Journal of Marketing & Social Research

ISSN (Online): 3008-0711

Volume: 02 | Issue 02 | Mar-Apr. | 2025
Journal homepage: https://jmsr-online.com/

Research Article

Exploring the Validity of Capital Asset Pricing Model (CAPM) in the Indian Market: An Empirical Study Using Nifty 500 Index Companies.

Dr. S. Balaji[1], Dr. Praveen Gujjar[2], Dr. Shruthi M P[3]
[1]Associate Professor, ISBR Business School, Bengaluru, Karnataka
[2]Associate Professor & Area Chair, CMS Business School, Jain (Deemed-to-be-University), Bengaluru, Karnataka
[3]Assistant Professor, SCMS, Dayananda Sagar University, Bengalur, Karnataka.

Submission: 05/12/2024; Received: 19/02/2025; Revision: 10/03/2025; Published: 17/03/2025

***Corresponding author:** Dr. S. Balaji (balaji.setty82@gmail.com)

Abstract: This study looks at the link between portfolio returns and market returns in the Indian capital market, with an emphasis on finding the factors that influence portfolio returns. Using data from the Nifty 500 index, which includes 268 companies with at least ten years of trading history from July 1, 2006 to June 30, 2021, the study employs the Capital Asset Pricing Model (CAPM) to analyse daily returns and assess the correlation between individual security returns and market returns. Key characteristics such as market capitalization, price-to-book value, price-to-earnings ratio, and earnings per share are investigated to better understand their influence on portfolio performance.The process entails computing beta coefficients using time series regression to assess systematic risk and the sensitivity of portfolio returns to market changes. By comparing estimated betas and alphas, the study hopes to give insights into the impact of market volatility on portfolio returns and crucial factors for effective portfolio management. The findings add to a better understanding of asset pricing dynamics in the Indian market, with implications for investors and portfolio managers.

Keywords: Capital Asset Pricing Model (CAPM), portfolio returns, market returns, Nifty 500 Index, systemic risk, beta coefficients. Indian Capital Market, Portfolio Management, Financial Analysis, and Empirical Research

INTRODUCTION

Capital markets are essential for raising investment funds, as capital is necessary for both economic development and output. Capital markets enable the transfer of cash from surplus sectors, such as the public and private sectors, to those in deficit, so facilitating the mobilisation of savings, which is crucial for investment. These marketplaces promote economic progress by making it possible to shift resources from less lucrative to more lucrative endeavors. Banks and other financial intermediaries assist lending and borrowing in the capital markets. Through rights issues, private placements, and public offerings, businesses can raise capital in primary markets. For long-term finance, the most popular approach is public issue, or issuing shares to the general public. Private placements include the sale of securities to a small number of investors, whereas rights issues entail the issuing of additional shares to current investors.The Securities Exchange Board of India (SEBI) is in charge of the secondary market in India, where outstanding securities are traded. Futures and options trading have been implemented by SEBI, which also controls other market intermediaries. SEBI's regulatory authority was expanded with an amendment to the Securities Contract (Regulation) Act (SCRA) 1956. This study aims to ascertain the relationship between portfolio returns and market returns, as well as identify the factors determining portfolio returns. Utilizing data from the Nifty 500 index, the research examines 268 companies with at least ten years of trading history from July 1, 2006, to June 30, 2021. Daily returns of these companies and the market are analyzed using the Capital Asset Pricing Model (CAPM) to determine the correlation between individual securities' returns and market returns. Key factors such as market capitalization, price-to-book value, price-to-earnings ratio, and earnings per share are assessed to understand their impact on portfolio performance. The methodology involves calculating beta coefficients through time series regression to measure systematic risk and the sensitivity of portfolio returns to market movements. By comparing the calculated betas and alphas, the study evaluates the validity of CAPM in predicting expected returns. The findings aim to provide a comprehensive understanding of how market fluctuations influence portfolio returns and identify critical determinants that investors should consider for optimal portfolio management. An expansion of Markowitz's portfolio theory, investment market theory explains how securities need to be valued in dynamic markets. This is further developed by the Sharpe-Lintner-Mossin Capital Asset Pricing Model (CAPM), which models equilibrium stock returns under the assumption that investments have a financial value and that supply and demand are reflected in security prices.The determination of asset prices and the impact of market changes is aided by security analysis, encompassing fundamental, technical, and quantitative evaluations. While technical analysis examines past data to forecast price patterns, fundamental analysis assesses securities based on economic considerations, and quantitative analysis applies statistical techniques. It's difficult to forecast share values and understand the stock

market. Quantitative data is used by researchers to examine risk and return, stock price behavior, and portfolio diversification. Models are continuously improved to better fit current trends and elucidate the link between risk variables and returns.

