Indian Stock Market: A Cross-sectional Analysis of Returns and its Predictability

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Indian Stock Market: A Cross-sectional Analysis of Returns and its Predictability

This paper provides a comprehensive analysis of stock return predictability in the Indian stock market by employing both the portfolio and cross-sectional regressions methods. The data for the Indian stock market starts in January 1994 and ends in December 2018. We find strong predictive power of size, cash-flow-to-price ratio, momentum and short-term-reversal, and in some cases of book-to-market ratio, price-earnings ratio. The total volatility, idiosyncratic volatility, and beta are not consistent stock return predictors in the Indian stock market. In cross-sectional regression analysis, size, short-term reversal, momentum, and cash-flow-to-price ratio predict the future stock returns. For robustness check of the results, we divide the sample into small-size and large-size sub-samples, and the results for all stock and small stock samples are similar. Only momentum and cash flow to price ratio remain the predictor of cross-sectional stock returns in a large stock sample. Similar results exist for stocks listed in the National Stock Exchange and the Bombay Stock Exchange. Overall, the two variables momentum and cash flow to price ratio demonstrate reliable forecasting power under both methods.

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Introduction:

In 1947, India obtained freedom from British rule, emerging as one of the world's poorest nations, as it grappled with millions of refugees, food shortages, and a fledgling democracy. A young nation of 361 million people needed jobs, basic necessities, and healing after a bloody partition. India adopted a "Mixed Economy" model, modified Soviet-style central planning, where the state owned and ran large enterprises, while private enterprises could operate in highly regulated defined areas. The mid-50s saw moderate growth, but with droughts and floods ravaging the countryside in addition to wars with China in 1962 and Pakistan in 1965 and 1971, the 60s saw abysmal growth rates, a devalued currency, and a doubling down towards nationalization. Growth rates picked up in the 80s, only to run into severe deficits, further erosion in currency values, dwindling foreign exchange reserves, and a balance of payment crisis. A near-bankruptcy situation compelled a directional change. 1991 saw the first moves towards a market economy and fundamental changes in regulations that bore fruit through the next decade, transforming India into the fastest growing economy globally. By 1999, GDP growth rates touched 8.85%, and in consecutive years 2003-2007, India clocked growth rates just short of 8%. 2016 saw India eclipsing China for the first time with 8.5% growth. In 2017, earning India the title of "the fastest growing economy in the world." By the end of 2018, India had the 5^{th} largest nominal GDP globally and the 3^{rd} largest on a PPP basis.

The British left behind several functioning institutions: the Reserve Bank of India, an established judiciary, and functioning stock exchanges, possibly the best formal financial market in the developing world. Bombay Stock Exchange (BSE), which came into existence in 1875, was India's and Asia's first stock exchange. The first electronic exchange, modeled on NASDAQ's lines, was incorporated in 1992 – the National Stock Exchange (NSE). The BSE and the NSE are entirely online, where most of India's stock trading occurs. The average monthly trading volume is about $400 billion, about 15% of NYSE and NASDAQ combined, but higher than Euronext or the London Stock Exchange. The BSE and the NSE market capitalization together stood at $ 4.08 trillion - roughly equal to Shanghai and a little more than Euronext, although just about 12% of NYSE and NASDAQ together. With such global importance, understanding the features and characteristics of the Indian stock market became extremely important. This paper would like to provide a comprehensive analysis of stock return predictability in the Indian stock market by employing both the portfolio method and cross-sectional regressions.

Cross-sectional stock return predictability has been widely studied by researchers, especially those dealing with anomalies in finance. The risk-based asset-pricing model, such as the classical capital asset pricing model (CAPM) or intertemporal CAPM, or arbitrage pricing theory (APT) or

some variant of these models, will tie the predictability pattern to economically meaningful risk factors. Empirical studies show that these risk-based models are generally not very useful in explaining return predictability patterns dealing with tendencies such as continuation or momentum, overreactions, or reversals[2]. Instead, researchers find a statistically significant relationship between stock returns and predictors, using either the portfolio or cross-sectional regressions method. In the portfolio method, researchers utilize the value-weighted and or equal-weighted average monthly returns of quintile (or decile) portfolios sorted based on the predictor in question and analyzed to obtain meaningful return predictors. In the cross-sectional regressions method, researchers typically regress the firm-level return predictors on stock returns and analyze the regression results. Market efficiency implies that the cross-sectional regressions will result in statistically insignificant return predictors. However, the stock returns can be predicted by individual firm-level return predictors such as size,[3]momentum, and book-to-market ratios, producing a long-debated issue in finance and promoting behavioral models. It all started with Fama and French (1992 and 1993) [F&F], where they added size and market to book ratio as firm-specific variables. It then showed those firm-specific variables are predictors of stock return in a portfolio method of analysis. Fama-French (1995) separated the stocks into two groups, high and low book-to-market ratios, and then added two more firm-specific variables, earnings-to-price, and cash-flow-to-price ratios, and reported that these variables have a strong relationship with cross-section of stock returns at varying degrees. Fama-French (1998) divided the sample into value and growth stocks where value (growth) stocks are categorized by high (low) book-to-market, earnings to price, and cash flow to price and shows that the value premium is pervasive in 13 major developed nation markets where book to market, earnings to price, cash flow to price produce large value premiums. Titman, Wei, and Pincus Xie (2004) and Rajgopal and Venkatchalam (2007), among others, showed that anomalies identified in the US market also exist in many markets around the world.

The momentum which relates an asset's return with its recent performance history implies that past winning stocks will continue to win and past losers will continue to lose. With several variations, one can use momentum as a strategy to earn a well-defined return. For example, Jegadeesh and Titman (1993) report significant returns to buying winners and selling losers in the US market. Many researchers (e.g., Rouwenhorst (1998, 1999), Chan, Hameed, and Tong (2000), Grundy and Martin (2001)) have shown the momentum strategy's effectiveness in many countries. Many researchers later showed the robustness of this result by evaluating the effectiveness of momentum strategies in many countries over various time periods. Though momentum is an important factor for

[2] see, for example, Hong and Stein (1999), Bernard and Thomas (1989) and Fama and French (1996)
[3] See Banz (1981) was the first to show the size effect.

explaining the cross-section of stock returns everywhere (see Asness et al. (2013)), some argue that it may be caused by the credit rating of firms (Avramov et al. (2007) or profitability of momentum is low due to high trading costs (Lesmond, Schill, and Zhou, 2004). In Jegadeesh (1990) and Jegadeesh and Titman (1993), a second and equally important price pattern is documented – reversals. De Bondt and Thaler (1985) were the first to show the long-term reversal pattern attributed to investor's overreaction.

There are several papers that have attempted to test the validity of CAPM using data from the Indian stock market with some success, e.g., Varma (1988), Yalwar (1988), Srinivasan (1988), and later Basu and Chawla (2012). These papers used a limited sample; for example, Basu and Chawla (2012) analyzed ten portfolios covering only 50 stocks over five years to test CAPM. Indeed, as Mohanty (1998) pointed out, most of the research on the Indian stock market had small sample sizes and therefore have a bias in successfully checking the validity of the CAPM model.

Later, several attempts were made to empirically test the Indian stock market return using the Fama French 3-factor or some variation. For example, Connor and Sehgal (2004) tested F&F 3-factor mode using data of 364 firms and from June 1989 to March 1999 but with only 179 observations; Bahl (2006) using 79 firms and data from 2001 to 2006; Taneja (2010) using 187 firms and 2004 to 2009; and Aggarwal (2017) with 396 firms and for a period of 2009 to 2015. Ansari and Khan (2012) and Dhankar and Maheshwari (2014) found that momentum is a predictor of the Indian stock market returns.

These later researches testing the Fama-French 3-factor model also had a similar problem of small sample size or a skewed sample from highly traded Indian index stocks, thus avoiding small stocks altogether. No paper has analyzed all ten return predictors using a comprehensive dataset reflective of the depth of stock markets in India, covering a multi-decade relevant time frame commensurate with India’s emergence as a market economy updated to recent time. This paper provides a comprehensive analysis of the effectiveness of ten predictors in the Indian stock market on an average sample size of 910 stocks traded in India's two major markets, BSE and NSE, using 25 years of monthly returns data from January 1994 to December 2018.

