of all independent variables was 0.1 or higher and the variance inflation factor (VIF) was less than 10. Additionally, the Durbin–Watson statistic was 1.832, indicating that there was no problem with autocorrelation among residuals.

In Model 1, the explanatory power was analyzed by inputting major financial variables (inflation, interest rates, economic growth rate, ROA, total assets, sales, and operating profit) that could affect EPS as independent variables. The modified R^2 of Model 1 was 0.052, indicating that the analyzed variables explained about 5.2% of the EPS variation (F = 4.603, $p < 0.001$), and the regression model was statistically significant. Among the independent variables, ROA (t = 1.237, $p > 0.05$) and operating profit (t = 1.701, $p > 0.05$) were not significant, but they suggested the possibility of having a certain impact on EPS.

In Model 2, the impact on EPS was analyzed by introducing the adoption of RSUs as an additional independent variable. The revised R^2 increased to 0.178 with the addition of the RSU adoption, which is a result of approximately 2.9% improvement in the model's explanatory power compared to Model 1. The regression model still showed a statistically significant level (F = 68.059, $p < 0.001$), and the introduction of RSUs (t = 8.250, $p < 0.001$)

was found to be a very significant variable affecting EPS. In particular, companies with RSUs introduced showed a significant tendency for EPS to increase.

The results of H3 and H4 demonstrate that the presence of RSUs is a significant explanatory factor for the variation in the dependent variable, EPS. A comparison of Models 1 and 2 indicates that the R^2 value increased by 3 percentage points from 0.102 to 0.132 in Model 3 and by approximately 12.4 percentage points from 0.068 to 0.192 in Model 4. This finding suggests that, in Model 4, the inclusion of RSUs provides a more robust explanation for the variation in EPS.

The augmented increase in R^2 observed in Model 2 of H4 can be attributed to the five-year data set employed in H4, which spans the six-to-ten-year period following the introduction of RSUs. This data set was more effective than the five-year data set used in H4, which covered the one-to-five-year period after the introduction of RSUs. This observation suggests that RSUs may exert a more pronounced positive influence on EPS over an extended timeframe.

4.2. Additional Validation Result

To complement the studies above that verify the performance of a company based on EPS with or without the introduction of RSUs, we conducted a hierarchical accounting analysis by replacing the dependent variable from EPS to operating profit.

H3 Supplementary Analysis: Analysis of operating profit for five years in the case of no introduction of RSUs and operating profit for five years in the case of introduction of RSUs.

A hierarchical regression analysis was conducted to analyze the impact of the introduction of RSUs on operating profit (Table 7). After examining the multi-collinearity among the independent variables used in the regression analysis, it was confirmed that there was no multi-collinearity problem as the tolerance values for all independent variables exceeded 0.1, and the variance inflation factor (VIF) remained below 10. In addition, the Durbin–Watson statistic was 1.941, indicating that there was no problem with autocorrelation among residuals.

Table 7. Hierarchical regression analysis (operating profit) for H3 supplementary analysis.

Independent Variable	Model 1						Model 2					
	B	S.E	β	t(p)	Collinearity Statistics		B	S.E	β	t(p)	Collinearity Statistics	
					TOL	VIF					TOL	VIF
Intercept	7.945	0.405	-	19.621	-	-	7.428	0.441	-	16.830	-	-
Inflation	7.132	11.558	0.039	0.617	0.515	1.942	6.614	11.468	0.036	0.577	0.515	1.942
Interest Rate	2.403	4.932	0.036	0.487	0.370	2.700	2.502	4.893	0.038	0.511	0.370	2.700
Economic Growth Rate	−1.489	8.966	−0.012	−0.166	0.410	2.441	−1.911	8.896	−0.015	−0.215	0.409	2.442
ROA	0.001	0.005	0.008	0.181	0.962	1.039	0.001	0.005	0.013	0.291	0.961	1.041
Total Assets	0.000	0.000	0.077	1.261	0.548	1.826	0.000	0.000	0.076	1.253	0.547	1.827
Revenue	0.000	0.000	0.253	4.133	0.552	1.813	0.000	0.000	0.254	4.189	0.552	1.813
RSUs' Introduction							0.355	0.126	0.128	2.827	0.998	1.002
	R^2 = 0.098, Corrected R^2 = 0.086 F = 7.943, $p < 0.001$						R^2 = 0.115, Corrected R^2 = 0.100 ΔR^2 = 0.017, ΔCorrected R^2 = 0.014 F = 8.060, $p < 0.01$					
Durbin–Watson	-						1.941					

In Model 1, the explanatory power was analyzed by inputting major macroeconomic variables (inflation, interest rates, and economic growth rate) and financial variables (ROA, total assets, and revenue) that could affect operating profit as independent variables. The modified R^2 of Model 1 was 0.086, indicating that the analyzed variables explained about 8.6% of the variation in operating profit (F = 7.943, $p < 0.001$), and the regression model was statistically significant. Among the independent variables, sales (t = 0.133, $p < 0.001$) was confirmed as a variable that significantly affects operating profit. This suggests that, as sales increase, the company's operating profit is likely to increase as well.

