



EXAMINING THE MEDIATING EFFECT OF LEVERAGE ON THE RELATIONSHIP OF REINVESTMENT AND FIRM PERFORMANCE: NEXUS IN ASIAN EMERGING ECONOMIES

Kashif Mahmood ¹, Imran Riaz Malik ²

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Affiliations:

¹ PhD (Scholar), Department of Management Sciences, Capital University of Science and Technology, Islamabad, Pakistan
Email: kashifmahmood5970@gmail.com

² Associate Professor, Department of Management Sciences, Capital University of Science and Technology, Islamabad, Pakistan
Email: imran.riaz@cust.edu.pk

Corresponding Author's Email:

¹ kashifmahmood5970@gmail.com

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Abstract

Building on our earlier research on the mediation effect of leverage between reinvestment and firm performance for developed economies (Mahmood & Malik, 2025), now this study examines and repeats the same methodology for Asian emerging economies. By expanding the approach, it is to be checked whether the reinvestment decision in emerging markets has the same impact on firm performance as like in developed or it is different in nature and magnitude? A sample of 145 firms from Asian emerging markets, including Pakistan, India, China, Thailand, and Indonesia, were studied using panel data methods between 2015 and 2023 (9 years). The study uses return on assets as a performance indicator/dependent variable, reinvestment as an independent variable, the debt ratio as a mediator, and control parameters including business size, inflation, and GDP growth rate and the HMRA technique is used for statistical analysis. The results demonstrate that reinvestment decision plays a vital role for firm performance indirectly through debt ratio, as and while debt ratio mediates the relationship which also shows that high reinvestment slightly changes debt level and lower debt level enhances firm performance. These findings contribute to emerging economies regarding reinvestment and setting of capital structure.

Keywords: Return on Assets, Capital Structure, Leverage, Reinvestment, Debt Ratio, Business Performance.

1. Introduction

Long-term economic growth, capital allocation efficiency, and company competitiveness are all heavily influenced by firm financial strategies. However, there are significant distinctions between emerging Asian economies like China, India, Indonesia, Malaysia, Pakistan, Thailand, and Vietnam and developed Asian economies like Australia, South Korea, Singapore, and Japan. Sophisticated financial systems, deeper capital markets, more robust corporate governance structures, and easier access to a wider range of funding sources are all advantages of developed economies that allow businesses to pursue risk-management, investment, and financing strategies that maximize value. Companies in emerging economies, on the other hand, frequently deal with financial limitations, increased information asymmetry, worse institutional quality, and a larger reliance on bank-based funding, all of which can reduce strategic financial flexibility (OECD, 2025). Here the main concern is, to check whether reinvestment of own earnings in the business reduces external financing which fosters firm performance rather than giving more dividends and interest to equity



holders and debt holders or not. This whole scenario is related with capital structure choices and financial strategies.

In developed economies, corporations' leverage choices may have an effect on how well they perform. However, the debt ratio affects efficiency and profitability. Reinvestment changes the capital structure by decreasing dependence on external financing. Reinvestment strategies are connected to better business performance outcomes via a key mediating factor which is leverage (Mahmood & Malik, 2025).

According to recent data, developed Asian nations do better than their emerging counterparts when it comes to putting advanced financial strategies into practice through sophisticated bond and equities markets, effective capital allocation, and strong investor protection laws. On the other hand, emerging Asian countries have seen significant capital market development and financial depth, which has improved businesses' access to outside financing and increased investment prospects (Abraham et al., 2021; Gochoco-Bautista et al., 2014). However, financial decision-making in many developing nations is still hampered by enduring issues such as currency mismatches, shallow markets, and institutional inefficiencies (Mizen et al., 2021). Although emerging Asian economies are quickly closing this gap through continuous financial sector reforms and capital market development initiatives, the evidence generally shows that developed Asian economies continue to be superior in adopting effective financial strategies due to stronger institutional environments and more developed financial markets.

Most people agree that reinvesting business profits is a better way to increase long-term shareholder value than paying out dividends, especially for companies with lucrative growth prospects. According to the residual dividend hypothesis, businesses should finance positive net present value (NPV) initiatives with retained earnings before distributing cash to shareholders since internal financing encourages sustainable growth and reduces need on pricey outside capital (Miller & Modigliani, 1961). A vital source of finance for growth, innovation, R&D, and strategic expenditures that can boost future cash flows and company value is retained earnings. Research indicates that, particularly in growth-oriented companies, earnings held and reinvested in value-enhancing possibilities have a greater long-term impact on stock price appreciation than immediate cash dividends. Additionally, enterprises can maintain financial flexibility in unpredictable economic times by avoiding the flotation costs associated with external funding through reinvestment. Additionally, recent research shows that investors frequently favor capital gains from profitable reinvestment over dividend income since they may provide higher wealth building and tax benefits. As a result, companies with plenty of investment potential often keep a higher percentage of earnings, whereas established companies with less room for expansion are more likely to pay dividends. Reinvestment is therefore typically seen as preferable to dividend distribution in terms of enhancing business value and fostering long-term shareholder prosperity when management is able to recognize and implement advantageous investment possibilities.

In corporate finance, the decision between internal and external funding is still crucial. Because it increases financial flexibility, lowers financing costs, and decreases financial risk, reinvestment of internally produced earnings is frequently seen as a better financing option than borrowed financing. According to the pecking order hypothesis, companies favor internal funding over external financing because of knowledge asymmetry and the expenses related to issuing debt or stock (Myers & Majluf, 1984). With the help of retained earnings, businesses may finance investment possibilities without having to worry about refinancing risks, restrictive covenants, or interest payments. Relying on cash generated at home might allow the businesses to lower the transaction and agency costs of borrowing and to keep greater control over strategic decisions (Myers, 1984). Excessive debt also increases the probability of financial difficulties and financial leverage, particularly in times of economic uncertainty (Jensen, 1986). In contrast, internal finance allows firms to reinvest earnings in profitable projects with a positive net present value, thereby strengthening liquidity positions and supporting sustainable long-term growth. Empirical studies show that successful firms rely more on retained earnings and less on debt financing, a finding consistent with capital structure theories' predictions about the preference for internal funds (Rajan & Zingales, 1995). So, the reinvestment of own income is generally considered as a more effective and low-risk financing alternative than the acquisition of loan funding for the development of long-term value.