REVIEW OF LITERATURE

Investors seek to maximize returns while minimizing risk, and this serves as the foundation for research and studies conducted by both practitioners and academics. The models developed as a result of such studies and research attempt to explain the relationship between returns and credible factors. The systemic risk of returns on security/securities can be divided into two categories: risk caused by market factors and risk caused by the company/firm factors. The CAPM is a theory that assumes effective capital markets exist. The above is one of the most significant contributions to finance and may be the most widely used (Ross, Westerfield, and Jordon, 1996). Davis et al. (2000) found a significant positive relationship with both normal profitability and book-to-market equity that is equally strong for the 1929-1963 time period as it is for the later time period analyzed in previous papers A four different risk model better explains the premium than the supposition that the book-to-market attribute is compensated irrespectively of risk static loading. Campbell and Cochrane (2000)demonstrated why the CAPM and also its fake lashes are better ambiguous models than the typical consumer model using Campbell and Cochrane's (1999) external daily ritual model economy The shareholder ratio tracks the evening expected returns of the model economy. As previously stated, the findings of the Korean study, Bark (1991), do not support CAPM for the entire study period (1980-87), as there was a negative sign in the beta coefficient as well as the residual risk was found to be statistically significant. In many forms, the South Korean market is similar to the Indian market. Unlike stock markets across the globe, markets in India and South Korea are young and expanding. Many of the evidences for the Indian market contradict the CAPM's validity. Given the conflicting evidence on the Indian market, the current study attempts to determine whether CAPM holds in the Indian market. The study uses univariate regression to test the validity of the standard form of CAPM by testing the intercept and slope coefficients of independent variables, beta, size, book-to-market equity ratio, earnings-to-price, and excess market returns of the portfolios in Chapter 4. In Chapter 5, factor models are tested using multiple regressions on various combinations of the above independent variables. The excess portfolio returns over the risk-free rate of return are discussed in both of these chapters (Rp-Rf) are used as the dependent variable in all the regressions. We discuss time series and univariate factors model.

Data and Sample

The learning is based on National Stock Exchange (NSE) Nifty 500 index companies that are/were part of the index from the beginning to the latest day. Nifty 500 index consists of 500 companies. All the companies that are/were part of the Nifty 500 index at any time in the past of the index have been included in the study. However, those companies, that are recently listed and have less than ten years of trading history, have been omitted. The final list of companies is particularly based on two criteria:

a) The companies selected should have been constituents of the NSE 500 index.
b) Traded for a minimum of ten years during the study period.

The total number of companies included in this study, using the above criteria, is 268. NIFTY 500 companies account for more than 95 percent of NSE market capitalization and come from 18 industry groups. The NSE-500 index is taken as the proxy and the yields of yield of 91 days treasury bills were used for calculating the risk-free rate of return. The yearly adjusted share prices and index from July 1, 2006, to June 30, 2021, are used in the study. To test the factor models' various independent variables are used. The independent variables are constructed based on the daily un-adjusted closing prices, book value per share, market capitalization, price-to-book value, price-to-earnings, earnings per share, outstanding shares, etc are used. The data were collected from the Capital Market line and Centre for Monitoring the Indian market (Prowess package), financial databases.

METHODOLOGY

Black, Jensen, and Scholes conducted a thorough examination of the risk-return relationship (1972). They investigated whether the correlation is linear and whether firm-specific volatility of a security return influences the return. They bring to a close that beta is a significant predictor of security return. The methodology employed in this study is similar to that employed by them. Ansari (2000) has been using this method in his research on the Indian stock market.

Research Hypothesis-

- Ho: Market betas are not the determinants of the cross-section of the expected portfolio returns
- Ho: Size does not explain the cross-section of portfolio returns.
- Ho: None of the slope coefficients of independent variables, beta, ME, BE/ME, PEG, and Financial Leverage in the multiple regression are significantly different from zero.