In Model 2, the introduction of RSUs was added as an additional independent variable to analyze the impact on operating profit. The modified R^2 increased to 0.100 with the addition of the introduction of RSUs, which is a 1.4% increase in explanatory power compared to Model 1. The regression model still showed a statistically significant level (F = 8.060, $p < 0.01$), and the introduction of RSUs (t = 2.827, $p < 0.01$) was found to be a significant variable affecting operating profit.

H4 Supplementary analysis: Analysis of operating profit for five years in the case of no RSUs and operating profit for five years for six to ten years in the case of RSUs.

A hierarchical regression analysis was conducted to analyze the impact of the introduction of RSUs on operating profit (Table 8). After examining the multi-collinearity among the independent variables used in the regression analysis, it was confirmed that there was no multi-collinearity problem, as the tolerance limit of all independent variables was 0.1 or higher and the variance inflation factor was less than 10. In addition, the Durbin–Watson statistic was 1.881, indicating that there was no problem with autocorrelation among residuals.

Table 8. Hierarchical regression analysis (operating profit) for H4 supplementary analysis.

Independent Variable	Model 1						Model 2					
	B	S.E	β	t(p)	Collinearity Statistics		B	S.E	β	t(p)	Collinearity Statistics	
					TOL	VIF					TOL	VIF
Intercept	8.248	0.386	-	21.360	-	-	7.192	0.409	-	17.570	-	-
Inflation	1.929	11.038	0.011	0.175	0.507	1.971	1.667	10.607	0.010	0.157	0.507	1.971
Interest Rate	1.935	4.723	0.031	0.410	0.366	2.730	1.828	4.539	0.029	0.403	0.366	2.730
Economic Growth Rate	0.094	8.549	0.001	0.011	0.407	2.458	−0.278	8.216	−0.002	−0.034	0.407	2.458
ROA	0.000	0.004	0.001	0.012	0.964	1.037	0.001	0.004	0.010	0.220	0.963	1.039
Total Assets	0.000	0.000	0.061	0.994	0.546	1.832	0.000	0.000	0.059	1.001	0.546	1.832
Revenue	0.000	0.000	0.279	4.582	0.550	1.818	0.000	0.000	0.280	4.789	0.550	1.818
RSUs' Introduction							0.709	0.116	0.266	6.109	0.999	1.001
	R^2 = 0.105, Corrected R^2 = 0.093 F = 8.603, $p < 0.001$						R^2 = 0.176, Corrected R^2 = 0.163 ΔR^2 = 0.071, ΔCorrected R^2 = 0.070 F = 13.318, $p < 0.001$					
Durbin–Watson	-						1.881					

In Model 1, the explanatory power was analyzed by inputting major macroeconomic variables (inflation, interest rates, and economic growth rate) and financial variables (ROA, total assets, and revenue) that could affect operating profit as independent variables. The corrected R^2 for Model 1 was 0.093, indicating that the analyzed variables explained about 9.3% of the variation in operating profit (F = 8.603, $p < 0.001$), and the regression model was statistically significant. Among the independent variables, sales (t = 4.582, $p < 0.001$)

was confirmed as a variable that significantly affects operating profit. This suggests that, as sales increase, the operating profit of the company is also likely to increase.

In Model 2, the introduction of RSUs was added as an additional independent variable to analyze the impact on operating profit. The modified R^2 increased to 0.163 with the addition of the introduction of RSUs, which is a 7.0% increase in explanatory power compared to Model 1. The regression model still showed a statistically significant level ($F = 13.318$, $p < 0.001$), and the introduction of RSUs ($t = 6.109$, $p < 0.001$) was found to be a significant variable affecting operating profit.

As a result of the study conducted using hierarchical regression analysis, hypotheses H3 and H4 were verified, and it was found that the introduction of RSUs had a significant impact on a company's EPS. In particular, it was confirmed that the effect was stronger in the 6th to 10th years than in the 1st to 5th years after the introduction of RSUs. This is a result that is consistent with existing research (Bhagat & Romano, 2016c), which shows that RSUs may act as a cost burden in the short term, but over time, they align the interests of management and employees and encourage long-term performance.