We begin our analysis following the Fama-French (1992) procedure of dividing the portfolio of stocks into five quantiles of return predictability, from high to low, based on a particular predicting factor. Then we examine the differences between returns in the high and low quantiles. We find consistent predictive power in size, momentum, cash-flow-to-price, and short-term reversal, factors in this single variable analysis. In some cases, the book-to-market and earning to price factors also became significant predictors. Because we would like to check the effect of variables in small-cap

firms and large-cap firms, we divide the data using the median of the variable size into two small and large sub-samples. Similar to our earlier result, we find that the "risk factors" like beta, volatility, and idiosyncratic volatility are not consistent predictors of Indian stock returns. In the small and full sample, the size, momentum, short-term reversions, cash-flow to price, and book to market predict the stock return. But in the large-size sample, size, market to book, and short-term reversals are not significant. In the cross-sectional regression analysis of the full sample and the small-size sample, the same four variables - size, short term reversions, momentum, and cash-flow-to-price - are statistically and economically significant return predictors. However, in the large-size sample, size and short-term reversal are not significant, whereas momentum, cash-flow-to-price, have predictive ability. When we divide the sample of stocks based on their listing exchange, the results are still similar. Size and cash-flow-to-price are predictors in both markets, but short-term reversal explains BSE returns, while momentum is significant in the NSE market. The other two value or cheapness factors - book-to-market and earnings-to-price - also play a significant role in the BSE.

The paper is organized into several sections. First, in section 2, we explain why we chose the Indian stock market for this analysis. Section 3 covers the data, variable description, and empirical procedure; section 4 discusses the portfolio method results; section 5 reports the cross-sectional regression results; section 6 presents robustness tests, and section 7 concludes.

2. Major political and economic events in India

Independence in 1947 was a turning point in India's history, with the inheritance of one of the world's poorest economies from Britain, a nation where less than one-sixth of its population were literate at that time. Evidence shows that India's share of world income shrank from 22.6% in 1700—almost equal to Europe's share of 23.3% — to 3.8% in 1952, due to Britain's steady pilfering of wealth. However, India also inherited the best formal financial market in the developing world with four functioning stock exchanges and clearly defined rules governing listing, trading, and settlements. It also inherited a banking system with explicit lending norms and recovery procedures, and corporate laws better than other developing countries. The 1956 Indian Companies Act, other corporate laws, and laws protecting investors' rights were built on this foundation.

After independence, the Industrial Policy Resolution of 1948 proposed a mixed economy. The political leadership believed that since planning was not possible in a market economy, the state and public sector would inevitably play a leading role in economic progress. India set up the Planning Commission in 1950 to oversee the entire range of planning, including resource allocation, implementation, and appraisal on the basis of five-year plans. India's first five-year plan, launched in

1951, focused on agriculture and irrigation to boost farm output as India was losing precious foreign reserves on food grain imports. The plan was a success, with the economy growing at an annualized 3.6%, beating the target of 2.1%. The second five-year plan (1956-61) laid the foundation for economic modernization to serve India's long-term growth imperatives better. This plan was based on the Mahalanobis model that advocated rapid industrialization focusing on heavy industries and capital goods. The second five-year plan and the Industrial Policy Resolution 1956 (long considered India's economic constitution till liberalization in 1991) paved the way for developing the public sector and ushered in a system of the onerous licensing procedure for a private industry known as the period of "License Raj."

Moreover, India was in trouble with its border issues with Pakistan and China. While it fought several wars, with China in 1962 and with Pakistan in 1965 and 1967, India continued to follow the principles of a mixed planned economy. In the decades of the '60s and '70s, India had an average GDP growth rate, in constant Indian Rupees, of 3.91% and 2.93%, but in 1990, the Gulf War year, the growth rate fell to 1%. With oil prices going sky high and exports falling, India was forced to devalue its currency by 23% in one year. By 1991 India was ready for liberalization and slowly changed the rules and regulations to allow the Indian economy to open. A series of reforms followed, starting from a new industrial policy abolishing licensing, automatic approval of FDI up to 51% for 34 industries. Import licensing was removed for most products; in 1994, the telecom sector was opened for foreign investment, and in 1999, the insurance industry was opened up for the private sector. Indian average GDP growth rate in the '90s was 5.77%, which in the first decade of 2000 grew to 6.28%, a trend that continued until 2016. The ten year average per capita GDP in the current decade is Rs. 85K, or $1730, whereas on a PPP basis, it is equivalent to $5.5k. In 2018 India earned the title of "The fastest growing economy in the world," and by the end of 2018, India had the 5th largest nominal GDP globally and the 3rd largest on a PPP basis.

Social parameters, highly deficient in 1947, had to contend with burgeoning population growth; about a billion people have been added to India's population between 1947 and 2018. For instance, at the time of independence, India's literacy rate was a mere 12%, which by 2018, had climbed to 74.37%. In the first 43 years of a centrally controlled economy, GDP (PPP) per capita reached $1242 in 1990, but in the next 28 years, despite the rise in population, the corresponding figure in 2018 stood at $6650. Since moving in the direction of a market economy, India's Human Development Index improved by 50%, ranking India in the Medium Human Development category. Life expectancy at birth went up from 59.6 years in 1990 to 69.4 years in 2018.

One of the legacies of British Rule was India's stock exchanges. In 1850, 22 stockbrokers began informal trading under a large banyan tree opposite the Town Hall in Bombay (now Mumbai). It was not until 1875 that the formal Bombay Stock Exchange (BSE) came into existence. BSE was India's and Asia's first. Cotton produced in abundance in western India instigated the need for joint-stock companies. A second stock exchange was established in the western Indian city of Ahmedabad in 1894. Eastern India provided jute and tea to the world with Calcutta (now Kolkata) as its commercial capital. Thus the Calcutta Stock Exchange came into being in 1908. Madras in southern India, prominent for spices, followed suit in 1920. Overtime, 28 stock exchanges formed, of which only nine stock exchanges function today.

In the early 1990s, a stock market scam, perpetrated by the infamous Harshad Mehta, led to the formation of The National Stock Exchange (NSE) in 1992. Incorporated as a company, NSE was promoted by leading Indian financial institutions at the behest of the Government and modeled on the lines of NASDAQ, where dematerialized securities could be traded electronically for the first time in India. BSE and NSE account for the majority volume of daily trades in India, with both these exchanges being entirely online. Trading at both the exchanges takes place through an open electronic limit order book system providing transparency and traceability in the trading systems. The average monthly trading volume is about $400 billion, about 15% of NYSE and NASDAQ combined, but higher than Euronext or London Stock Exchange. Market Capitalization of BSE and NSE together stood at $ 4.08 trillion, roughly equal to Shanghai and a little more than Euronext, although just about 12% of NYSE and NASDAQ together. Over 5000 companies are listed in India compared with 3671 in the USA, although many are considered dormant. While major names are listed on both BSE and NSE, BSE being the older exchange has a higher number of listed companies, including those of smaller sizes. Like all major stock exchanges, both have dynamically updated indexes. For BSE, it is SENSEX comprising 30 names, while the NSE has the NIFTY comprising 50 names.

3. Data and Methodology:

We collect all the data for Indian stocks from Thompson Reuters Datastream, and it covers the period from January 1993 to December 2018. We include stocks from both the Bombay Stock Exchange (BSE) and from the National Stock exchange (NSE), resulting in a total average sample of 910 monthly stock returns. The stock prices are in US$, and the market return is calculated by taking all stocks available that year. The risk-free return is a US 1 month T-bill rate. The first year's data was used to calculate the momentum variable and the monthly return data started in January 1994.

The monthly stock returns are calculated as equally-weighted average (*ewret*) and value-weighted average (*vwret*), and daily returns are used to calculate the total volatility, market beta, idiosyncratic volatility. Monthly returns are also used to calculate proxies for momentum and short-term reversals. Share prices and shares outstanding are used to calculate market capitalization; the equity book values are used for calculating the book value and the book-to-market ratios of individual firms. Table 1 shows the variables used in this paper, and the variables can be broadly categorized into three groups: the stock characteristics, the risk measures, and behavioral measures.

(a) Log (size): Following the existing literature, firm size is measured by the natural logarithm of the market value of equity (a stock's price times shares outstanding in millions Rupee) at the end of month t-1 for each stock.

(b) Price: stock price at the end of month t-1 for each stock

(c) Market Value: Stock price multiplied by no. of outstanding stocks

The next three variables are the measures of risk.