Corporate earnings should be reinvested to improve the business performance by providing local currency for productive purposes, such as operational development, technological innovation and strategic growth initiatives. The pecking order hypothesis states that because internal funds are less expensive and do not result in extra financial responsibilities, businesses prefer retained earnings over external funding (Myers & Majluf, 1984). Therefore, it is expected that efficient reinvestment programs would increase ROA by increasing how well companies use their assets to generate profits, improving overall business performance and long-term shareholder value.

The capital structure and leverage situation of a company are greatly impacted by corporate reinvestment choices. One significant source of internal funding is reinvestment, which is keeping and allocating revenues to profitable ventures as opposed to giving them to shareholders. The pecking order hypothesis states that because retained earnings avoid transaction expenses, information asymmetry issues, and financial responsibilities related to loan issuance, businesses prefer internal funds over external finance (Myers & Majluf, 1984). As a result, it is anticipated that increased profits reinvestment will lessen reliance on borrowed money and lower leverage levels, which are often gauged by the debt ratio.

The debt ratio is a key measure of financial risk and solvency. It measures the extent to which assets are financed by debts. Firms with sufficient internal resources can finance growth opportunities without taking on additional debt, which enhances their financial flexibility and decreases their exposure to interest rate changes and costs of financial distress (Myers, 1984). Moreover, according to the trade-off theory, firms compare the benefits of debt financing with the potential costs of financial distress and thus, retained earnings are the good source of financing (Kraus & Litzenberger, 1973). Empirical evidence suggests that reinvestment can be a substitute for external borrowing, as more efficient firms with higher retained earnings tend to have lower debt ratios (Rajan & Zingales, 1995). Thus, the effective reinvestment strategies are expected to influence the leverage by decreasing the dependence on the debt financing and improving the financial stability in the long run.

The efficiency of the supply chain drivers (facilities, inventory, transportation, information, sourcing and price) is becoming a major factor of success of the firms. These factors ultimately improve operational performance and profitability through improving organizational responsiveness, efficiency and resource utilization. Good management of supply chain drivers results in better financial performance and long term competitive advantage for business (Shahzadi, Amin, & Chaudhary, 2013). The correlation between ISO certification and business performance is positive as standardized quality management techniques improve operational effectiveness, product quality, customer satisfaction, and organizational competitiveness (Chaudhary, Cheema & Karni, 2012).

Financial leverage is an important factor in capital structure decisions and has a big impact on business success. Leverage is the use of debt finance to support corporate operations and investments, allowing companies to get resources that are not possible with internal capital. The trade-off hypothesis, which contends that businesses weigh the tax benefits of debt against the possible costs of a financial crisis in order to maximize company value, is the main theoretical foundation for views on leverage and performance (Kraus & Litzenberger, 1973). By offering tax shelters and disciplining managers with fixed payment responsibilities, moderate levels of leverage can improve company performance and lower agency costs (Jensen, 1986). Excessive leverage, however, may lower profitability by raising interest costs and financial risk.

One of the most popular accounting-based metrics for evaluating a company's success is return on assets (ROA), which shows how well a company can make money from all of its assets. Because debt financing may either promote operational efficiency or limit profitability through higher financing costs, the link between leverage and ROA continues to be a key concern in corporate finance. The influence of leverage on ROA is dependent on organizations' capacity to maintain optimal capital structures and make efficient use of borrowed funds (Rajan & Zingales, 1995). Therefore, assessing financial strategies that improve profitability and long-term company performance requires a knowledge of how leverage affects ROA.

2 LITERATURE REVIEW



Because it allows businesses to increase productive capacity, boost operational effectiveness, and seize growth possibilities, reinvestment is essential to improving firm performance. Businesses that invest in strategic and valued resources get long-term competitive advantages that eventually boost profitability, according to the Resource-Based View (Barney, 1991). Because retained earnings avoid flotation costs, agency disputes with outside investors, and information asymmetry problems, they are among the least expensive sources of funding (Myers & Majluf, 1984). According to studies by Higgins (1977) and Ross et al. (2019), businesses that regularly reinvest their revenues can finance internal expansion and increase their profitability in the future. Reinvestment increases productive assets and improves asset use efficiency.

Aivazian, Ge, and Qiu (2005) explored that reinvestment and company success are often found to be positively correlated in empirical studies. Investment expenditures have a favourable impact on long-term business value and profitability. In a similar vein, Biddle, Hilary, and Verdi (2009) contended that effective investment strategies enhance operational performance by directing resources toward profitable initiatives. Additionally, Mahmood and Malik (2025) discovered that reinvestment significantly improves ROA for businesses in developed economies, bolstering the claim that domestically financed expansion directly boosts profitability.

However, Agency Theory argues that over-investment problems may stem from excessive reinvestment, as managers may favour investing in projects with negative net present value for their own benefit instead of maximizing shareholders' wealth (Jensen & Meckling, 1976). Lopez-de-Foronda et al. (2019) argue that if managerial discretion is not well regulated, excessive investment can lead to lower efficiency. In this setting, however, the bulk of the empirical evidence suggests that efficient reinvestment enhances long-term growth prospects, productivity and operational effectiveness, all of which positively influence ROA. The Pecking Order Theory mostly explains the relationship between leverage and reinvestment. Businesses prefer internal funds because they reduce transaction costs and information asymmetry. Thus, it is expected that firms with large, retained earnings and opportunities for reinvestment would continue to have lower debt ratios (Myers & Majluf, 1984).

Firms do not need to borrow external loans to fund investment projects if they can generate sufficient internal cash flows. This reduces interest obligations and costs of financial distress and increases financial flexibility. According to Frank and Goyal (2003), profitable businesses often have reduced leverage because retained earnings replace borrowed funding. In a similar vein, Rajan and Zingales (1995) discovered that leverage and profitability were negatively correlated in all major developed economies.