In addition, this study conducted the same analysis by setting operating profit as an alternative variable instead of EPS and found that similar patterns were obtained. In other words, it was proven that the introduction of RSUs had a positive impact not only on EPS but also on the company's actual profitability (operating profit) and that the long-term performance improvement effect was particularly more pronounced.

These findings suggest that RSUs can function as a strategic incentive system that improves a company's long-term financial performance, rather than just a means of compensation. Therefore, companies need to design RSUs as a key element of a compensation system for long-term value creation, rather than as a means of short-term performance compensation, and this study emphasizes the importance of combining long-term performance-linked strategies to maximize the effectiveness of RSUs.

5. Discussion

This study contributes to the existing research by empirically verifying the impact of RSUs on a company's financial performance, especially EPS. The results of the study tended to be consistent with previous studies that found that RSUs play a positive role in creating long-term value for companies. Bhagat and Romano (2016a) and W. Zhang et al. (2017a) argued that RSUs increase the cost burden in the short term, but over time, they align the interests of management and employees to promote long-term corporate performance. In this study, too, the effect was stronger in the sixth to tenth years than in the first to fifth years after the introduction of RSUs, which is consistent with existing research findings that RSUs contribute to the long-term financial stability and sustainability of companies over time.

In particular, as in previous studies (Murphy & Vance, 2019b) that highlighted the positive effects of RSUs on long-term corporate performance, this study also found that the introduction of RSUs does not show a clear performance difference in the short term, but in the long term, it shows a significant improvement in both EPS and operating profit. This suggests that RSUs are not just a means of providing short-term incentives but can act as a strategic element that strengthens a company's internal performance-based compensation system and supports sustainable management. Furthermore, Filbeck et al. (2013a) argued that a company's stock compensation system plays an important role in improving financial health and EPS, and this study also empirically demonstrated that RSUs can contribute to improving a company's long-term financial structure and profitability.

An important point that distinguishes this study from previous studies is that the effects of RSUs were analyzed using operating profit as an alternative variable in addition

to EPS. Previous studies analyzed the effects of RSUs mainly indirectly through indicators such as EPS and stock price volatility, and there were limited studies that directly verified the actual impact of RSUs on corporate performance. However, in this study, the same hierarchical regression analysis was performed by setting not only EPS but also operating profit as the dependent variable, and a consistent pattern was found that the introduction of RSUs had a significant impact on both variables. This is an analysis of the effects of RSUs in a way that complements the limitations of EPS raised in Platikanova's (2008) study, suggesting that RSUs have a structural effect of improving a company's actual profitability beyond the simple improvement of accounting indicators.

Furthermore, while previous studies mainly analyzed the short-term effects of RSUs, this study empirically analyzed the sustained effects of RSUs by comparing years 1–5 and years 6–10 in consideration of long-term performance changes. Sunartiyo (2018) argued that RSUs initially lead to a cost burden, but over time, they improve a company's operating efficiency and performance-based compensation system, thereby increasing long-term financial performance. This study also found that companies in the 6th to 10th years after the introduction of RSUs had higher growth rates in both EPS and operating profit, supporting the idea that RSUs contribute more to performance over time. These results suggest that RSUs can function as part of a company's sustainable growth and management strategy beyond providing short-term incentives and emphasize that they can be used as an effective compensation system for improving long-term corporate performance.

Above all, this study is unique in that it analyzes the pure effect of introducing RSUs by controlling external economic factors (inflation, interest rates, economic growth rate, etc.) that were pointed out in previous studies. Previous studies often failed to fully reflect the impact of changes in the macroeconomic environment on corporate performance analysis and, as a result, there was a possibility of underestimating or overestimating the effects of RSUs. On the other hand, this study used 27 years of S&P 500 company data to conduct analysis based on long-term data and increased the reliability of the study by considering major macroeconomic variables and financial variables (ROA, total assets, sales, etc.). This is also in line with the point made by I. Khodakevich et al. (2024b) that it is essential to control macroeconomic variables in corporate performance research.

These findings suggest that RSUs can function as a strategic incentive system that improves a firm's long-term financial performance beyond a simple means of compensation. This provides empirical support for the argument made by Tamimi and Sebastianelli (2017) that RSUs can play an important role in improving not only short-term financial performance but also firm and shareholder value. Therefore, companies need to design RSUs as a core compensation system for long-term value creation rather than short-term performance rewards, and it is important to implement long-term performance-linked strategies to maximize the effectiveness of RSUs. This study empirically demonstrates that RSUs can be an effective compensation system for enhancing corporate sustainability and strengthening long-term financial performance.