(d) Beta (Stock's Beta): Following Scholes and Williams (1977) and Dimson and Mussavian (2000) using the lag of the market portfolio and the current market in estimating Beta:

$$\mathbf{R_{i,d} - r_{f,d} = \alpha_i + \beta_{1,i}\,(R_{m,d-1} - r_{f,d-1}) + \beta_{2,i}\,(R_{m,d} - r_{f,d}) + \varepsilon_{i,d}}$$

where $R_{i,d}$ is the return on stock *i* on day d, $R_{m,d}$ is the market return on day d, and $r_{f,d}$ is the risk free rate on day d. The market portfolio is the value-weighted return on all stocks included in the sample for that year. Once the above equation is estimated using daily returns within a month, the market beta of stock *i* in month t is defined as $\beta_i = \beta_{1,i} + \beta_{2,i}$

(e) STDEV (Stock's Standard Deviation): total volatility of the stock *i* in month *t* is defined as the standard deviation of daily returns within month t:

$$\mathbf{SD_{i,t} = SQRT[var(R_{i,d})]}$$

(f) SEE (Stock's Idiosyncratic Volatility): Monthly idiosyncratic volatility of an individual stock is obtained from the following single factor return generating process:

$$\mathbf{R_{i,d} - r_{f,d} = \alpha_i + \beta_i\,(R_{m,d} - r_{f,d}) + \varepsilon_{i,d}}$$

Where $\varepsilon_{i,d}$ is the idiosyncratic return on day *d*. The idiosyncratic volatility of stock *i* in month t is defined as the standard deviation of daily residuals in month t:

$$\mathbf{SSE_{i,t} = SQRT[var(\varepsilon_{i,d})]}$$

For *Beta*, *Stdev*, and *See*, we use daily stock returns up to month t-1, and the values we compute for these measures will be used to forecast stock returns in month t. The next two variables measure the behavioral factor that may affect the stock returns.

(g) STREV (Short-Term Reversal): Following Jegadeesh (1990) and Lehmann (1990), the reversal variable for each stock in month t is defined as the return on the stock over the previous month. (i.e. return in month t-1).

(h) MOM (Momentum): Following Jegadeesh and Titman (1993), the momentum variable for each stock in month t is defined as the cumulative return from month t-12 to month t-2 (previous 11 months starting one month ago)

(i) BKTMKT (Book-to-Market Ratio): computed as using the market value of its equity in month t-1 and the book value of common equity plus balance-sheet deferred taxes for the firm's latest fiscal year ending in the prior calendar year.

(j) CF/Price (Cash-flow-to-price ratio): computed by dividing the company's operating cash flow in the previous fiscal year by the company's market value in month t-1

(k) E/Price (Earnings-to-price ratio): the ratio of earnings to price for the company in month t-1.

The last three predictors (BKTMKT, CF/P, and E/P) are related to either value or "cheapness" of stocks. In the subsequent analysis, we will investigate whether we can employ these ten predictors in month t-1 to predict cross-sectional variations of returns in month t.

Panel A of Table II tabulates the average values of some variables in the sample period. Table I provides a summary of all the variables. The average market capitalization (SIZE), in logarithm, fluctuates between 5.50 and 6.85. The book-to-market ratio (BKTMKT) exhibits fluctuation over time, reaching a maximum of 2.15 in 2002, then fell to but reached another high of 2.0 in 2009 but slips to 0.79 in 2018. The market is quite volatile in 2000 and 2009, with the average standard deviation (STDEV) at 4.00% and 4.20% in these two years. The CF/P and E/P values were highest in 1999 and 2009 because of the market slump as stock prices fell due to the dot-com bust and the USA's financial crisis. Our sample has less than 300 firms in the first ten years, but becomes a significantly larger sample after 2007, with more than 1500 firms after 2009.

Table 2 Panel B shows the correlation among the variables. The price is strongly and positively correlated with market value and negatively correlated with all risk measures and value/cheapness measures. Not surprisingly, the three variables related to stock cheapness, i.e., book-

to-market ratio (BKMT), cash flow-to-price ratio (CFPR), and earnings-to-price ratio (EP), are positively correlated.

Before we explain our portfolio analysis results, the following procedure is carried out for obtaining our monthly variables. We start with the stock market data from January 1993 and first calculate the three risk variables Beta, Stdev, and SEE, using one year of return data. This procedure gives us Beta, Stdev, and SEE at the end of December 1993. Then we continue doing the same calculation on a rolling one-year basis for the next month and so on until we reach December 2018. This method gives us 300 month-end values for the above variables. We also calculate the values of the variable momentum and Short-term reversal from the prior 11 months and last month's stock return and keep calculating the same at the end of each month using rolling one-year data till December 2018. The variables, book value BV, Market value MV, BKTMKT, CF/PR, and E/PR, are also calculated at each month's end.

For the Portfolio method, we sort the stocks based on a predictor variable, e.g., size (Market value), then create the quintile portfolios from low to high size, and then calculate the return on those quintile portfolios in the following month i.e. January 1994. We keep doing it every month until the end of the data period, and we get 300 portfolio returns in each of the five groups. We report the averages of returns. Next, we sort using the second predictor variable at time t-1, calculate each of the five portfolios average stock return at time t, and continue this for all ten variables.

4. Single Variable Portfolio-Level Analysis

To demonstrate the effectiveness of return predictors, we first employed the portfolio method covering January 1994 to December 2018. Table III reports the equal-weighted and value-weighted quintile returns on portfolios of all stocks sorted into quintiles based on the predictors in question. There are altogether 10 return predictors: market capitalization or size, price, beta, total volatility (stdev), idiosyncratic volatility (see), short-term reversion or strev, momentum, book-to-market ratio, cash-flow-to-price ratio (cf/price), and earnings-to-price (e/price) ratio. The last column reports the average number of firms in each quintile. In addition to usual return information sorted into quintiles based on one firm-level predictor, Table III also shows how the other predictors react to the sorting. This information helps researchers understand the predictors' movement patterns other than the sorting predictor that determines the quintile returns.

Table III (A) Panel 1 (Size) uses market capitalization as the sorting predictor, and rows Low (High) represents the portfolio of stocks with the lowest (highest) quintile of the relative size. Their

equal-weighted (*ewret*) and value-weighted (*vwret*) average monthly returns are presented in the first two columns. Rows 2, 3, and 4 report the same for the second, third, and fourth quintiles of the relative firm size. Row (High-Low) corresponding to *the ewret* column reports the equal-weighted average raw return difference between quintile five and quintile one. It is equal to -0.82% per month with a corresponding Newey-West (1987) t-statistic of -2.05. Similarly, row (High-Low) corresponding to column *vwret* reports the highest to lowest quintile returns difference for the value-weighted portfolios as -0.82% per month with a Newey-West (1987) t-statistic of -1.88 %.

In addition to the average raw returns, Table III (A) Panel 1 (Size) also reports the alphas, the risk-adjusted returns obtained from the regression of the equal-weighted and value-weighted portfolio returns on a constant, and the excess market return. In the last row of Table III (A) Panel 1 (Size), the difference in alphas between the high and low portfolios is -0.97% per month with a Newey-West (1987) t-statistic of -2.82 for the equal-weighted stock return. The alphas' difference is -0.85% with a Newey-West (1987) t-statistic of -2.22 for the value-weighted portfolios. The differences in raw and risk-adjusted returns are statistically and economically significant at all conventional levels. Therefore, *size* is the first factor that has explanatory power in the Indian stock market. While we focused most of our attention on the first two columns of Table III (A) Panel 1, other columns of the Table reports information on the other predictors corresponding to different size quintiles. For example, in a column named MS, the market share shows that the firms that fall in the smallest size quintile have 0.30 percent market share while the largest quintile market share is 86.26 percent. We also see that momentum rises with the size and is equal to 12.32 for the first quintile's firms. Simultaneously, it is equal to 35.48 percent for the fifth quantile, showing an apparent positive relationship between momentum and size predictors. Overall, we see that when the sorting is made by the market capitalization, market share, price, and momentum increase with size, as we move from first to the fifth quintile.

Similarly, Table III (A) Panel 2 (Price) reports the returns when the stock price is used as the sorting return predictor. Raw returns difference for the equal-weighted portfolios is --0.33 % per month with a Newey-West (1987) t-statistic of -0.89, and the value-weighted one is 0.00% per month with a Newey-West (1987) t-statistic of 0.00. For risk-adjusted return differences, differences in alphas between the high and low portfolios are -0.28% per month with a Newey-West (1987) t-statistic of -0.8 for the equal-weighted and 0.26% with a Newey-West (1987) t-statistic of 0.54 for the value-weighted portfolios. The differences in raw return values are not even statistically significant at the 10 percent level. The other predictors, logarithmic size, market share, and

momentum, increase with the stock price level. The variables BKTMKT, CF/P, and E/P, are negatively related to price.

Table III (A) Panel 3 (Beta) reports the returns when the beta is used as the sorting return predictor. Raw returns difference for the equal-weighted portfolios is -0.07 % per month with a Newey-West (1987) t-statistic of -0.18, and the value-weighted one is -0.26 % per month with a Newey-West (1987) t- statistic of -0.60. For risk-adjusted return differences, the difference in alphas between the high and low portfolios is -0.73% per month with a Newey-West (1987) t-statistic of -2.74 for the equal-weighted and -0.94% with a Newey-West (1987) t-statistic of -2.91 value-weighted portfolios. The differences in raw return values are not statistically significant at the 5 percent level but significant for risk-adjusted returns.

