



Performance of Quality-Based Long–Short Portfolios in the Indian Equity Market

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ARTICLE INFO	ABSTRACT
Published Online: 20 December 2025	This paper analyzes the performance of quality-based long–short equity portfolios in the Indian stock market over a long-term sample period. Using firm-level accounting and return data for listed Indian companies, the study constructs portfolios based on multiple quality-related indicators covering profitability, accounting quality, capital structure, earnings stability, and human capital efficiency. Firms are sorted annually into deciles based on each quality proxy, and long–short portfolios are formed by taking long positions in high-quality firms and short positions in low-quality firms. Portfolio performance is evaluated using annualized returns, volatility, and risk-adjusted measures. The results suggest that profitability- and earnings stability-based quality measures generally exhibit positive long–short performance, while accounting quality and leverage-based measures show mixed or weaker results. Human capital-based indicators display varying performance depending on the proxy employed. Overall, the findings provide descriptive evidence on the behavior of quality-oriented investment strategies in the Indian equity market. The study is intended as an applied empirical analysis and offers practical insights for researchers and market participants interested in quality-based portfolio strategies.
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I. INTRODUCTION

Quality-based investing has gained considerable attention among investors and researchers as an approach that emphasizes firm fundamentals rather than short-term market movements. Quality characteristics such as profitability, financial stability, and earnings consistency are commonly viewed as indicators of a firm's long-term strength and resilience. As a result, portfolios constructed using quality-related measures are often expected to deliver more stable performance across market cycles.

While extensive empirical evidence exists on quality-based investment strategies in developed markets, relatively fewer studies provide applied portfolio-level evidence for emerging markets such as India. The Indian equity market has experienced significant growth in both market depth and investor participation over the past two decades, making it an important setting for examining the behavior of quality-oriented investment strategies.

The purpose of this study is to evaluate the performance of quality-based long–short portfolios in the Indian stock market using a comprehensive set of accounting-based

quality indicators. The analysis focuses on five broad dimensions of quality, namely profitability, accounting quality, capital structure, earnings stability, and human capital efficiency. Using a transparent portfolio construction framework, the study examines whether differences in firm-level quality characteristics are associated with systematic variations in long–short portfolio returns.

This paper adopts a descriptive empirical approach and aims to summarize the return and risk characteristics of quality-based long–short portfolios over the sample period. The findings are intended to provide market-specific insights and contribute to the applied literature on quality investing in emerging equity markets.

II. METHODOLOGY

This study adopts a quantitative and portfolio-based empirical methodology to examine the performance of quality-oriented long–short investment strategies in the Indian equity market. The methodological framework is designed to be transparent and replication-oriented, relying

on standard portfolio construction techniques commonly used in applied finance research.

The analysis is based on firm-level accounting and stock return data for publicly listed Indian companies. Quality characteristics are measured using multiple accounting-based indicators that capture different dimensions of firm quality, including profitability, accounting quality, capital structure, earnings stability, and human capital efficiency. Each quality proxy is computed using publicly available financial statement information and is treated independently in the portfolio construction process.

Portfolio formation follows an annual cross-sectional sorting procedure. At the end of each fiscal year, firms are ranked based on the value of a given quality proxy and sorted into ten decile portfolios. Depending on the economic interpretation of the proxy, firms in the highest decile are classified as high-quality firms, while those in the lowest decile are classified as low-quality firms. A long–short portfolio is then constructed by taking a long position in the high-quality decile and a short position in the low-quality decile.

The portfolios are held for a one-year period following formation, and portfolio returns are computed on an equal-weighted basis. Long–short portfolio returns are calculated as the difference between the returns of the long and short portfolios. To facilitate interpretation and comparison, portfolio performance is summarized using annualized return measures, return volatility, and risk-adjusted performance indicators.

The methodology does not employ regression-based asset pricing models or factor adjustments. Instead, the focus remains on descriptive evaluation of portfolio-level return characteristics. This approach is consistent with the objective of the study, which is to provide applied evidence on the performance behavior of quality-based long–short strategies in the Indian equity market.

III. LITERATURE REVIEW

The concept of firm quality has become an important area of inquiry in the finance literature, particularly in the context of explaining cross-sectional differences in stock returns. Quality-oriented investment strategies typically focus on firm characteristics that reflect strong fundamentals, sustainable performance, and lower exposure to adverse economic shocks. Over time, researchers have proposed a variety of accounting-based and operational measures to capture different dimensions of firm quality. This section reviews the key strands of literature related to the major quality dimensions examined in the present study.