The Pecking Order Theory is supported by Qureshi's (2009) research from Pakistan, which shows that companies with better internal finance capacities rely less on loans. Similarly, retained earnings considerably lessen a company's reliance on outside funding sources, according to Kalash (2019). According to recent research by Mahmood and Malik (2025), reinvestment dramatically lowers the debts level, indicating that businesses should progressively switch from external funding to funds generated internally. However, some research indicates that quickly expanding businesses could retain both high debt and high reinvestment since internal finances might not be enough to support growth. According to Sabal (2008), businesses that maintain goal leverage ratios may boost borrowing in addition to investments in order to foster development.

Aivazian et al. (2005) also pointed out that even with significant retained earnings, companies may need to access loan markets in order to take advantage of investment possibilities. Therefore, whereas reinvesting typically lowers the debt ratio, the connection may differ based on sector characteristics and development prospects. Overall, most empirical data points to a negative correlation between the debt ratio and reinvestment, suggesting that internally financed companies often have lower levels of leverage.

One of the most contentious issues in corporate finance literature is the effect of leverage on business performance. According to the Trade-Off Theory, debt financing increases business value since interest costs are tax deductible (Modigliani & Miller, 1963; Kraus & Litzenberger, 1973). Additionally, according to Agency Theory, debts can enhance performance by lowering free cash flow issues and punishing managers (Jensen, 1986). According to Safieddine and Titman (1999), increased leverage can boost business efficiency by compelling managers to concentrate on value-enhancing tasks. On the other hand, high leverage raises



interest obligations, bankruptcy risk, and financial distress expenses. According to Myers (1977), excessive debt levels might deter investment in lucrative projects because of issues with debt overhang. Additionally, Berger and Bonaccorsi di Patti (2006) discovered that performance above ideal levels is adversely affected by high leverage.

The detrimental impact of leverage on ROA is usually supported by empirical data from emerging economies. Sheikh and Wang (2013) discovered that among Pakistani non-financial enterprises, the debt ratio considerably lowers company profitability. Similarly, in Pakistan's engineering industry, Khan (2012) found a negative correlation between leverage and ROA. According to Javed et al. (2015), high debt financing lowers a company's profitability as interest costs take up a sizable amount of earnings.

Leverage and company performance are negatively correlated, according to research done in Nigeria by Nwude et al. (2016). Similarly, Do, Nguyen, and Nguyen (2021) noted that corporate behavior and market performance are significantly impacted by financial leverage. Nonetheless, some research has shown that mild leverage has advantages. According to Bhutta et al. (2018), debt may be used as a monitoring tool to boost business performance and management effectiveness. Harrison, Hart, and Oler (2014) suggested that moderate leverage can improve performance and discipline managers, but too much leverage can be damaging. Thus, the body of research shows that leverage and performance have a nonlinear relationship, where moderate debt may enhance efficiency, but high debt generally degrades ROA.

The importance of financing and investment decisions for firm performance has been long recognized in the corporate finance literature. Reinvestment is the number of profits kept in the business and reinvested in its operations instead of being paid out as dividends. These funds are often reinvested in capital expenditures, R&D, technological innovation, and growth projects that enhance future profitability. While the debt ratio shows how much of a company's assets are financed with debt, a common measure of a company's performance is return on assets (ROA). The main theories that explain the relationship between reinvestment, leverage and performance are Pecking Order Theory, Trade-Off Theory, Agency Theory and Resource-Based View (Modigliani & Miller, 1958; Jensen & Meckling, 1976; Myers & Majluf, 1984).

The Pecking Order Theory (Myers & Majluf, 1984) states that firms prefer internal sources of financing (retained earnings) over external sources of financing (debt or equity). As a result, the greater the reinvestment, the lower is the debt dependence, the lower the leverage, and the higher the profitability of the company. Recent empirical evidence indicates that leverage partially mediates the relationship between reinvestment and company performance, which implies that firms enhance their profitability through productive investment as well as reduced use of costly external borrowing (Mahmood & Malik, 2025).

The debt ratio's mediating role is based on the Pecking Order Theory. Because they rely less on outside capital, companies with lower debt ratios reinvest their profits. Therefore, by reducing interest expenses, bankruptcy risk, and financial distress penalties, reduced leverage increases profitability. According to recent empirical data by Mahmood and Malik (2025), the debt ratio slightly mediates the relationship between reinvestment and corporate success. According to their findings, reinvestment immediately raises ROA while reducing debt, which further enhances profitability. As a result, the debt ratio serves as a transmission mechanism that links decisions about reinvestment to company performance outcomes. According to the mediation framework, because they are less reliant on costly outside finance, businesses that invest in productive assets also perform better. Therefore, one important way that reinvestment influences the ROA measured business success is through the debt ratio.

Theoretical Implications regarding Pecking Order Theory

The pecking order idea in business finance assumes that funding orders are ranked from internal to external resources. Internal funds, loans, and fresh shares are the three main sources of finance. With the idea that equity financing is considered a last alternative in the event that all other options have failed, organizations prioritize and organize their funding sources (internal resources toward equity) in line with the pecking order concept. When internal funds run out, debt must be issued. Internal funds are used first. When it would be unwise to take on more debt, equity must be supplied. The pecking order notion, which has to do with a company's financial structure, was created by Donaldson in 1961.



The idea that managers assess and make decisions about financial resources in a methodical way was made famous in 1984 by Stewart Myers and Nicolas Majluf. Pecking Order states that managers should show the same tendency of sources to support speculative open doors: first, through retained earnings or internal firm funds; second, through debt; and finally, if all else fails, by choosing shares. The pecking order theory states that the objective is to ascertain whether there is a possibility that further internal profits will be produced and utilized to retire debt or equity, as well as whether internal profits can be reinvested to the point where the business no longer needs to hire capital, debt, or equity. Businesses can avoid the high cost of outside investment.

The following are the study's hypothesis;

H1: Reinvestment improves a company's financial performance.

H2: Leverage negatively affects firm's financial performance.

H3: Reinvestment negatively affects firm's leverage.

H4: Leverage mediates the effect of reinvestment on firm's financial performance.

3. Methodology

Based on the market classification used by Morgan Stanley Capital International (MSCI), the study divides Asian markets into developed and developing markets. Eight Asian developing markets are identified by the MSCI. The population of the study is these markets. S & P DJI defines emerging nations as:

"Markets which show relatively less accessibility but have some degree of openness for foreign investors are termed as emerging countries."