Table III (A) Panel 4 (Stdev) reports the returns when sorted by total volatility (standard deviation). Raw returns difference for the equal-weighted portfolios is 0.38 % per month with a Newey-West (1987) t-statistic of 0.99, and the value-weighted one is -0.20% per month with a Newey-West (1987) t-statistic of -0.35. For risk-adjusted return differences, the difference in alphas between the high and low portfolios is -0.02% per month with a Newey-West (1987) t-statistic of -0.06 for equal-weighted and -0.84% with a Newey-West (1987) t-statistic of -1.93 for the value-weighted portfolios. The differences in raw and risk-adjusted returns are not statistically significant at the 5 percent level.

Table III (A) Panel 5 (SEE) reports the returns sorted by idiosyncratic volatility. Raw returns difference for the equal-weighted portfolio is 0.44% per month with a Newey-West (1987) t-statistic of 1.19, and the value-weighted one is -0.25% per month with a Newey- West (1987) t-statistic of -0.49. The last two rows report a difference in alphas as 0.18% per month with a Newey-West (1987) t-statistic of 0.58 for the equal-weighted and -0.63% Newey-West (1987) t-statistic of -1.50 for the value-weighted portfolios. Both of the risk-adjusted returns and those of difference in raw returns are not statistically and economically significant at all conventional levels. When sorting is done with idiosyncratic volatility, we see that total volatility, momentum, move together with SEE and increase, while market share, logarithmic market capitalization, and price decline.

Similarly, Table III (A) Panel 6 (*strev*) reports the return when short-term reversal, also defined as past month's return, is used as the sorting return predictor. Raw returns difference for the equal-weighted portfolios is -0.72% per month with a corresponding Newey-West (1987) t-statistic of -3.28, and the value-weighted one is 0.10 % per month with a Newey-West (1987) t-statistic of 0.24. The alphas' differences are -0.70% per month (t-statistic of -2.58) for equal-weighted and 0.14% (t-statistic of 0.36) for the value-weighted portfolios. The differences in raw and risk-adjusted returns

are statistically and economically significant at 1% levels when using equally weighted returns but not when using value-weighted returns.

Table III (A) Panel 7 (momentum) reports the returns when 12 months momentum is used as a sorting predictor[4]**.** Raw returns difference for the equal-weighted (value-weighted) portfolios is 1.71 % (1.29%) per month with a corresponding Newey-West (1987) t-statistic of 4.33 (2.30.). The differences in alphas between the high and low portfolios are -1.87% per month with a Newey-West (1987) t-statistic of 5.11 for the equal-weighted and 1.61% (with a t-statistic of 3.02) for the value-weighted portfolios. The differences in raw and risk-adjusted returns are statistically significant at a 1% level when using equally-weighted returns and statistically significant at 5 percent when using value-weighted returns. *Momentum* is the second most crucial factor that explains the Indian stock market returns. Size and prices variables move with momentum, and book-to-market moves in the opposite direction.

Table III (A) Panel 8 (BKTMKT) reports the returns when book-to-market-ratio is used as the sorting return predictor. The difference in raw returns for the equal-weighted portfolios is 1.12% per month (Newey-West (1987) t-statistic of 2.71), and the value-weighted portfolio is 0.66 % per month with a Newey-West (1987) t-statistic of 1.23. Alphas, the risk-adjusted return differences are reported as 1.01% per month with a Newey-West (1987) t-statistic of 3.06 for the equal-weighted and 0.26% with a Newey-West (1987) t-statistic of 0.58 for the value-weighted portfolios. The differences in raw and risk-adjusted returns calculated using equally-weighted returns are statistically and economically significant at 1% levels when book-to-market-ratio is used as the sorting predictor of quintile portfolios, not when calculated by value-weighted return. When sorted by *bktmkt*, we see that as the book-to-market ratio increases, cf/p and e/p increase, momentum, price, logarithmic size, and market share consistently decline.

Table III (A) Panel 9 (cf/p) reports the returns sorted by cash flow-to-price-ratio. The difference in raw returns for the equal-weighted (value-weighted) portfolios is 2.67% (1.28 %) per month with a Newey-West (1987) t-statistic of 9.07 (2.61). The risk-adjusted return differences are reported as 2.61% per month (t-statistic of 11.32) for the equal-weighted and 1.04% (t-statistic of 2.61) value-weighted portfolios. The differences in raw and risk-adjusted returns are statistically and economically significant at 1% confidence levels when cash flow- to-price-ratio is used as the sorting

[4]. Six months' momentum was also used but did not change the results significantly and therefore not reported but available upon request.

predictor of quintile portfolios for both equally-weighted and value-weighted returns. Cash flow-to-price-ratio appears to be one of the strongest return predictors out of the ten variables used.

Finally, Table III (A) Panel 10 (e/price) reports the returns when earnings-to-price-ratio is used as the sorting return predictor. The difference in raw returns for the equal-weighted portfolios is 0.78% per month with a Newey-West (1987) t-statistic of 2.27, and the value-weighted one is 0.41 % per month with a Newey-West (1987) t-statistic of 0.78. The risk-adjusted return differences are reported as 0.69% per month (t-statistic of 2.63) for the equal-weighted and 0.10% (t-statistic of 0.26) for the value-weighted portfolios. The differences in raw and risk-adjusted returns using equally weighted returns are statistically and economically significant at 5% levels when earnings-to-equity-ratio is used as the sorting predictor of quintile portfolios and not significant when value-weighted return is used. While the book-to-market ratio, and cash-flow-to-price move with the earnings-to-price ratio, the other predictors, price, and momentum, move in the opposite direction and decline.

Among the ten predictors, all three variables associated with the value or cheapness of stocks appear to have some degree of predictability in terms of economic and statistical significance**.** The absolute differences in both raw and risk-adjusted returns between the highest and lowest quintiles are the highest when the stocks are sorted based on cash flow-to-price ratio, followed by momentum and then the short-term reversal. The book-to-market ratio, earnings-to-price ratio, and size are not as strong as the other three variables.

Since the size is one of the main predictors of the return, to understand our return predictors' robustness, as a next step, we classified the firms as small and large by using the median market capitalization as the benchmark repeated the same analyses separately for both groups. Table III (B) and (C) report the small firms' and large firms' segment portfolio results.

The size was still an economically and statistically significant return predictor in the set of small stocks when we used both values-weighted and equally-weighted portfolios. However, it is not statistically significant in the set of large stocks regardless of the type of portfolio used, suggesting size has no explanatory power as a return predictor if we are dealing with the stocks with a market capitalization above the median value. Specific return values and corresponding Newey-West (1987) t-statistics are reported in Table III (B) in the same format as Table III (A). The stock price is statistically not a significant predictor for equally-weighted return in both subgroups, small and large. However, price is shown as a predictor of value-weighted returns only for the small stocks and does not have any predictive power for large samples or full sample of data. Evaluating Beta for small stocks would not change our conclusion obtained from the full set; Beta is not a statistically significant predictor for the subgroup of small stocks. The only case where *beta* has any predictive

power is in the large sample and *vwret* as a return measure. As we mentioned before, the beta was a significant predictor only when using market-adjusted returns in full sample data. It also shows up for the large sample while using *vwret* as a measure. However, we do not consider it an economically significant result as beta is negatively related to return. However, *stdev* or total volatility stays a statistically insignificant predictor for the full sample, small sample, and large sample for the measure raw return *(ewret*). The value for *stdev* is -0.84, -0.82, and -1.07 for the full-set of stocks, small stocks, and large stocks, respectively for value-weighted portfolios with Newey-West (1987) t-statistics of -1.93, -2.33, and -2.84, respectively. The total volatility or *stdev* becomes a statistically significant predictor for value-weighted returns but with a negative sign. It is an insignificant factor in all other measures. The next variable, idiosyncratic risk or *see,* also behaves the same way as *stdev,* but it not a significant predictor in the full sample. Our results suggest that the beta, total volatility or *stdev,* and idiosyncratic risk or *see* are not a reliable return predictor. Short-term reversal or *strev* stays as a statistically and economically significant predictor for the full sample and the subsets of small and large stocks while using *equally-weighted ret*urn as a measure. For the value-weighted return measure, *strev* is a statistically significant predictor only in the small stock sub-sample. In general, our analyses suggest that the past return is a strong return predictor in the Indian stock market.