A. Profitability as a Dimension of Firm Quality

Profitability has long been recognized as a central indicator of firm quality and operational efficiency. Early asset pricing studies primarily emphasized valuation ratios; however, subsequent research highlighted that measures of profitability possess strong explanatory power for future

stock returns. Novy-Marx (2013) demonstrated that gross profitability is a robust predictor of cross-sectional stock returns, even after controlling for traditional value measures. This finding contributed to the broader recognition of profitability as a core quality characteristic in equity markets.

Further evidence suggests that firms with higher returns on assets, return on equity, and operating profitability tend to generate superior long-term performance due to efficient utilization of capital and sustained competitive advantages (Ball et al., 2016). Profitability-based measures are also central to multifactor asset pricing models, such as the Fama–French five-factor model, which explicitly incorporates profitability as a priced factor (Fama & French, 2015). While much of the existing evidence is derived from developed markets, emerging market studies increasingly report similar associations, although with varying magnitudes and stability.

B. Accounting Quality and Earnings-Based Measures

Accounting quality represents another important dimension of firm quality, focusing on the reliability and informational content of reported earnings. A substantial body of literature examines accrual-based measures to assess the extent to which accounting numbers reflect underlying economic performance. Sloan (1996) provided early evidence that firms with high accruals tend to experience lower future stock returns, suggesting that investors may overprice earnings components that are less persistent.

Subsequent studies extended this line of research by examining alternative accrual measures and balance-sheet-based indicators such as net operating assets (Dechow et al., 1995; Ball et al., 2016). These studies argue that aggressive accounting practices or lower earnings quality may lead to mispricing, which eventually corrects over time. However, evidence on accounting quality effects in emerging markets is mixed, potentially due to differences in accounting standards, enforcement mechanisms, and institutional environments. This variability underscores the importance of examining accounting quality measures within specific market contexts.

C. Capital Structure and Financial Leverage

Capital structure decisions play a critical role in shaping firm risk profiles and return outcomes. The relationship between leverage and stock returns has been widely studied, with mixed findings across markets and time periods. Some studies suggest that higher leverage increases financial risk and may negatively affect future returns, particularly during economic downturns (George & Hwang, 2010). Excessive reliance on debt financing can constrain managerial flexibility and amplify the impact of adverse shocks.

At the same time, moderate leverage may enhance firm value by improving capital allocation efficiency and disciplining management (Titman et al., 2004). The empirical relationship between capital structure and returns

therefore remains complex and context-dependent. In emerging markets, where firms often face financing constraints and higher borrowing costs, leverage-related quality measures may have different implications compared to developed markets, warranting market-specific analysis.

D. Earnings Stability and Performance Consistency

Earnings stability has gained increasing attention as a dimension of firm quality, reflecting the consistency and predictability of firm performance over time. Firms with stable earnings streams are generally perceived as less risky and better positioned to withstand economic fluctuations. Prior research suggests that investors may place a premium on earnings stability due to its association with lower uncertainty and more reliable cash flows.

Studies examining earnings persistence and volatility indicate that firms with more stable earnings profiles tend to exhibit superior risk-adjusted performance (Hou et al., 2015). Earnings stability is also closely related to firm resilience, as stable firms are often better able to maintain operations and investment during periods of economic stress. While empirical evidence on earnings stability is well-established in developed markets, fewer studies provide comprehensive evidence from emerging markets, highlighting the relevance of further investigation.

E. Human Capital and Workforce Efficiency

More recently, researchers have begun to explore human capital as an important but less tangible dimension of firm quality. Human capital-based measures aim to capture the productivity, efficiency, and value contribution of a firm's workforce. Cascio and Boudreau (2011) emphasized the financial relevance of human capital investments, arguing that workforce-related metrics can provide meaningful insights into firm performance. Fitz-Enz (2009) proposed practical approaches for measuring the return on human capital, linking employee productivity to financial outcomes.

Empirical studies suggest that firms that manage human resources effectively may enjoy sustained competitive advantages, particularly in knowledge-intensive industries (Tanriverdi, 2006). However, measuring human capital remains challenging due to data limitations and the indirect nature of many workforce-related indicators. As a result, evidence on the relationship between human capital measures and stock returns remains heterogeneous, underscoring the need for further empirical examination.