Phase I: Time series analysis Calculations of percentage returns

The methodology is based on the approach by Black, Jensen, and Scholes (1972), as well as Ansari (2000) for the Indian stock market. Daily returns are calculated using adjusted closing prices:

The daily returns are calculated using the following models:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \times 100, \quad R_{mit} = \frac{I_{it} - I_{it-1}}{I_{it-1}} \times 100$$

The mean return of a security is given by: $\overline{R_i} = \frac{\sum_{t=1}^{N} R_{it}}{N}$

The mean return of market m is given by:

$$\overline{R_m} = \frac{\sum_{t=1}^{N} R_{mit}}{N}$$

Where,
Rit = Return on security i during period t;
Rmit = Return on a market index (BSE 100 Index) m during period t;
Pit = Adjusted closing price of security i for time t;
Pit-1 = Adjusted closing price of security i for time t-1;
Iit = Adjusted closing value of market index corresponding to the period of security i for time t;
Iit-1 = Adjusted closing value of market index corresponding to the period of security i for time t-1;

N = Number of observations (returns).
The values of the factors are known in the time series, as well as sensitivities are approximated. The research is carried out for one security over various time periods, followed by the second, then for the third, and so on. The CAPM Phase 1 fits the time series regression with each stock and runs a simple regression over time. The period's daily returns on securities and the market are regressed using the company returns as the dependent relative variable and the market returns as the independent variable. The following market model is used to signify expected returns. The returns realized are used as the measure in place of expected returns. The risk measures like beta, and alpha is calculated using this model.

$$R_i = \alpha_i + \beta_i R_m + e_i, \quad for\, i = 1,...N.$$

Mean of (ei) = E(ei) = 0 ; Variance of ei = E(ei2) = $\sigma_{e_i}^2$; Variance of Rm = E (Rm - Rm)2 = σm2; Variance of security i is: σi2 = βi2 σm2 + $\sigma_{e_i}^2$
Where,
R_i = Expected return on Security 'i';
α_i = Intercept of a straight line or alpha coefficient of security i;
β_i= Slope of a straight-line or beta coefficient of security i;
R_m = Expected return on index m;
e_i= Error term with mean zero and a Standard deviation which is constant.

This term captures the variations in security i that are not captured by the market index m; σ_m = Standard deviation of market index m, σ_m^2 = Variance of market index m.

Total Risk of *i* is: $\sigma_i^2 = \beta_i^2 \sigma_m^2 + \sigma_{e_i}^2$
Total Risk = Systematic Risk + Unsystematic Risk; *N* = Number of pairs of observations.

Terregrossa (2001) calculated intercept (i) and beta (β) for each of his illustration firms, by running regressions over a cross-section of firms for each five years horizon from 1985 to 1990. A related method has been used to calculate the intercept (i) and beta (β) for each of the sample company by using three years of daily returns for the entire period of study i.e., 1990 to 2004. If CAPM is correct, the intercept I will not differ considerably from zero (as our dependent variable is Rp-Rf). Thus, estimate equation (5) for investment and testing to see if i equal to zero is a direct test of the CAPM. Furthermore, the CAPM assumes a direct association between security/portfolio returns and beta. If this is correct, we expect portfolio beta in univariate and multiple regressions to be considerably different from zero. As a result, the betas of shares are tested to see if they differ significantly from zero.

Five variables regression using B_p, size, BE/ME, PEG, and FL
Using portfolio betas, size, BE/ME, PEG, and FL as independent variables and Rp-Rf as the dependent variable, multiple regressions are run for the following:
Rp- Rf = a +b1 βp +b2 ME+b3BE/ME+b4PEG+b5FL +ε
If the Factors model holds, we expect 'a' to be closer to zero and beta, size, value, PEG, and FL together, to capture the cross-sectional variation in portfolio-excess-returns provided that they are statistically significant.

Five variables regression using Bp, size, BE/ME, PEG, and FL
Using portfolio betas, size, BE/ME, PEG, and FL as independent variables and Rp-Rf as the dependent variable, multiple regression is run for the following:

R_p- R_f = a +b β_p +s (SMB) + h (HML)+ p(PEG)+F(FL)+ ε

If the Factors model holds, we expect 'a' to be closer to zero and beta, SMB, HML PEG, and FL together, to capture the cross-sectional variation in portfolio-excess-returns provided that they are statistically significant.