The momentum continued to be a statistically significant return predictor in the Indian stock market. It is significant in small and large stock subgroups, regardless of the type of portfolio used, suggesting that momentum is a strong predictor of India's stock market returns. This result is very similar to the early results shown in the US and other global cross-sectional stock market studies.

Book-to-market-ratio is a strong stock return predictor with very consistent statistical significance only for small stocks subgroups in addition to the full set we evaluated earlier while using the equally-weighted portfolio. It is surprising to note that *bktmkt* losses its statistical significance while using *vwret,* and in the large stock sample, it is not a predictor of stock returns at all using both *ewret* and *vwret* measures. In this group of three "cheapness" or value variables – the cash flow-to-price ratio is the most important predictor of the Indian stock returns. The value of high minus low raw return for this predictor variable, cash flow-to-price ratio, is +2.67, 2.72, and 2.05 for the full-set of stocks, subsets of small stocks, and large stocks, respectively for equally-weighted portfolios, with Newey-West (1987) t-statistics of 9.07, 9.76, and 4.90 respectively. The cash flow-to-price variable is also statistically and economically significant while using *vwret* and for market-adjusted returns. The other value or cheapness variable earnings- to-price predicts equally-weighted stock returns only in the full sample and set of the small stock sample but not for the large stock sample. It also fails to be a statistically significant predictor of value-weighted returns.

5. Cross-Sectional Regression Analysis

As a next step, we employ cross-sectional regressions to reconfirm the portfolio method's results. Cross-sectional regressions are also helpful in discovering a more complex relationship, not obtainable from the portfolio method. To facilitate this, in each month from January 1994 to December 2018, we run a firm-level cross-sectional regression of the previous month's (December 1993) predictor variables on the monthly stock returns in the current month. We report the time-series averages of the cross-sectional regression slope coefficients and their associated Newey-West (1987) adjusted t-statistics. Our results are tabulated in three tables (Tables IV (A, B, C)); one for the full set of data, one for small stocks, and one for large stocks. We compute the beta, total volatility, and idiosyncratic volatility using the daily returns over the last month in all cross-sectional regression analysis. As an alternative, we also obtained the cross-sections by computing the beta, total volatility, and the idiosyncratic volatility from the daily returns over the past 12 months. Since the results are not substantially different, the latter is not reported in the paper but available upon request.

In Table IV (A), we first obtained our return predictors' regression coefficients by regressing them on monthly stock returns for the month in question, as reported in all cross-sectional analysis tables. For example, the first row of Table IV (A) shows that when we use the size as an explanatory (independent) variable and regress it on monthly stock returns, we obtain the slope coefficient value of -0.16 with the Newey-West (1987) adjusted t-statistics value of -2.27. It shows that size is a significant predictor of Indian Stock returns.

All cross-sectional tables have two panels, separated by a solid line. The top panel with ten return predictors shows the simple regression coefficients of the underlined return predictors. The bottom panel shows several alternative multiple regression results considering "controlled variables," enabling us to make more powerful conclusive statements for the same return predictors.

When we evaluate the top panel of simple regressions, all three cross-sectional tables have a great deal of consistency in signs and statistical significance of the slope coefficients: *Size*, *short-term reversal*, *momentum*, and *Cash-flow to Price* ratio are statistically significant and consistent in signs for the full, small stock samples. In large stock sets, only momentum and CF/price are significantly related to returns. This implies these two variables, momentum, and CF/price, are consistently influential in explaining the monthly stock returns, regardless of the subset (large, small, or full sample of stocks) when used as the only explanatory factor without controlling any

other return predictor. The *size*, *short-term reversal* variables are negatively related to stock returns, whereas *momentum* and *cash-flow to price* are positively related to stock returns.

Again, the return predictor *momentum* and Cash-flow-to-price ratio are consistently statistically significant in all three sets of stock samples, just like the ones obtained from the portfolio approach. *Size* is statistically significant for full and small stocks but not significant for the large stocks, precisely the result we found in the portfolio method. Similarly, in simple cross-sectional regressions, the beta is not significant for any stock samples, similar to what we obtained from the portfolio method. *Standard deviation* and *SEE* are also not statistically significant for full, small, and large stocks in simple cross-sectional regressions. Interestingly, *short-term reversal* is statistically significant for full and small stock samples in cross-sectional regressions and is negatively related to stock returns. For the large stock sample, however, it is neither significant nor negatively related to stock returns. In summary, with very few exceptions, the portfolio method and simple cross-sectional regressions will produce consistent signs and statistical significance in explaining the stock returns.

As a next step, we question our predictors' power as we control some other predictors. We tabulated our multiple regression results at the bottom panels of all three cross-sectional tables[5]

As expected, the cross-sections with multiple explanatory variables produced some exciting and meaningful results. First, *momentum and cash flow-to-price* ratios are statistically significant in all portfolio method results and all simple cross-sectional regression tests and multiple regression results with several different controls. *Size* becomes much more potent as a predictor in multiple regressions than the portfolio method's results. The *beta* is statistically significant in multiple regressions for only large stocks, implying that this risk variable may be a predictor for stock return and only work for large stocks while controlling other variables. However, the *stdev* and *see* has a negative sign though statistically significant, implies that only beta has predictive power for the large stocks. When we combine the beta and see none explains the Indian stock returns consistently, as evidenced by the sign and the statistical significance, therefore even beta is not a consistent predictor of large stock returns. *Short-term-reversal* loses its power as a predictor for large stock returns in multiple regression methods but remains a predictor of stock returns in full and small samples. It means short-term reversal only predicts the small stock returns as in many other countries. Among the cheapness or value factors, both book-to-market and earnings-to price losses their forecasting power for the large and small samples, but cash flow-to-price remains a strong

[5]. The bottom panels of the three cross-sectional tables present a subset of the regressions we run to uncover additional explanatory power. We report the most common forms with several explanatory variables for easy comparisons. Alternative regressions such as having short-term reversal but not the price and the like are also available upon request.

predictor of Indian Stock returns in all subsets of samples. Therefore, we can conclude that just like the cross-sectional results, the momentum and cash-flow-to-price ratio are two consistent and statistically significant predictors of the Indian stock returns.

6. Additional Analysis - Robustness Checks

In India, the Government never controlled the stock exchanges, and there were clear functional differences between the two exchanges in the 1990s when the NSE was formed. As we described earlier, the Bombay Stock exchange is the oldest stock exchange in India that targeted blue-chip listings before the 1990s. NSE was formed in 1992 for trading dematerialized (digital) stocks without a physical exchange. NSE started operating in 1994 and increased its stock trading transaction speed, and it was much faster than BSE. Over time, all other stock exchanges were closed, and NSE became more prominent and better over time. Through NSE was mandated to build on its Nasdaq-style market focusing on early-stage companies, it later attracted all the active stocks to be traded in NSE. Currently, most active stocks were traded initially in BSE, now trades in both BSE and NSE. In our sample from Datastream, stocks are categorized by their original stock exchange listing. Therefore, we can separate the two stock groups but cannot say with certainty that these stocks are not traded in both markets. Therefore, prima facie, we do not expect the results to be different in BSE and NSE groups. However, during the original listing, there were different firm characteristics in these two exchanges that may produce differences in return predictability. To test this hypothesis, in this section, we perform a portfolio-level analysis for the stocks listed in NSE and BSE separately.

Table VI Panel A presents results for the Bombay Stock Exchange (BSE) stock returns, while Table VI Panel B presents results for the National Stock Exchange (NSE) stock returns. We present the *ewret* and *vwret* columns on the average monthly returns for five quintiles of stocks sorted according to different predictors and report other firm characteristics' behavior. We focus on the row (high – low) that measures the difference between returns in decile1 and decile 5. For stocks listed in BSE, the differences in raw returns are statistically significant with a t-value of higher than 2.0 when the stocks are sorted based on some predictors, including size (-1.84%), *strev* (-1.46%), *bktmkt* (0.91%), *cf/price* (2.43%). The differences in risk-adjusted returns are also statistically significant for the same variables. The variables price and risk measures beta, stdev, and *see* are not statistically significant predictors of stock returns. For stocks listed in the National stock exchange, the differences in raw returns are statistically significant when we use the following predictors: size (-0.90%), *momentum* (2.20), *bktmkt* (1.70%), cf/price (3.20%). The

variables size, momentum, and *cf/price* are also a highly statistically significant predictor of market-adjusted returns.