The first stage in the sample selection method used by Zada et al. (2021) is choosing the type of financial markets to include in the sample. The emerging Asian markets included by this study include China, India, Indonesia, Thailand, Korea, Malaysia, the Philippines, Taiwan, and Pakistan.

The nations from each class that will be included in the sample are chosen in the second step. Additionally, all Asian emerging economies aside from those whose indices were developed after 2001 are considered for research in this study. The exception was selected with the same time range for every market in order to offer a consistent base. Four of the eight emerging economies in Asia fit the criteria to be part of the study's sample. After November 2021, Pakistan was moved from the list of Asian emerging economies to the list of Asian frontier markets. As a result, Pakistan is also chosen since, up until 2020, it was the sole Asian emerging market among the group of Asian frontier markets.

The five Asian emerging markets are selected as China (Shanghai Composite index), Indonesia (JKSE index), India (Nifty 50 index), Thailand (SET index) and Pakistan (KSE-100 index) from the nine that are as China, India, Indonesia, Thailand, Korea, Malaysia, Philippines, Taiwan, and Pakistan. The smallest unit in these indices is India (the Nifty 50 index). These indexes were selected from the stock exchanges of relevant countries primarily because they have similar features, such as the highest market capitalization, free float, liquidity, and display of all sectors.

Andleeb et al. (2021) and Jaffari et al. (2021) created selection criteria based on corporate governance mix. The top 50 companies in each nation's selected index, determined by their highest market value in June 2024, make up the sample according to this criterion. Bigger businesses often have a more varied board of directors, which can have a bigger impact on capital structure. This diversity includes directors with varying degrees of independence, size, gender, and nationality. This is why these top 50 most capitalized companies were chosen. As a result, 250 businesses, 50 from each of the five countries are suggested from the aforementioned.

The conduct of developing economies will be the only focus of the empirical investigation. Initially, this assessment eliminated insurance, real estate, and financial companies from the sample. As bookkeeping principles and rules that are disseminated here are rather limited and vary depending on the location. Additionally, organizations with the exemption and those whose information is unavailable are not included in the examination. An evaluation of annual data spanning nine years, from 2015 to 2023, is included in the information. The study employed publicly accessible sources for firm-specific data, including Google



Finance, Yahoo Finance, Morningstar, Investing.com, Financial Times, annual reports, SEC filings, form 10K, and company websites.

Figure 1

Research Model

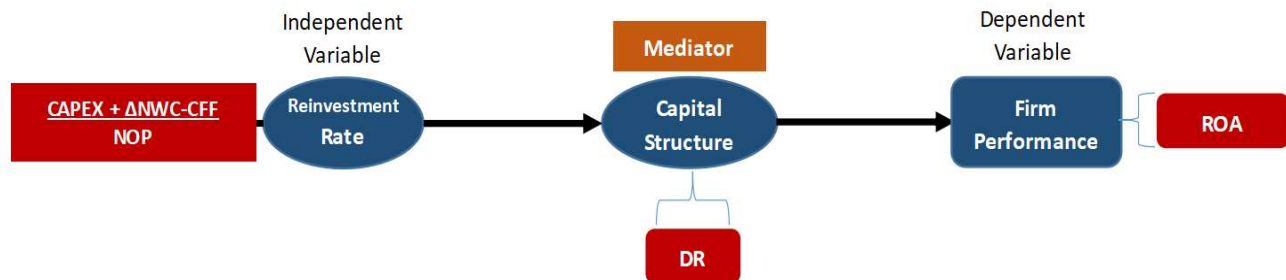


Figure 1: Leverage's mediating function in the link between reinvestment and company performance.
Source: "Developed from authors' own source"

Measurement of Variables

Financial Performance. The competence of the business to manage and control its resources is what determines its financial performance (IAI, 2007). Based on Salim and Yadav (2012), firm performance proxy was used for this analysis is as follows:

Assets Return. A company's benefit proportions are addressed by the ROA variable. This is how the ROA is handled:

$$ROA = \frac{\text{Net Income after Tax}}{\text{Total Assets}}$$

Reinvestment Rate. Reinvested Rate (RR) is moreover alluded to as maintenance proportion which can be determined by the ratio by addition of capital expenditure and change in net working capital to net operating profit, the formula is determined based on the study Figueroa et al. (2023) and it is to be processed as follows:

$$RR = \frac{CAPEX + \Delta NWC - CFF}{\text{Net Operating Profit}}$$

Leverage. Financial leverage is the process of using borrowed money, or debt, to finance the purchase of assets with the expectation that the income or capital gain from the new asset will exceed the cost of borrowing. The total debt-to-assets ratio will be used to evaluate leverage (Anozie et al., 2023). The model may be calculated and built numerically as follows.:

$$\text{Debt Ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

Control Variables. A control variable is an experimental condition or component that is maintained constant during the experiment and has no effect on the primary goal or result. According to Khemiri and Noubbigh (2018), the control variable firm size, inflation rate and GDP growth rate should be used and calculated as below,

Size of Firm	Total Assets' Natural Log (Firm level)
Inflation Rate	Measured by consumer price index (Country level)
GDPG Rate	Measured by GDPG rate (Country level)



Econometric Modelling

$$FP_{it} = \beta_0 + \beta_1 RR_{it} + \beta_2 SIZE_{it} + \beta_3 INF_{it} + \beta_4 GDPG_{it} + e_{it}$$

$$FP_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 INF_{it} + \beta_4 GDPG_{it} + e_{it}$$

$$LEV_{it} = \beta_0 + \beta_1 RR_{it} + \beta_2 SIZE_{it} + \beta_3 INF_{it} + \beta_4 GDPG_{it} + e_{it}$$

$$FP_{it} = \beta_0 + \beta_1 RR_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 INF_{it} + \beta_5 GDPG_{it} + e_{it}$$

Firm Performance (FP), which gauges a company's overall financial success using measurements like Return on Assets (ROA), is the dependent variable in this research. Leverage (LEV), The degree to which a company is leveraged with debt in its capital structure. It is usually measured as the ratio of total debt. Reinvestment (RR) is the portion of profits that the firm retains and represents the company's plan for growth and development. The control variables are firm size (SIZE, natural logarithm of total assets), gross domestic product growth rate (GDPG) and inflation rate (INF). These modifications are aimed at reducing skewness due to large variation of firm size and normalizing the data. Finally, e represents the standard error that reflects the reliability and accuracy of the predicted coefficients in the regression model.