IV. DATA AND VARIABLES

The empirical analysis in this study is based on firm-level financial and return data for publicly listed companies in the Indian equity market. The sample includes firms listed on major Indian stock exchanges and spans a long observation period, allowing for an extensive evaluation of quality-based long–short portfolio performance across different market conditions.

Financial statement information and stock return data are obtained from the CMIE ProwessIQ database, which provides comprehensive coverage of Indian listed firms. The dataset includes both active and inactive firms over time, thereby minimizing survivorship bias and ensuring that the sample reflects the evolving structure of the Indian equity market. Firms enter and exit the sample based on data availability in each year.

The study covers the period from 2004 to 2023. Portfolio formation is conducted annually using accounting information from the most recent fiscal year, while portfolio performance is evaluated using annualized return measures derived from monthly stock returns. This approach allows for a consistent alignment between accounting variables and subsequent return realizations.

To capture the multi-dimensional nature of firm quality, the study employs a broad set of accounting-based quality proxies grouped into five major dimensions. The profitability dimension includes measures such as return on assets, return on equity, return on invested capital, gross profitability, operating profitability, and gross margin. Accounting quality is represented using accrual-based measures and net operating assets. Capital structure characteristics are captured through leverage-related indicators, including debt-to-equity ratios, net debt relative to market value, and financial leverage.

Earnings stability is measured using indicators that reflect the consistency of firm performance over time, including the stability of earnings per share and profitability-related measures. In addition, the study incorporates human capital efficiency proxies, which aim to capture the productivity and effectiveness of a firm's workforce using accounting-based measures of human capital returns.

All quality variables are computed on an annual basis and treated independently in the portfolio construction process. The use of multiple proxies across distinct quality dimensions enables a comprehensive descriptive assessment of how different aspects of firm quality relate to long–short portfolio performance in the Indian equity market.

V. RESULTS AND DISCUSSION

This section presents and discusses the empirical results obtained from the quality-based long–short portfolio analysis. Portfolio performance is summarized using annualized return measures, return volatility, and risk-adjusted performance indicators. The results are intended to provide a descriptive assessment of how different quality characteristics relate to long–short return behavior in the Indian equity market.

The results reported in Table I indicate that portfolio performance varies substantially across different quality proxies. Profitability-related measures such as return on assets, operating profitability, and return on invested capital generally exhibit positive average long–short returns and relatively higher risk-adjusted performance. Similarly,

earnings stability indicators, particularly measures related to the stability of gross profitability, show comparatively strong performance with favorable Sharpe ratios.

TABLE I: DESCRIPTIVE STATISTICS OF QUALITY-BASED LONG–SHORT PORTFOLIO RETURNS

Quality Proxy	Mean Annual Return (%)	Volatility (%)	Sharpe Ratio
Accruals (Sloan)	0.13	1.82	0.07
Accruals2	-0.18	1.90	-0.09
Net Operating Assets	-4.15	4.11	-1.01
Debt–Equity	0.27	2.86	0.09
Net Debt / Market Value	1.42	3.37	0.42
Financial Leverage	-2.13	2.24	-0.95
ROA	2.52	2.62	0.96
ROE	1.28	2.12	0.60
ROIC	1.13	1.87	0.60
Operating Profitability	2.26	2.65	0.85
Gross Profitability	0.54	2.14	0.25
Gross Margin (%)	0.45	2.61	0.17
ES EPS	1.27	1.98	0.64
ES GM	1.53	2.25	0.68
ES GP	2.01	1.62	1.24
HCROI (Cascio–Boudreau)	-1.20	1.91	-0.63
HCROI (Fitz–Enz)	1.50	3.06	0.49
HCROI (Tanriverdi)	2.16	2.15	1.00

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In contrast, accounting quality measures based on accruals and net operating assets display mixed or negative long–short returns. This suggests that not all accounting-based indicators uniformly capture return-relevant quality characteristics in the Indian equity market. Capital structure measures also show heterogeneous results, with leverage-based indicators exhibiting both positive and negative performance depending on the specific proxy used.

Human capital efficiency measures demonstrate varying outcomes across different definitions. While some human capital proxies are associated with positive long–short returns, others show weaker or negative performance, indicating that the effectiveness of human capital indicators may depend on the specific measurement approach adopted. To provide a broader perspective, the study also examines average performance at the quality dimension level.