The two exchange results are not very different from our full sample results except that the short-term reversal is a significant predictor in BSE stock returns but not significant in explaining NSE stock returns. In the national stock exchange, momentum is a significant predictor in stock returns but not significant in explaining BSE stock returns. In BSE, all three value or cheapness variables bktmkt, cf/price, and e/price are statistically and economically significant predictors of stock returns compared to NSE. In the BSE, e/price is not even a significant predictor of stock returns. Though this is a surprising result, the economic rationale is apparent in the first panel of results when the stocks are sorted by size. The quintile three value for BSE stocks is 2.83, and the same for NSE stock is 4.62. Therefore, the average size of the stocks in NSE is larger than in the BSE market. As we have seen before in the portfolio analysis, short-term reversal predicts stock returns in the small stock market; it also shows up in the BSE market.

In our tables, we have used many calculations as a robustness test. For example, in Tables III (A), (B), and (C), we have shown stock return predictors using value-weighted returns (vwret). Though most of our explanations given in the paper are for equally-weighted returns (ewret) results, vwret results are similar except in few cases for the risk measures. Since the size is a statistically significant predictor of returns in the full sample, we separated the samples into small and large stock samples using market value and repeated the same empirical work on small and large sub-sample. In the regression approach, we ran separate regression for full, small, and large sample tests. In the multiple regression section, we ran six different multiple regressions (see tables IV (A), (B) and (C) with different combinations of variables. Results, on the whole, are quite similar, as stated before.

7. Conclusion

This paper analyzes the cross-sectional stock return predictability in the Indian stock market with a sample size of 900 monthly returns covering the entire period of 25 years from January 1994 to December 2018. The average number of monthly stock returns for the first half (second half) of the sample is 300 (1500). It employs both portfolio method and cross-sectional regressions (single variables and multiple regressions) to report the predictive powers of ten return predictors traditionally used in many previous studies.

With monthly data from 1994 to 2018, we showed that the portfolio method confirms the strong predictive power of size, short-term reversal, momentum, book-to-market ratio, cash-flow-to-price ratio earnings-to-price ratio in the full sample. When we use the cross-sectional regressions method, size, short-term reversal, momentum, cash-flow-to-price ratio predicts stock return. Therefore both methods produce the expected sign and statistical and economic significance for the above-listed predictors. The risk measures beta, total risk, and idiosyncratic volatility are generally not significant or consistent stock return predictors in the Indian stock market. We find similar evidence for stocks listed on the National Stock Exchange and Bombay Stock Exchange.

The most critical variables, momentum, and cash-flow-to-price ratio, always turn out to be the statistically and economically significant predictor of Indian stock returns. Two other variables, size and short-term reversal, qualify as a useful predictor in both the portfolio and cross-sectional regression method in the full sample and small stock sample. When evaluated in isolated small and large stock sets, momentum turned out to be statistically significant for small stocks but very significant for the large ones.

In the three "cheapness" or value variables – the cash flow-to-price ratio turns out to be the most crucial predictor of Indian stock returns. It consistently predicts stock returns in the full-set of stocks, subsets of small stocks, and large stocks for equally-weighted portfolios as well as value-weighted portfolios. The cash flow-to-price variable is also the most statistically and economically significant stock return predictor for both raw returns and market-adjusted returns. The two other cheapness variables, book-to-market ratio and earnings–to–price ratio, predicts equally-weighted stock returns only in the full sample and the small sample, but not in large stock samples. It also fails to be a statistically significant predictor of value-weighted returns. We ran many robustness tests and separated the sample for BSE and NSE stocks, and the results are similar to our full sample result.

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Appendix A _Indian Stock Market

Table I

Variable	Description
EWRET	Equally-weighted return
VWRET	Value-weighted return
BV	Book Value
MV	Market Value
MS	Market Share
SIZE	Logarithmic of market capitalization for size
PRICE	Market price
BETA	Stock's beta
BKTMKT	Stock's book value to market value ratio
CF/P	Cash flow to price ratio
E/P	Earnings to price ratio
STDEV	Standard deviation of the stock returns
STREV	Short term reversal effect
SEE	Stock idiosyncratic risk
MOM	Momentum (cumulative return from month t-12 to month t-2)
SEE	Idiosyncratic volatility
nfirms	Yearly average of number of firms in each month

Table II

Panel A: Average Values of the Variables Over Time

year	average log(size)	average bktmkt	average cf/p	average e/p	average stdev	average see	average price	average nfirm
1994	5.98	0.52	0.12	0.07	3.63	3.37	18.16	136.3
1995	5.76	0.50	0.11	0.08	3.03	2.89	12.92	183.8
1996	5.68	0.91	0.15	0.11	2.92	2.69	10.04	239.4
1997	5.75	1.42	0.15	0.19	3.08	2.76	8.80	262.6
1998	5.57	1.74	0.22	0.18	3.40	3.00	5.86	262.4
1999	5.74	2.05	0.29	0.20	3.82	3.36	7.21	248.3
2000	5.86	1.42	0.20	0.15	4.00	3.61	7.27	259.7
2001	5.50	2.05	0.27	0.18	3.60	3.19	3.65	311.6
2002	5.51	2.15	0.41	0.21	3.38	3.11	3.69	323.4
2003	5.69	1.69	0.38	0.17	2.81	2.61	4.37	343.2
2004	6.12	1.30	0.33	0.17	3.30	2.89	6.36	413.4
2005	6.44	0.87	0.22	0.13	2.80	2.53	8.79	478.2
2006	6.55	0.69	0.12	0.09	3.03	2.63	8.59	676.2
2007	6.29	0.93	0.17	0.12	3.22	2.91	6.52	1324.7
2008	6.20	0.91	0.16	0.12	3.76	3.29	5.15	1485.5
2009	5.96	2.00	0.30	0.25	4.20	3.55	3.96	1533.7
2010	6.47	1.12	0.19	0.12	3.26	2.88	5.55	1476.8
2011	6.43	1.08	0.16	0.12	3.01	2.68	4.82	1674.3
2012	6.29	1.64	0.19	0.17	3.01	2.71	3.99	1689.4
2013	6.29	1.74	0.20	0.17	2.87	2.67	3.54	1618.9
2014	6.49	1.96	0.22	0.18	3.15	2.93	4.94	1574.6
2015	6.67	1.28	0.12	0.11	3.36	3.12	6.34	1542.8
2016	6.60	1.25	0.11	0.08	3.24	2.94	6.38	1574.3
2017	6.77	0.95	0.09	0.07	2.86	2.67	8.20	1695.8
2018	6.85	0.79	0.07	0.06	2.84	2.68	9.14	1797.9

Panel B: Correlation Matrix of the Variables

	ewret	MV	BV	mom	beta	stdev	see	vwret	Cf/p	e/p	strev
ewret	1.00	-0.01	0.01	0.05	-0.02	0.00	0.00	-0.02	0.04	0.01	0.00
mv	-0.01	1.00	-0.16	0.05	0.13	-0.23	-0.29	0.02	-0.06	-0.10	0.24
bv	0.01	-0.16	1.00	-0.10	-0.12	0.19	0.21	0.02	0.40	0.54	-0.15
mom	0.05	0.05	-0.10	1.00	0.03	0.03	0.04	0.04	0.04	-0.06	0.10
beta	-0.02	0.13	-0.12	0.03	1.00	0.23	0.03	-0.01	-0.05	-0.08	-0.03
stdev	0.00	-0.23	0.19	0.03	0.23	1.00	0.97	0.02	0.00	0.07	-0.18
see	0.00	-0.29	0.21	0.04	0.03	0.97	1.00	0.03	0.02	0.09	-0.19
vwret	-0.02	0.02	0.02	0.04	-0.01	0.02	0.03	1.00	0.04	0.01	0.03
Cf/p	0.04	-0.06	0.40	0.04	-0.05	0.00	0.02	0.04	1.00	0.36	-0.06
e/p	0.01	-0.10	0.54	-0.06	-0.08	0.07	0.09	0.01	0.36	1.00	-0.10
strev	0.00	0.24	-0.15	0.10	-0.03	-0.18	-0.19	0.03	-0.06	-0.10	1.00

Table III. (A) Univariate Portfolio sorts by different variables to full sample.