DATA ANALYSIS AND INTERPRETATION

Table 1 Summary of Univariate Analysis on the companies under NSE 500 Index

Sector	Variables	α	β	R2	SigF	Sector	Variables	α	β	R2	SigF
Automobile Sector	R_p-R_f , β	0.34	-0.12	0.02	0.61	IT Sector	R_p-R_f , β	0.16	0.75	0.57	0
	R_p-R_f , Value	0.32	0.05	0	0.85		R_p-R_f , Value	0.35	0.06	0	0.82
	R_p-R_f , Size	0.37	-0.44	0.19	0.06		R_p-R_f , Size	0.39	-0.44	0.2	0.1
	R_p-R_f , PEG	0.33	-0.07	0.01	0.76		R_p-R_f , PEG	0.36	-0.03	0	0.9
	R_p-R_f , FL	0.32	0.09	0.01	0.72		R_p-R_f , FL	0.35	0.33	0.11	0.24
Cement Sector	R_p-R_f , β	0.21	0.06	0	0.85	Media Sector	R_p-R_f and β	0.23	-0.21	0.04	0.72
	R_p-R_f , Value	0.18	0.45	0.2	0.15		R_p-R_f , Value	0.07	0.43	0.18	0.46
	R_p-R_f , Size	0.21	0.02	0	0.94		R_p-R_f , Size	0.1	0.19	0.03	0.76
	R_p-R_f , PEG	0.22	0.07	0.01	0.82		R_p-R_f , PEG	0.11	-0.22	0.05	0.71
	R_p-R_f , FL	0.22	-0.17	0.03	0.6		R_p-R_f , FL	0.01	0.85	0.73	0.06
Chemical Sector	R_p-R_f , β	0.58	-0.96	0.92	0	Metal Sector	R_p-R_f and β	-0.08	0.99	0.98	0
	R_p-R_f , Value	0.7	-0.24	0.06	0.42		R_p-R_f , Value	0.58	0.1	0.01	0.71
	R_p-R_f , Size	0.62	0.12	0.01	0.69		R_p-R_f , Size	0.03	0.55	0.3	0.04
	R_p-R_f , PEG	0.58	-0.6	0.36	0.02		R_p-R_f , PEG	0.35	0.94	0.88	0
	R_p-R_f , FL	0.25	0.47	0.22	0.09		R_p-R_f , FL	0.52	0.57	0.01	0.8
Construction Sector	R_p-R_f , β	0.13	0.39	0.16	0.61	ONGC Sector	R_p-R_f ,β	0.22	-0.3	0.09	0.35
	R_p-R_f , Value	0.21	-0.43	0.19	0.57		R_p-R_f , Value	0.14	0.53	0.28	0.08
	R_p-R_f , Size	0.17	0.26	0.06	0.74		R_p-R_f , Size	0.19	-0.28	0.08	0.38
	R_p-R_f , PEG	0.2	0.82	0.68	0.17		R_p-R_f , PEG	0.2	-0.44	0.2	0.16
	R_p-R_f , FL	0.19	0.95	0.9	0.05		R_p-R_f , FL	0.16	0.34	0.11	0.3
Consumer Goods	R_p-R_f , β	0.2	0.85	0.74	0	Pharmaceutical Sector	R_p-R_f , β	0.23	0.53	0.28	0
	R_p-R_f , Value	0.38	0.04	0	0.79		R_p-R_f , Value	0.28	0.28	0.08	0.13
	R_p-R_f , Size	0.39	-0.23	0.05	0.14		R_p-R_f , Size	0.33	-0.25	0.06	0.18
	R_p-R_f , PEG	0.36	0.04	0	0.78		R_p-R_f , PEG	0.3	0.08	0.01	0.67
	R_p-R_f , FL	0.36	0.05	0	0.75		R_p-R_f , FL	0.3	0.05	0	0.79
Consumer Services Sector	R_p-R_f , β	0.03	0.67	0.45	0.32	Power Sector	R_p-R_f, β	0.01	0.92	0.84	0.02
	R_p-R_f , Value	0.15	0.96	0.93	0.03		R_p-R_f , Value	0.15	0.52	0.27	0.36
	R_p-R_f , Size	0.59	-0.72	0.51	0.28		R_p-R_f , Size	0.24	-0.77	0.59	0.12
	R_p-R_f , PEG	0.3	-0.35	0.12	0.64		R_p-R_f , PEG	0.16	-0.69	0.48	0.19
	R_p-R_f , FL	0.2	0.72	0.52	0.27		R_p-R_f , FL	0.1	0.93	0.86	0.02
Fertilizers Sector	R_p-R_f , β	0.36	-0.24	0.06	0.55	Service Sector	R_p-R_f , β	0.12	0.17	0.02	0.78
	R_p-R_f , Value	0.24	0.88	0.78	0		R_p-R_f , Value	0.32	-0.43	0.18	0.46
	R_p-R_f , Size	0.31	0.13	0.01	0.74		R_p-R_f , Size	0.29	-0.3	0.09	0.61
	R_p-R_f , PEG	0.29	-0.25	0.06	0.53		R_p-R_f , PEG	0.26	-0.26	0.06	0.67
	R_p-R_f , FL	0.29	0.15	0.02	0.73		R_p-R_f , FL	0.24	0.77	0.6	0.12
Financial Services Sector	R_p-R_f , β	0.1	0.58	0.34	0	Telecom Sector	R_p-R_f , β	0.12	0.97	0.94	0
	R_p-R_f , Value	0.22	0.21	0.04	0.21		R_p-R_f , Value	0.3	-0.19	0.03	0.71
	R_p-R_f , Size	0.25	-0.07	0.01	0.65		R_p-R_f , Size	0.36	-0.45	0.2	0.36
	R_p-R_f , PEG	0.25	0.06	0	0.69		R_p-R_f , PEG	0.37	0.27	0.07	0.6
	R_p-R_f , FL	0.25	0.17	0.03	0.29		R_p-R_f , FL	0.38	-0.4	0.18	0.4
Industrial Manufacturing Sector	R_p-R_f , β	0.09	0.87	0.08	0	Textile Sector	R_p-R_f , β	0.63	0.2	0.04	0.73
	R_p-R_f , Value	0.31	0.29	0.08	0.11		R_p-R_f , Value	0.56	0.46	0.22	0.42
	R_p-R_f , Size	0.44	-0.29	0.08	0.1		R_p-R_f , Size	1.29	-0.98	0.97	0
	R_p-R_f , PEG	0.37	0.09	0.01	0.6		R_p-R_f , PEG	0.6	-0.75	0.56	0.14
	R_p-R_f , FL	0.35	0.07	0.01	0.67		R_p-R_f , FL	0.49	0.53	0.28	0.35