4. Empirical Results

This paper uses hierarchical multiple regression techniques to explore the complicated relationships between firm level characteristics, leverage choices, and organizational performance in Asian emerging countries. The analytical model includes the mediation mechanisms for a more sophisticated representation of the effect of reinvestment behaviour on firm performance through leverage channels.

Table 1

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Reinvestment	1,305	2.059	7.718	-21.819	193.180
Debt Ratio	1,305	0.166	0.178	0.000	1.486
ROA	1,305	8.707	8.998	-13.780	69.490
Natural Log TA	1,305	26.322	2.626	18.998	33.731
Inflation	1,305	0.004	0.030	-0.049	0.109
GDP Growth Rate	1,305	-0.001	0.042	-0.097	0.155

Source: "Developed from authors' own source"

Table 1 presents the descriptive statistics, The data suggests that the sample consists of 1,305 firm-year observations. Businesses differ a lot in the way they reinvest earnings with an average of 2.06 and a large standard deviation (SD = 7.72). Similarly, the lowest and highest numbers (-21.82 and 193.18 respectively) also indicate significant diversity in investment activity. The average debt ratio is 0.17 (SD = 0.18), which shows debt generally finances 17% of a firm's total assets. The debt ratio, from 0.00 to 1.49, reveals the significant variation of the leverage levels of the businesses under review. The average ROA is 8.71% with a standard deviation of 9.00. This suggests that there is a considerable amount of variability in profitability among businesses. The minimum ROA of -13.78% and the maximum ROA of 69.49% show that some companies suffered losses while others made very high profits.

The mean Natural Log of Total Assets (Firm Size) value of 26.32 (SD = 2.63) shows that there is significant variation in firm size in the sample. For the macroeconomic control variables, the mean GDP growth rate is -0.11% (SD = 4.24%) and the mean inflation rate is 0.43% (SD = 2.99%). The large ranges for both variables imply that there were changes in the economic climate during the period of the research. The descriptive statistics overall indicate significant variation across the research variables, suggesting sufficient heterogeneity in the data set for further panel data and mediation analysis.



Figure 2

Descriptive Statistics Graph

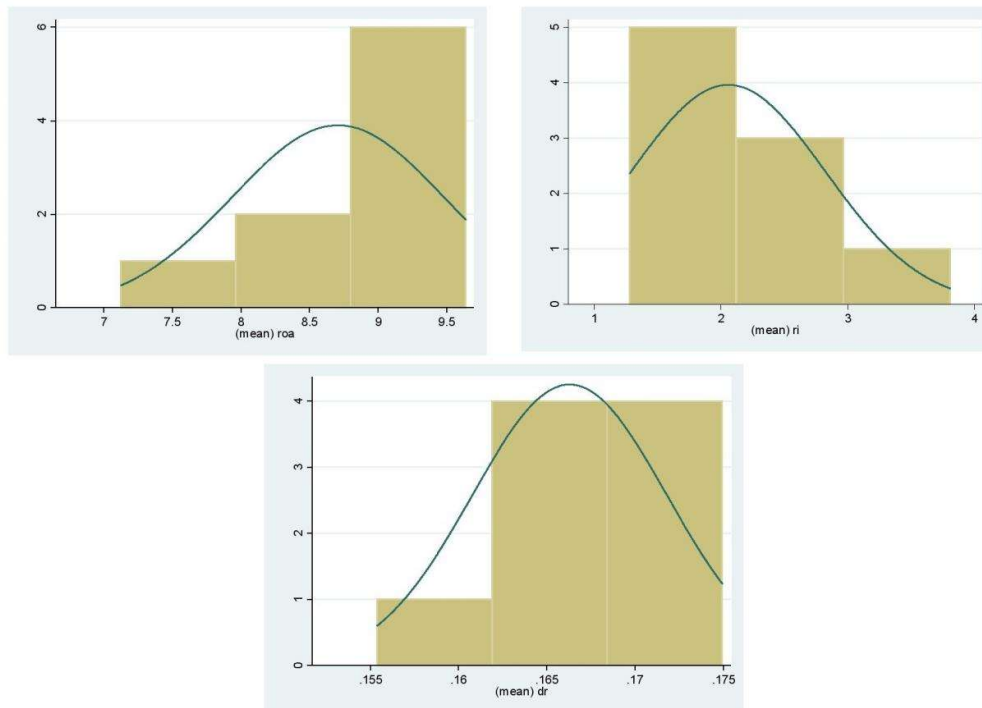


Table 2

Correlation Matrix

--	Reinvestment	Debt Ratio	ROA	Natural Log TA	Inflation	GDP Growth Rate
Reinvestment	1					
Debt Ratio	0.0063	1				
Return on Assets	-0.0677*	-0.4247*	1			
Natural Log TA	0.0279	0.1142*	-0.14*	1		
Inflation	-0.0172	-0.0736*	0.0379	-0.0525*	1	
GDP Growth Rate	-0.0161	0.018	0.0328	0.0133	-0.2215*	1

Source: "Developed from authors' own source"

The Pearson correlation coefficients among the research variables are shown in Table 2. The results indicate a significant and negative association between reinvestment and ROA ($r = -0.067$, $p < .05$). This implies that a higher level of reinvestment results in poor business performance in developing countries. Reinvestment, meanwhile, is not statistically linked to company size, debt ratio, inflation or the GDP growth rate.

The negative correlation between Debt Ratio and ROA ($r = -0.425$, $p < .05$) indicates that companies with higher debt levels tend to be less profitable. Debt ratio is positively correlated with firm size ($r = 0.112$, $p < .05$) and negatively correlated with inflation ($r = -0.073$, $p < .05$). This implies that larger firms are more likely to be financed by debt and that higher inflation is associated with lower leverage. ROA and business size exhibit a negative connection ($r = -0.142$, $p < .05$) with regard to company performance, indicating that larger firms in the sample often offer relatively lower returns on assets. However, ROA and inflation have a



positive link ($r = 0.379$, $p < .05$), indicating that ROA is more lucrative when inflation is higher. There is a positive link ($r = 0.033$) between ROA and GDP growth, despite it being statistically insignificant.