Size	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	2.03	1.87	0.30	1.53	2.67	0.34	0.25	12.32	1.45	0.64	3.98	3.84	182.12
2	1.82	1.82	1.27	3.01	1.55	0.21	0.16	25.34	3.34	0.86	3.53	3.27	182.02
3	1.44	1.46	3.20	4.03	1.13	0.19	0.13	29.24	5.05	0.95	3.26	2.93	182.05
4	1.21	1.23	8.97	5.13	0.78	0.16	0.10	34.71	8.95	0.96	2.94	2.57	182.06
High	1.21	1.05	86.26	6.87	0.55	0.12	0.08	35.48	16.08	1.00	2.65	2.18	182.03
High-Low	**-0.82**	**-0.82**											
t-stat	**-2.05**	**-1.88**											
capm-alpha	**-0.97**	**-0.85**											
t-stat	**-2.82**	**-2.22**											
Price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.72	1.17	2.43	2.09	2.76	0.32	0.24	3.79	0.42	0.79	4.03	3.81	184.04
2	1.58	0.93	4.68	3.14	1.60	0.25	0.17	21.91	1.20	0.91	3.46	3.15	181.23
3	1.46	1.24	10.66	3.92	1.11	0.19	0.13	28.30	2.53	0.94	3.20	2.86	181.52
4	1.56	1.04	26.55	4.79	0.73	0.15	0.10	35.44	5.34	0.93	2.99	2.62	181.62
High	1.39	1.17	55.68	5.91	0.48	0.11	0.07	47.85	25.44	0.84	2.67	2.33	181.87
High-Low	**-0.33**	**0.00**											
t-stat	**-0.89**	**0.00**											
capm-alpha	**-0.28**	**0.26**											
t-stat	**-0.80**	**0.54**											
beta	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.35	1.15	9.15	2.70	1.81	0.25	0.19	18.35	7.23	0.34	3.08	3.02	182.03
2	1.74	1.20	18.99	3.98	1.15	0.19	0.12	24.61	8.08	0.67	3.04	2.87	182.07
3	1.72	1.39	20.32	4.22	1.21	0.20	0.13	28.22	8.24	0.87	3.16	2.89	182.08
4	1.63	0.92	22.41	4.34	1.24	0.20	0.13	31.55	6.35	1.08	3.33	2.93	182.07
High	1.28	0.88	29.14	4.66	1.27	0.19	0.13	34.37	4.98	1.44	3.74	3.08	182.03
High-Low	**-0.07**	**-0.26**											
t-stat	**-0.18**	**-0.60**											
capm-alpha	**-0.73**	**-0.94**											
t-stat	**-2.74**	**-2.91**											
stdev	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.09	1.09	49.75	5.64	0.96	0.18	0.13	14.96	14.68	0.65	2.02	1.76	182.03
2	1.57	1.16	23.45	4.71	0.99	0.19	0.12	20.29	7.55	0.85	2.71	2.37	182.07
3	1.68	1.06	13.27	4.00	1.25	0.22	0.14	27.30	5.50	0.92	3.16	2.82	182.08
4	1.90	1.12	8.26	3.46	1.48	0.22	0.15	36.33	4.57	0.98	3.66	3.32	182.07
High	1.47	0.89	5.28	2.63	2.00	0.21	0.18	38.23	2.57	1.00	4.81	4.50	182.03
High-Low	**0.38**	**-0.20**											
t-stat	**0.99**	**-0.35**											
capm-alpha	**-0.02**	**-0.84**											
t-stat	**-0.06**	**-1.93**											

Table III. (A) Univariate Portfolio sorts to full samples (Continued).

see	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.14	1.07	60.39	5.99	0.95	0.18	0.13	14.24	14.16	0.76	2.07	1.72	182.03
2	1.46	1.27	19.78	4.84	0.95	0.18	0.11	19.55	7.81	0.91	2.72	2.35	182.07
3	1.67	1.03	10.40	3.97	1.24	0.21	0.13	27.04	5.97	0.93	3.16	2.82	182.08
4	1.87	0.87	6.33	3.35	1.47	0.23	0.15	38.99	4.55	0.93	3.64	3.34	182.07
High	1.58	0.82	3.09	2.38	2.08	0.22	0.18	37.28	2.39	0.88	4.77	4.54	182.03
High-Low	**0.44**	**-0.25**											
t-stat	**1.19**	**-0.49**											
capm-alpha	**0.18**	**-0.63**											
t-stat	**0.58**	**-1.50**											
strev	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.93	0.94	14.38	3.63	1.42	0.18	0.14	28.88	4.81	0.90	3.51	3.20	182.23
2	1.37	0.84	19.59	4.06	1.30	0.20	0.14	22.70	6.97	0.88	3.15	2.83	182.23
3	1.65	1.05	22.35	4.23	1.26	0.20	0.14	23.81	7.71	0.87	3.09	2.77	181.95
4	1.56	1.22	24.19	4.30	1.27	0.21	0.14	26.53	8.01	0.87	3.12	2.81	182.09
High	1.21	1.04	19.48	4.04	1.43	0.23	0.15	35.21	7.39	0.88	3.48	3.17	181.78
High-Low	**-0.72**	**0.10**											
t-stat	**-3.28**	**0.24**											
capm-alpha	**-0.70**	**0.14**											
t-stat	**-2.58**	**0.36**											
momentum	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.83	0.56	11.60	3.44	1.68	0.17	0.18	-34.87	3.72	0.88	3.47	3.14	182.04
2	1.26	0.79	18.47	3.89	1.44	0.20	0.14	-7.92	5.83	0.86	3.18	2.87	182.07
3	1.25	0.88	22.74	4.13	1.30	0.21	0.13	12.59	7.30	0.86	3.12	2.80	182.09
4	1.83	1.34	24.09	4.30	1.20	0.22	0.13	40.02	8.21	0.88	3.16	2.85	182.05
High	2.54	1.86	23.11	4.45	1.07	0.23	0.12	127.31	9.80	0.92	3.43	3.12	182.03
High-Low	**1.71**	**1.29**											
t-stat	**4.33**	**2.30**											
capm-alpha	**1.87**	**1.61**											
t-stat	**5.11**	**3.02**											
bktmkt	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.93	0.94	45.88	5.64	0.22	0.06	0.05	40.75	15.71	0.84	2.83	2.50	182.46
2	1.35	1.21	26.94	4.68	0.52	0.11	0.08	33.68	9.79	0.91	3.07	2.73	182.95
3	1.50	1.35	16.10	4.02	0.89	0.18	0.12	28.17	4.61	0.93	3.25	2.91	183.01
4	1.87	1.57	8.44	3.43	1.45	0.26	0.17	21.97	2.96	0.91	3.39	3.08	182.62
High	2.06	1.61	2.63	2.39	3.66	0.41	0.29	12.32	1.72	0.81	3.82	3.58	179.25
High-Low	**1.12**	**0.66**											
t-stat	**2.71**	**1.23**											
capm-alpha	**1.01**	**0.26**											
t-stat	**3.06**	**0.58**											

Table III. (A) Univariate Portfolio sorts to full samples (continued)

cf/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.15	0.61	26.32	4.25	1.06	-0.12	0.10	19.77	9.66	0.84	3.30	2.99	182.07
2	1.08	1.15	31.47	5.02	0.63	0.08	0.07	27.91	11.49	0.87	2.96	2.62	182.20
3	1.55	1.40	22.68	4.30	0.96	0.14	0.11	28.41	6.91	0.91	3.15	2.81	182.19
4	2.12	1.66	12.93	3.74	1.37	0.25	0.15	30.72	4.28	0.91	3.34	3.02	182.23
High	2.82	1.89	6.60	2.91	2.68	0.67	0.28	30.30	2.52	0.87	3.60	3.32	181.59
High-Low	**2.67**	**1.28**											
t-stat	**9.07**	**2.61**											
capm-alpha	**2.61**	**1.04**											
t-stat	**11.32**	**2.61**											
e/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.09	0.98	30.60	4.61	0.75	0.08	0.02	39.30	11.28	0.86	3.18	2.86	182.53
2	1.50	1.20	30.76	4.84	0.81	0.11	0.06	30.18	10.50	0.87	3.06	2.73	182.93
3	1.49	1.03	20.12	4.21	1.08	0.17	0.09	26.35	6.36	0.90	3.19	2.87	182.93
4	1.76	1.45	13.09	3.68	1.45	0.24	0.15	24.07	4.24	0.90	3.34	3.02	182.61
High	1.87	1.39	5.44	2.93	2.62	0.43	0.39	17.01	2.41	0.87	3.60	3.31	179.28
High-Low	**0.78**	**0.41**											
t-stat	**2.27**	**0.78**											
capm-alpha	**0.69**	**0.10**											
t-stat	**2.63**	**0.26**											

Table III. (B) Univariate Portfolio Sorts to Small Stocks.