TABLE II: AVERAGE LONG–SHORT PERFORMANCE BY QUALITY DIMENSION

Quality Dimension	Avg. Annual Return (%)	Avg. Sharpe Ratio
Profitability	1.53	0.64
Accounting Quality	-1.40	-0.34
Capital Structure	-0.15	-0.15
Earnings Stability	1.60	0.85
Human Capital Efficiency	0.82	0.29

Table II shows that, on average, profitability and earnings stability dimensions are associated with relatively stronger long–short performance. Accounting quality and capital structure dimensions exhibit weaker average results, while human capital efficiency measures display moderate performance with noticeable variation across proxies.

Overall, the findings highlight the heterogeneous nature of quality-based investment signals and suggest that certain dimensions of quality may be more effective than others in generating long–short returns in the Indian equity market. The results are descriptive in nature and emphasize observable return patterns rather than formal statistical inference.

VI. CONCLUSION

This study set out to examine the performance characteristics of quality-based long–short equity portfolios in the Indian stock market using a broad set of accounting-based quality indicators. By adopting a transparent and portfolio-oriented empirical framework, the analysis provides descriptive evidence on how different dimensions of firm quality are associated with long–short return behavior over an extended sample period. The findings of the study underscore the multifaceted nature of firm quality and highlight the importance of carefully selecting quality measures when evaluating investment strategies in emerging equity markets such as India.

The empirical results reveal that quality characteristics related to profitability and earnings stability tend to exhibit relatively stronger long–short performance compared to other dimensions. Profitability-based indicators, including measures such as return on assets, return on equity, and operating profitability, demonstrate positive average long–short returns and favorable risk-adjusted performance. Similarly, earnings stability measures show consistent

performance patterns, suggesting that firms with more stable earnings profiles may offer advantages in long–short portfolio construction. These findings align with the intuitive notion that firms exhibiting sustained profitability and predictable performance are better positioned to generate differential returns over time.

In contrast, accounting quality and capital structure measures display more heterogeneous outcomes. Accrual-based indicators and net operating asset measures produce mixed or negative long–short performance, indicating that such variables may capture dimensions of firm behavior that do not consistently translate into return differentials in the Indian equity market. Likewise, leverage-related measures show varying results depending on the specific proxy employed, reflecting the complex relationship between capital structure decisions and equity returns in a dynamic and evolving market environment.

Human capital efficiency measures also present mixed evidence, with some proxies generating positive long–short returns while others exhibit weaker performance. This variation highlights the challenges associated with quantifying human capital using accounting-based measures and suggests that the effectiveness of such indicators may depend heavily on how workforce productivity and efficiency are defined and measured. The results imply that while human capital remains an important aspect of firm quality, its translation into systematic return patterns is not uniform across different metrics.

Overall, the findings emphasize that firm quality is not a singular or uniform concept but rather a collection of distinct attributes that influence return behavior in different ways. The heterogeneous performance observed across quality dimensions reinforces the importance of adopting a multidimensional perspective when analyzing quality-based investment strategies. Rather than relying on a single indicator, investors and researchers may benefit from evaluating multiple quality measures to gain a more comprehensive understanding of firm performance characteristics.

From a practical standpoint, the study offers useful insights for market participants interested in applying quality-oriented investment approaches in the Indian equity market. The descriptive evidence suggests that certain quality dimensions, particularly profitability and earnings stability, may be more relevant for long–short portfolio construction, while other dimensions require more cautious interpretation. For researchers, the study provides a market-specific reference point that can serve as a basis for further empirical investigation.

While the analysis provides valuable descriptive evidence, it is not without limitations. The study focuses on portfolio-level return characteristics and does not incorporate risk factor adjustments or formal asset pricing tests. Additionally, the use of accounting-based proxies may not fully capture all aspects of firm quality, particularly those

related to intangible assets and strategic capabilities. Future research may extend this work by exploring alternative quality measures, incorporating additional risk controls, or examining the interaction between quality characteristics and broader market conditions.

In conclusion, this study contributes to the applied literature on quality-based investing by offering a comprehensive descriptive assessment of long–short portfolio performance in the Indian equity market. The results highlight the importance of recognizing the multidimensional nature of quality and provide a foundation for future research aimed at deepening the understanding of quality-driven return patterns in emerging markets.

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