GDP Growth Rate and Inflation ($r = -0.221$, $p < .05$) and Firm Size ($r = -0.052$, $p < .05$) have a negative connection among the control variables. GDP growth and the other firm-level variables do not appear to be correlated. The association coefficients are generally low to moderate, with the strongest connection found between ROA and debt ratio ($r = -0.425$). The results indicate that multicollinearity is unlikely to be a major issue in the ensuing regression studies because none of the correlation coefficients are higher than the well-recognized cutoff of 0.80.

Figure 3

Correlation Graph

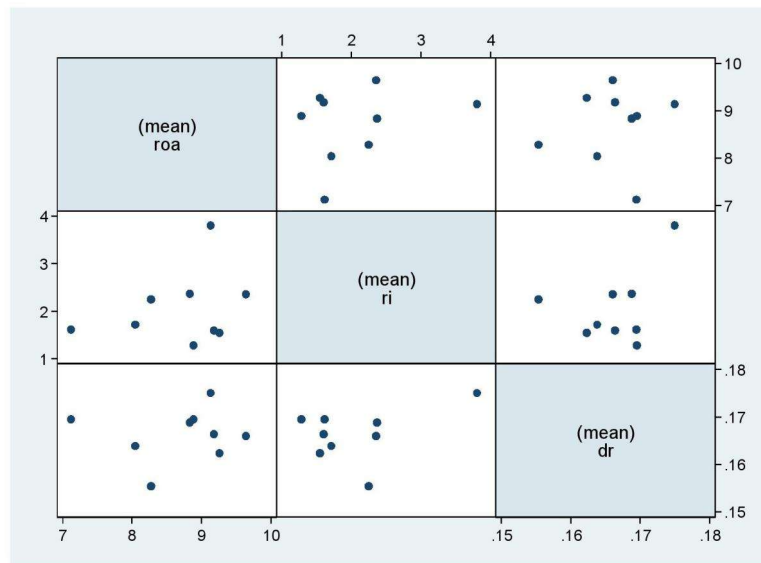


Table 3

Effect of Reinvestment on ROA

Variable	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Reinvestment	-.0728221	.0319165	-2.28	0.023	-.1354355, -.0102086
Natural Log TA	-.4773791	.0939034	-5.08	0.000	-.6615978, -.2931604
Inflation	11.72074	8.483596	1.38	0.167	-4.922301, 28.36378
GDP Growth Rate	8.970932	5.9599	1.51	0.133	-2.721143, 20.66301
Constant	21.38148	2.485102	8.60	0.000	16.50623, 26.25673

N = 1305, F(4, 1300) = 9.00, $p = 0$, R sq = 0.000, Adjusted R sq = 0.0269, Root MSE = 8.8893

Source: "Developed from authors' own source"

The impacts of RI, business size, inflation (INF), and GDP growth on Return on Assets (ROA) were investigated using a multiple regression analysis. The independent factors jointly explained differences in ROA, as seen by the statistically significant overall regression model ($F(4, 1300) = 9.00$, $p < .001$). With $R^2 = .0269$ and Adjusted $R^2 = .0240$, the model explained around 2.69% of the variation in ROA, indicating a comparatively poor explanatory power.

The results indicate that RI had a substantial negative influence on ROA ($\beta = -0.073$, $t = -2.28$, $p = .023$). This implies that a one-unit increase in RI is associated with an approximately 0.073-unit decrease in ROA when all other variables are maintained constant. Similar to this, there was a significant negative association ($\beta = -0.477$, $t = -5.08$, $p < .001$) between firm size and ROA, indicating that larger businesses frequently had lower ROA profitability. On the other hand, ROA was positive but statistically insignificantly



impacted by inflation (INF) ($\beta = 11.721$, $t = 1.38$, $p = .167$). Similarly, there was a slight but positive correlation between GDP and ROA ($\beta = 8.971$, $t = 1.51$, $p = .133$). Inflation and GDP do not substantially affect ROA in the sample since the p-values higher than the traditional significance level of .05.

Overall, the results indicate that while GDP and inflation have no statistically significant effect on business profitability, RI and firm size are important factors that determine ROA. Even if the model is statistically significant, the low R^2 value indicates that a considerable portion of the variance in ROA may be explained by factors not included in the model.

Table 4

Effect of Debt Ratio on ROA

Variable	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Debt Ratio	-20.93376	1.273316	-16.44	0.000	-23.43174, -18.43578
Natural Log TA	-.3264179	.0861095	-3.79	0.000	-.4953467, -.1574891
Inflation	3.684565	7.749879	0.48	0.635	-11.51907, 18.8882
GDP Growth Rate	9.391866	5.432491	1.73	0.084	-1.265543, 20.04928
Constant	20.77418	2.265961	9.17	0.000	16.32884, 25.21952

N = 1305, F(4, 1300) = 76.84, $p = 0$, $R^2 = 0.1912$, Adjusted $R^2 = 0.1887$, Root MSE = 8.1043

Source: "Developed from authors' own source"

The effects of Debt Ratio (DR), Firm Size (SIZE), Inflation (INF), and GDPG on Return on Assets (ROA) were examined using a multiple regression analysis. The independent factors jointly predict ROA, as shown by the statistically significant overall regression model (F(4, 1300) = 76.83, $p < .001$). The model has a moderate explanatory power, explaining 19.12% of the variation in ROA ($R^2 = .1912$, Adjusted $R^2 = .1887$). 8.104 was the Root Mean Square Error (RMSE).

Debt Ratio (DR) significantly and negatively affects ROA, according to regression results ($\beta = -20.934$, $SE = 1.273$, $t = -16.44$, $p < .001$, 95% CI [-23.432, -18.436]). This finding suggests that companies with larger debt levels typically have much worse profitability. In particular, when all other factors are held constant, a one-unit rise in the debt ratio reduces ROA by around 20.93 units. Similarly, there was a substantial negative correlation between Firm Size and ROA ($\beta = -0.326$, $SE = 0.086$, $t = -3.79$, $p < .001$, 95% CI [-0.495, -0.157]). This implies that the sample's larger companies often have lower returns on assets. On the other hand, ROA was positively but statistically insignificantly impacted by inflation (INF) ($\beta = 3.685$, $SE = 7.750$, $t = 0.48$, $p = .635$). Similarly, GDP exhibited a positive correlation ($\beta = 9.392$, $SE = 5.432$, $t = 1.73$, $p = .084$), but at the 5% significance level, the link was not statistically significant.