Regarding the chosen factors' ability to explain portfolio returns, the results of univariate regression analysis conducted in a variety of sectors paint a mixed picture. Certain factors like beta, size, PEG ratio, and financial leverage show strong correlations with portfolio returns in several industries, including cement, chemicals, consumer goods, consumer services, fertilizers, financial services, industrial manufacturing, IT, metal, pharmaceutical, power, telecom, and textiles. All the factors, however, show little or no significant explanatory power in other sectors, like as construction, media, ONGC, and services. This points to a complex link that varies by sector between the selected factors and portfolio results. To identify possible combined effects

of these variables on portfolio performance and possibly gain deeper insights into the dynamics of each sector's market behavior and investment outcomes, it becomes necessary to investigate bivariate and trivariate analyses in the following.

CONCLUSION

As no consistent explanatory power was found among the chosen variables across multiple sectors, the univariate analysis's findings highlight the difficulty of predicting portfolio returns. But it's interesting to observe that in most of the sectors examined, beta comes out to be a big component in determining portfolio results. It would seem from this that beta is a more significant factor in determining portfolio success than SMB, HML, PEG, and FL, at least when it comes to the Indian capital market. These results suggest many future directions for research and practice. First of all, they draw attention to the necessity for more investigation into the dynamics of asset pricing in the Indian environment, especially concerning the efficacy of conventional models such as Factor models and CAPM. Future studies should further explore the specific determinants impacting asset pricing and portfolio performance, as the Indian capital market has not received enough attention in this area.