6. Conclusions and Future Research Agenda

This study analyzed the impact of RSUs on EPS from a mid- to long-term perspective, proving that RSUs are an important tool for increasing corporate performance and shareholder value. It showed that RSUs are not just a simple compensation system but play an important role in helping companies increase their long-term value and can become a component of management strategy.

The analysis showed that the increase in EPS after the introduction of RSUs was statistically significant, suggesting that RSUs can contribute to enhancing corporate value. In particular, RSUs are designed to achieve long-term goals, so vesting conditions en-

courage management and employees to focus on long-term performance rather than short-term profit, which differentiates them from existing short-term performance-oriented compensation systems. However, although it was pointed out that the performance of RSUs may be insufficient or limited in the early stages of their introduction, this can be overcome by combining them with performance management strategies to compensate. This suggests that RSUs can produce optimal results when integrated with sustainable management strategies.

In addition, this study precisely evaluated the effect of introducing RSUs by using real EPS while controlling exogenous variables such as inflation, interest rates, and economic growth rates. Although these exogenous variables may distort the effects of RSUs, this study controlled for them to analyze the pure effects of RSUs. As a result, it confirmed that RSUs are a strategic tool that can contribute to improving corporate value and provide important practical and academic implications.

In practice, RSUs have proven to be an effective system that can overcome the limitations of a company's short-term performance-oriented compensation system and lay the foundation for long-term and sustainable growth. RSUs enable companies to align the actions of management and employees with long-term goals and create a management environment that supports sustainable growth. RSUs are designed based on long-term performance and play an important role in increasing shareholder value, enabling the company to meet both internal performance and shareholder expectations. Additionally, by empirically examining the impact of RSUs on key performance indicators such as EPS, the study provides evidence to better understand the impact of RSUs on increasing corporate value.

This study makes the following contributions to the academic community. First, this study empirically analyzed the impact of the introduction of RSUs on a company's mid- to long-term EPS to identify a clear relationship between RSUs and corporate value. This is a different approach from previous studies that focused on short-term effects or specific cases. In this respect, this study reinforces the academic evidence that RSUs are effective as a tool for long-term performance management.

Second, this study thoroughly controlled external variables to analyze the pure effect of RSUs. This provides a methodological contribution to the evaluation of the effectiveness of compensation systems, as it verifies the independent impact of RSUs by eliminating the impact of external economic factors, such as inflation, interest rates, and economic growth rates, on corporate performance.

Third, this study provides basic data that will facilitate research on the global applicability of RSUs. Due to economic and cultural differences by country, the effects of RSUs may vary, reflecting regional characteristics. This study analyzed the US market, but global comparative studies will expand the potential use of RSUs and open up the possibility of presenting design plans optimized for regional characteristics based on this.

However, this study has several limitations. First, this study analyzed S&P 500 companies, but it did not reflect the characteristics of individual industries. The effects of RSUs may vary depending on the industry characteristics, so future research should include a detailed analysis by industry. Comparing and analyzing the effects of RSUs by industry will help us understand why the effects of introducing RSUs in a particular industry may be more powerful or limited. Second, this study was conducted mainly with US companies, but the effects of introducing RSUs may vary depending on the economic situation, regulatory system, and cultural factors of each country. It is necessary to conduct a global comparative study to gain a more comprehensive understanding of the effects of RSUs and to develop an optimized design of RSUs for each country or region. Third, this study focused on indicators such as EPS, but did not analyze the impact of RSUs on non-

financial performance within the organization, such as employee satisfaction, motivation, and turnover. Since RSUs may also have an important impact on organizational culture and employee behavior, further research is needed to analyze these non-financial aspects.

Furthermore, analyzing the impact of the introduction of RSUs on a company's internal management system and decision-making process within the organization can also be an important research topic. RSUs can act as a factor that changes the culture and structure of an organization beyond simply financial performance and are likely to contribute to strengthening trust and collaboration between management and employees in the long term. A qualitative study of how RSUs can contribute to these organizational aspects can also be suggested as a future research direction.

Furthermore, RSUs can play an important role in helping companies strengthen their competitiveness in the global competitive environment. In particular, in an international economic environment where uncertainty is increasing, long-term performance compensation systems such as RSUs are evaluated as strategic tools that are advantageous for companies to achieve long-term goals free from the pressure of short-term performance. RSUs show the potential to contribute in various aspects, including creating shareholder value, increasing long-term performance, increasing employee engagement, and promoting innovation within the organization. Future research will be able to suggest ways to utilize RSUs more effectively and strategically by analyzing the effects of RSUs from multiple angles, including industry, country, and organizational culture.

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