The results show that business profitability as determined by ROA is significantly influenced by the debt ratio and firm size. The negative coefficient of debt ratio indicates that a company's operational performance and profitability are negatively impacted by an overreliance on debt financing. Similarly, larger organizations may experience inefficiencies or greater operational expenses that lower returns on assets, according to the negative effect of company size. Macroeconomic circumstances did not significantly affect ROA over the research period, despite the fact that GDP and inflation showed positive coefficients, but their impacts were statistically negligible. Overall, the model shows that the chosen macroeconomic factors are not as significant in explaining profitability as firm-specific financial features, especially leverage.

Table 5

Effect of Reinvestment on Debt Ratio

Variable	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Reinvestment	.0000486	.0006338	0.08	0.939	-.0011948, .001292
Natural Log TA	.0074848	.0018648	4.01	0.000	.0038265, .0111431
Inflation	-.4020373	.1684696	-2.39	0.017	-.7325393, -.0715352
GDP Growth Rate	.0070176	.1183533	0.06	0.953	-.2251668, .239202
Constant	-.0290825	.0493498	-0.59	0.556	-.1258965, .0677316



N = 1305, $F(4, 1300) = 5.83$, $p = 0.0001$, $R^2 = 0.0176$, Adjusted $R^2 = 0.0146$, Root MSE = 0.17653
Source: "Developed from authors' own source"

A multiple regression analysis was used to examine the effects of RI, Firm Size, Inflation (INF), and GDP on the Debt Ratio (DR). The whole regression model was statistically significant, with $F(4, 1300) = 5.83$, $p = 0.0001$, indicating that the independent variables collectively explain variations in the debt ratio. However, the model's explanatory power was rather poor, accounting for just 1.76% of the variation in the debt ratio ($R^2 = 0.0176$, Adjusted $R^2 = 0.0146$).

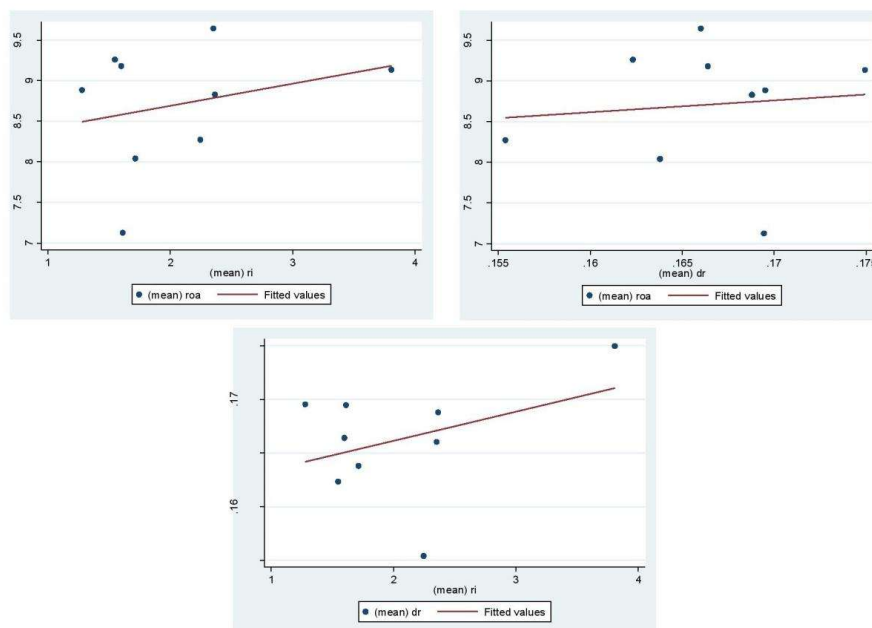
The regression results showed that RI had a positive but statistically insignificant effect on the debt ratio ($\beta = 0.00005$, $SE = 0.00063$, $t = 0.08$, $p = .939$, 95% CI $[-0.00119, 0.00129]$). This implies that RI has little effect on the leverage decisions made by businesses. Conversely, there was a statistically significant positive association between the debt ratio and firm size ($\beta = 0.00748$, $SE = 0.00186$, $t = 4.01$, $p < .001$, 95% CI $[0.00383, 0.01114]$). This study indicates that larger companies frequently have higher debt financing levels than smaller companies.

The debt ratio was shown to be significantly impacted negatively by inflation (INF) ($\beta = -0.402$, $SE = 0.168$, $t = -2.39$, $p = .017$, 95% CI $[-0.733, -0.072]$). This finding suggests that lower corporate leverage is linked to greater inflation, maybe as a result of businesses becoming more cautious about borrowing during inflationary times. Conversely, the debt ratio was positively but statistically not significantly impacted by GDP ($\beta = 0.007$, $SE = 0.118$, $t = 0.06$, $p = .953$, 95% CI $[-0.225, 0.239]$). Consequently, the sample's enterprises' debt ratios do not seem to be greatly impacted by economic growth.

The results show that whereas RI and GDP have little effect on corporate leverage, firm size and inflation are important factors that determine the debt ratio. Because of their better reputation and lower perceived risk, larger businesses are better able to access debt markets and get outside funding, according to the positive coefficient of company size. On the other hand, the negative correlation between inflation and the debt ratio implies that businesses lessen their dependence on debt when prices are increasing and the economy is uncertain. The low R^2 value suggests that a large amount of the variance in the debt ratio is explained by factors not included in the model, even if the overall model is statistically significant.