Recommendations: It is advised that investors and portfolio managers give the inclusion of beta in their decision-making processes top priority in light of the results of the univariate study. Because of its ability to explain returns consistently across different industries, beta is a useful tool for evaluating and controlling systematic risk in investment portfolios. But, since the Indian capital market is so diversified and because other factors could also be very important in deciding portfolio returns, it is crucial to combine beta analysis with a comprehensive investigation of other aspects. Therefore, to have a more thorough knowledge of the underlying drivers of portfolio performance, investors should consider the addition of complementary factors, such as size, growth measures, and financial leverage, even if the beta is still an important statistic.

Implications- The univariate analysis's conclusions emphasize the significance of beta as a key performance indicator for evaluating portfolio returns in the Indian capital market. To better understand and manage systematic risk, investors and portfolio managers should give priority to incorporating beta analysis into their decision-making processes. Nonetheless, the variation in the explanatory capacity of additional factors among various industries highlights the intricacy of market dynamics. Due to this complexity, investors must manage their portfolios with a sophisticated approach, focusing not just on a few key variables but also on developing a holistic plan that takes into account several other elements.

Additionally, the univariate analysis's variables' poor explanatory power indicates that additional study into potential alternative factors influencing portfolio performance is warranted. To improve the predictive power of portfolio management models, more macroeconomic data, industry-specific trends, and market sentiment factors should be investigated in future research. Through broadening the scope of study and integrating a more diverse array of characteristics, investors may acquire a more profound understanding of the fundamental drivers of portfolio performance and formulate more resilient investment strategies customized to the complexities of the Indian capital market.

Barriers and Limitations: The univariate approach has a drawback in that it ignores any interactions and synergies among the factors driving portfolio returns due to its restricted emphasis on individual variables alone. When variables are examined separately, complicated linkages or combined effects between several factors may be missed in the study. Furthermore, the analysis's dependence on historical data could not completely take into account alterations in market dynamics or unanticipated incidents that might influence portfolio performance. As a result, even while univariate analysis offers insightful information on the explanatory power of particular variables, a thorough grasp of the fundamental drivers influencing portfolio returns in the Indian capital market may be hampered by its narrow scope.

REFERENCES

1. References Amihud, Y., Mendelson, H., & Uno, J. (1999). Number of shareholders and stock prices: Evidence from Japan. The Journal of Finance 54 (3), 1169–1184.
2. Anderson, R.C., Mansi, S.A., &Reeb, D.M. (2003). Founding family ownership and the agency cost of debt. Journal of Financial Economics 68 (2), 263–285.
3. Bodnaruk, A., &Ostberg, P. (2013). The shareholder base and pay- € out policy. Journal of Financial and Quantitative Analysis 48 (3), 729–760.
4. Botosan, C.A. (1997). Disclosure level and the cost of equity capital. The Accounting Review 72 (3), 323–349. Chava, S., &Purnanandam, A. (2010). Is default risk negatively related to stock returns? The Review of Financial Studies 23 (6), 2523–2559.
5. Chen, K.C.W., Chen, Z., & Wei, K.C.J. (2009). Legal protection of investors, corporate governance, and the cost of equity capital. Journal of Corporate Finance 15 (3), 273–289.
6. Claessens, S., Djankov, S., & Lang, L.H.P. (2000). The separation of ownership and control in East Asian Corporations. Journal of Financial Economics 58 (1–2), 81–112.
7. Demsetz, H. (1983). The structure of ownership and the theory of the firm. The Journal of Law and Economics 26 (2), 375–390. Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. Journal of Political Economy 93 (6), 1155–1177.
8. Durnev, A., & Kim, E.H. (2005). To steal or not to steal: Firm attributes, legal environment, and valuation. The Journal of Finance 60 (3), 1461–1493. Easton, P. (2009). Estimating the cost of capital implied by market prices and accounting data. Foundations and Trends in Accounting 2 (4), 241–364.