Figure 4

Regression Graph (RI on ROA), (DR on ROA), (RI on DR)



**Table 6***Effect of Reinvestment on ROA Mediated by Debt Ratio*

Variable	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Reinvestment	-0.0718051	0.0290411	-2.47	0.014	-0.1287778, -0.0148325
Debt Ratio	-20.92708	1.270822	-16.47	0	-23.42017, -18.43399
Natural Log TA	-0.320744	0.0859713	-3.73	0	-0.4894018, -0.1520863
Inflation	3.307272	7.736187	0.43	0.669	-11.86952, 18.48406
GDP Growth Rate	9.11779	5.422972	1.68	0.093	-1.520952, 19.75653
Constant	20.77287	2.261518	9.19	0	16.33624, 25.2095

N = 1305, F(5, 1299) = 62.93, p = 0, R sq = 0.195, Adjusted R sq = 0.1919, Root MSE = 8.0884

Source: "Developed from authors' own source"

Table 6 displays the results of the multiple regression analysis that examined the impact of reinvestment, debt ratio, firm size, inflation, and GDP growth rate on firm performance as measured by Return on Assets (ROA). F(5, 1299) = 62.93, $p < .001$, indicates that the independent and control variables together account for differences in firm performance, making the total regression model statistically significant. The adjusted coefficient of determination (Adjusted $R^2 = .192$) indicates an acceptable explanatory power for firm-level financial data, and the model explains around 19.5% of the variation in ROA ($R^2 = .195$).

The results indicate that reinvestment has a statistically significant negative effect on ROA ($\beta = -0.071$, $t = -2.47$, $p = .014$). Reinvestment is associated with lower short-term business performance, suggesting that the benefits of reinvestment may not be immediately reflected in profitability. Similarly, the debt ratio has a severe and significant negative effect on ROA ($\beta = -20.927$, $t = -16.47$, $p < .001$). The study finds that companies with higher leverage tend to have lower profitability which corroborates the notion that overuse of debt financing causes financial stress and affects performance adversely. In addition, there is a significant negative association between ROA and Firm Size (Natural Log of Total Assets) ($\beta = -0.321$, $t = -3.73$, $p < .001$), indicating that in the sample larger organizations are able to generate lower returns on assets than smaller organizations.

However, the coefficients of inflation ($\beta = 3.307$, $t = 0.43$, $p = .669$) and GDP growth rate ($\beta = 9.118$, $t = 1.68$, $p = .093$) are not statistically significant at the 5% significance level. As a result, it seems that macroeconomic factors, as measured by GDP growth and inflation, do not significantly affect the performance of businesses in the research sample. The positive and statistically significant constant term ($\beta = 20.773$, $p < .001$) represents the predicted ROA when all explanatory factors are maintained constant at zero.

5. Conclusions

The purpose of the study is to examine how business profitability as determined by Return on Assets (ROA) was affected by Reinvestment Rate (RR) and Debt Ratio (DR). The results showed that re-investment decisions and financial leverage had a significant effect on the business success. In the negative coefficients for DR we see that higher amounts of debt financing have a negative effect on profitability. This suggests that businesses with excessive leverage incur higher financial expenses and lower returns. These results are in line with the trade-off hypothesis, which states that although debt might have tax advantages, excessive usage of it raises the risk of financial hardship. This study supports Ebaid's (2009) findings that leverage, particularly debt, has a detrimental effect on ROA. Additionally, companies' performance as determined by ROA is significantly impacted negatively by DR. These results are in line with those of Rajan and Zingales (1995), Zetun and Tian (2007), and Abor (2007), who found a negative correlation between a firm's performance and capital structure. These results contradict those of Champion (1999), Gosh et al. (2000), Hardlock and James (2002), Frank and Goyal (2009), and Berger and Bonaccora di Patti (2003), who found a favorable relationship between capital structure and company performance. According to an empirical investigation of the link between RR and ROA, reinvestment rate (RR) significantly reduces return on assets (ROA) in the short term



but not over the long term. Additionally, noteworthy is the impact of RR on the debt ratio (DR), it also noteworthy that DR has a substantial and detrimental influence on ROA.

Because organizations devote more resources to future growth rather than current financial performance, the negative link between RR and ROA suggests that reinvestment decisions may lower short-term profitability. This is consistent with the notion that heavy reinvestment may improve long-term value creation, but may also depress short-term accounting profitability. It is also suggested that leverage and the rate of reinvestment are important but other factors such as the size of the firm, operating effectiveness, and market conditions also influence profitability. All in all, the results indicate that companies should be cautious when it comes to debt and investment. Excessive use of financial leverage increases the exposure to financial risks and reduces the profitability of business. Therefore, firms need to focus on maintaining an optimal capital structure that provides the benefits of debt and financial security.

The findings of the study reveal that financial leverage and reinvestment rate have statistically significant negative impact on business profitability. Higher debt ratio reduces profitability and too much investment affects short-term financial performance. The trade-off approach suggests that a firm should maintain an optimal ratio of debts to achieve profitability and minimize financial risk.

From a management point of view, companies are advised to apply good financial practices to control the level of debt and manage investments in a proper manner. It is critical for financial managers to not overly rely on external debt, and maintain flexibility in capital allocation to focus on long-term sustainability. Further research can extend the present study by using other financial indicators such as liquidity, market value ratios and industry-specific factors to better understand the determinants of profitability across different economies.

In conclusion, reinvestment directly reduces ROA, whereas the debt ratio alone lowers ROA. Since reinvestment indirectly contributes to the effect, the debt ratio is a more evident mediator. Since reinvestment is still significant even after mediators are included, the mediation is partial rather than total. According to the results, reinvestment results in weaker company performance and greater debt ratios. However, even once mediators are taken into account, reinvestment continues to be a substantial predictor of return on assets, therefore these factors cannot entirely account for the impact.

The findings show that the association between reinvestment and firm success was mediated by financial leverage. However, reducing the amount of external finance in the firm's capital structure can improve this partial mediation and performance level. The study's findings demonstrate that low leverage improves business performance by reducing the high cost of capital (cost of loans and equity) when a company reinvests its internal funds instead of borrowing money from debts (external resources). Ultimately, we may draw the conclusion that the debt ratio has a detrimental impact on business performance. It implies that performance can be improved if we reduce the amount of outside funding in our capital structure. The same is true: when a company spends more of its internal earnings back into the company, it lowers its level of external financing, which can lead to an increase in performance.

Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this article.

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Informed Consent

Informed consent was obtained from all participants.

Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.



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