9. Easton, P. (2009). Estimating the cost of capital implied by market prices and accounting data. Foundations and Trends in Accounting 2 (4), 241–364
10. J.P. Chacko, L. Padmakumari Easton, P.D. (2004). PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. The Accounting Review 79 (1), 73–95.
11. aston,
12. .D., & Monahan, S.J. (2005). An evaluation of accounting-based measures of expected returns. The Accounting Review 80 (2), 501–538.
13. Easton, P.D., & Sommers, G.A. (2007). Effect of analysts' optimism on estimates of the expected rate of return implied by earnings forecasts. Journal of Accounting Research 45 (5), 983–1015.
14. Fama, E.F., & French, K.R. (1992). The cross-section of expected stock returns. The Journal of Finance 47 (2), 427–465.
15. Fama, E.F., & French, K.R. (1996). Multifactor explanations of asset pricing anomalies. The Journal of Finance 51 (1), 55–84.
16. Foerster, S.R., &Karolyi, G.A. (1999). The effects of market segmentation and investor recognition on asset prices: Evidence from foreign stocks listing in the United States. The Journal of Finance 54 (3), 981–1013.
17. El Ghoul, S., Guedhami, O., Kwok, C.C.Y., & Mishra, D.R. (2011). Does corporate social responsibility affect the cost of capital? Journal of Banking & Finance 35 (9), 2388–2406.
18. Gode, D., &Mohanram, P. (2003).
19. Inferring the cost of capital using the Ohlson–Juettner model. Review of Accounting Studies 8 (4), 399–431.
20. Green, T.C., &Jame, R. (2013). Company name fluency, investor recognition, and firm value. Journal of Financial Economics 109 (3), 813–834.
21. Grullon, G., Kanatas, G., & Weston, J.P. (2004). Advertising, breadth of ownership, and liquidity. Review of Financial Studies 17 (2), 439–461.
22. Guedhami, O., & Mishra, D. (2009). Excess control, corporate governance and implied cost of equity: International evidence. Financial Review 44 (4), 489–524. Hail, L., &Leuz, C. (2006). International differences in the cost of equity capital: Do legal institutions and securities regulation matter? Journal of Accounting Research 44 (3), 485–531. Hegde, S., Seth, R., &Vishwanatha, S.R. (2020). Ownership concentration and stock returns: Evidence from family firms in India. Pacific-Basin Finance Journal 61, 101330. Hou, K., van Dijk, M.A., & Zhang, Y. (2012). The implied cost of capital: A new approach. Journal of Accounting and Economics 53 (3), 504–526.
23. . Karpoff, J.M., Schonlau, R., & Suzuki, K. (2021). Shareholder perks and firm value. The Review of Financial Studies 34 (12), 5676–5722.
24. Konijn, S.J.J., Kraussl, R., & Lucas, A. (2011). Blockholder dispersion € and firm value. Journal of Corporate Finance 17 (5), 1330–1339
25. Ohlson, J.A., &Juettner-Nauroth, B.E. (2005). Expected EPS and EPS growth as determinants of value. Review of Accounting Studies 10 (2), 349–365.
26. Pastor, L., Sinha, M., &Swaminathan, B. (2008). Estimating the intertemporal risk-return tradeoff using the implied cost of capital. The Journal of Finance 63 (6), 2859–2897.
27. Pham, P.K., Suchard, J.A., &Zein, J. (2011). Corporate governance and alternative performance measures: Evidence from Australian firms. Australian Journal of Management 36 (3), 371–386.
28. La Porta, R., Lopez-de-Silanes, F., & Shleifer, A (1999). Corporate ownership around the world. The Journal of Finance 54 (2), 471– 517.
29. La Porta, R., Lopez-De-Silanes, F., Shleifer, A., &Vishny, R. (2002). Investor protection and corporate valuation. The Journal of Finance 57 (3), 1147–1170.
30. Roodman, D. (2009). How to do Xtabond2: An introduction to difference and system GMM in stata. The Stata Journal 9 (1), 86–136. Sharpe, W.F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. The Journal of Finance 19 (3), 425–442.
31. Shleifer, A., &Vishny, R.W. (1986). Large shareholders and corporate control. Journal of Political Economy 94 (3), 461–488.
32. Tseng, C.Y., &Demirkan, S. (2021). Joint effect of CEO overconfidence and corporate social responsibility discretion on cost of equity capital. Journal of Contemporary Accounting & Economics 17 (1), 100241. Yung, K., & Jian, Y. (2017). Effects of the shareholder base on firm behavior and firm value in China. International Review of Economics and Finance 49, 370–385.