size	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	2.21	2.02	2.52	0.82	3.25	0.39	0.31	7.35	0.87	0.52	4.20	4.10	91.16
2	1.86	1.83	8.03	2.02	2.09	0.29	0.19	17.35	2.02	0.76	3.77	3.58	90.85
3	1.91	1.91	16.09	2.73	1.71	0.21	0.17	23.79	2.52	0.82	3.59	3.35	91.03
4	1.72	1.75	27.64	3.28	1.39	0.21	0.15	26.83	4.18	0.89	3.46	3.18	90.88
High	1.41	1.43	45.71	3.78	1.23	0.20	0.13	27.78	4.21	0.93	3.33	3.01	90.95
High-Low	**-0.80**	**-0.58**											
t-stat	**-2.56**	**-1.80**											
capm-alpha	**-1.15**	**-0.86**											
t-stat	**-4.04**	**-2.92**											
price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.92	1.05	9.84	1.44	3.51	0.36	0.30	-0.99	0.26	0.71	4.39	4.22	92.99
2	1.64	1.40	14.44	2.22	2.17	0.30	0.19	11.01	0.67	0.79	3.75	3.53	90.43
3	1.93	2.01	18.96	2.67	1.68	0.24	0.18	22.81	1.24	0.83	3.56	3.31	90.51
4	1.70	1.52	24.90	3.10	1.31	0.21	0.15	29.93	2.23	0.83	3.38	3.13	90.36
High	1.92	1.85	31.85	3.44	0.97	0.19	0.12	40.60	9.44	0.77	3.24	3.02	90.58
High-Low	**0.01**	**0.80**											
t-stat	**0.03**	**2.27**											
capm-alpha	**-0.03**	**0.93**											
t-stat	**-0.09**	**2.48**											
beta	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.45	0.86	11.99	1.74	2.54	0.34	0.26	14.70	2.83	0.25	3.28	3.24	90.99
2	2.07	1.77	17.31	2.49	1.70	0.23	0.16	21.22	3.28	0.57	3.58	3.47	90.92
3	2.01	1.80	21.12	2.82	1.74	0.25	0.17	22.27	2.88	0.78	3.65	3.46	91.04
4	1.95	1.77	23.43	2.98	1.78	0.25	0.17	22.70	2.72	1.00	3.77	3.47	90.92
High	1.62	1.65	26.15	3.14	1.92	0.23	0.18	22.23	2.08	1.34	4.07	3.58	90.99
High-Low	**0.17**	**0.80**											
t-stat	**0.44**	**1.88**											
capm-alpha	**-0.50**	**0.17**											
t-stat	**-1.52**	**0.47**											
stdev	**ewret**	**vwret**	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.40	1.45	23.98	2.97	1.93	0.32	0.23	8.89	3.59	0.54	2.31	2.15	90.99
2	1.94	1.83	23.99	3.01	1.57	0.26	0.17	15.87	3.86	0.76	3.13	2.89	90.92
3	2.14	1.99	21.35	2.85	1.73	0.25	0.16	22.76	3.15	0.85	3.55	3.30	91.04
4	2.10	1.87	18.49	2.61	1.86	0.23	0.18	28.73	2.12	0.91	4.03	3.77	90.92
High	1.53	0.92	12.19	1.80	2.58	0.25	0.21	26.79	1.07	0.87	5.32	5.11	90.99
High-Low	**0.13**	**-0.52**											
t-stat	**0.38**	**-1.51**											
capm-alpha	**-0.20**	**-0.82**											
t-stat	**-0.62**	**-2.33**											

Table III. (B) Univariate Portfolio Sorts to Small Stocks.

see	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.41	1.49	25.74	3.11	1.92	0.32	0.23	6.31	3.28	0.63	2.34	2.12	90.99
2	1.99	1.85	24.80	3.07	1.59	0.24	0.16	15.50	4.11	0.81	3.14	2.88	90.92
3	1.97	1.82	20.96	2.83	1.72	0.26	0.17	23.71	3.16	0.84	3.55	3.30	91.04
4	2.22	2.00	17.45	2.52	1.85	0.23	0.18	30.05	2.11	0.86	4.02	3.79	90.92
High	**1.52**	**0.75**	11.05	1.68	2.60	0.25	0.21	27.47	1.14	0.78	5.30	5.13	90.99
High-Low	**0.11**	**-0.74**											
t-stat	**0.36**	**-2.32**											
capm-alpha	**-0.11**	**-0.90**											
t-stat	**-0.34**	**-2.92**											
strev	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	2.81	2.00	18.37	2.54	1.93	0.22	0.18	24.29	2.18	0.80	3.85	3.62	91.31
2	1.92	1.64	20.45	2.75	1.88	0.25	0.18	17.17	2.78	0.81	3.57	3.34	91.53
3	1.79	1.67	20.67	2.77	1.88	0.26	0.19	16.56	2.77	0.78	3.50	3.27	90.82
4	1.88	2.01	20.84	2.77	1.90	0.27	0.19	19.57	3.06	0.77	3.54	3.32	90.46
High	0.73	0.95	19.68	2.67	2.08	0.30	0.20	25.55	3.00	0.77	3.88	3.68	90.74
High-Low	**-2.08**	**-1.05**											
t-stat	**-6.62**	**-2.90**											
capm-alpha	**-2.07**	**-1.02**											
t-stat	**-6.41**	**-2.88**											
momentum	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.08	0.46	17.45	2.46	2.22	0.19	0.23	-39.71	1.49	0.79	3.78	3.53	91.01
2	1.63	1.39	19.02	2.62	2.04	0.24	0.19	-12.85	2.54	0.79	3.60	3.36	90.91
3	1.66	1.51	20.29	2.73	1.91	0.26	0.17	7.14	2.87	0.79	3.59	3.37	91.04
4	1.95	1.99	20.95	2.79	1.82	0.29	0.17	33.39	3.19	0.78	3.62	3.40	90.92
High	2.78	2.65	22.29	2.91	1.70	0.32	0.18	115.08	3.71	0.78	3.76	3.56	90.99
High-Low	**1.70**	**2.19**											
t-stat	**4.34**	**5.57**											
capm-alpha	**1.89**	**2.41**											
t-stat	**5.34**	**5.97**											
bktmkt	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.28	1.28	28.16	3.25	0.44	0.09	0.09	30.14	5.06	0.79	3.48	3.25	91.57
2	1.57	1.54	23.75	2.99	0.90	0.18	0.13	25.90	3.36	0.81	3.50	3.26	91.57
3	2.05	1.96	19.92	2.72	1.38	0.25	0.17	22.09	2.50	0.81	3.59	3.35	91.80
4	2.05	1.87	16.92	2.47	2.10	0.28	0.21	16.40	1.83	0.79	3.76	3.54	91.03
High	2.19	1.88	11.26	1.79	4.96	0.50	0.36	8.24	1.01	0.72	4.03	3.83	88.91
High-Low	**0.91**	**0.60**											
t-stat	**3.04**	**1.78**											
capm-alpha	**0.93**	**0.45**											
t-stat	**3.32**	**1.38**											

Table III. (B) Univariate Portfolio Sorts to Small Stocks (continued).

cf/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.36	0.14	20.53	2.75	1.72	-0.22	0.15	6.02	3.29	0.78	3.79	3.57	91.01
2	1.07	1.01	23.97	2.99	1.18	0.11	0.12	16.33	3.83	0.78	3.51	3.28	90.98
3	1.94	1.90	22.28	2.90	1.47	0.20	0.14	25.03	3.01	0.80	3.54	3.30	91.23
4	2.67	2.78	18.75	2.64	1.85	0.33	0.18	27.64	2.37	0.81	3.70	3.47	90.94
High	3.08	2.93	14.48	2.13	3.47	0.88	0.35	28.06	1.29	0.77	3.81	3.60	90.72
High-Low	**2.72**	**2.79**											
t-stat	**9.76**	**8.04**											
capm-alpha	**2.73**	**2.70**											
t-stat	**11.04**	**9.28**											
e/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.50	1.43	21.71	2.82	1.40	0.11	0.03	24.29	3.45	0.75	3.70	3.50	91.24
2	1.78	1.70	22.80	2.93	1.46	0.17	0.08	22.38	3.17	0.79	3.63	3.40	91.49
3	1.81	1.57	22.01	2.86	1.56	0.22	0.13	22.59	3.39	0.80	3.56	3.33	91.62
4	2.06	1.73	18.89	2.63	1.96	0.31	0.19	20.59	2.33	0.79	3.67	3.44	91.22
High	1.97	1.71	14.59	2.19	3.34	0.50	0.53	13.00	1.40	0.79	3.79	3.57	89.30
High-Low	**0.48**	**0.28**											
t-stat	**1.80**	**0.88**											
capm-alpha	**0.43**	**0.15**											
t-stat	**1.79**	**0.52**											

Table III. (C) Univariate Portfolio Sorts by to Large Stocks.

size	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.47	1.47	2.04	4.29	1.03	0.18	0.12	30.71	5.85	0.96	3.20	2.85	91.09
2	1.13	1.11	3.28	4.82	0.85	0.17	0.11	35.41	8.28	0.96	3.01	2.65	91.08
3	1.31	1.32	6.00	5.48	0.72	0.15	0.09	34.00	9.60	0.95	2.87	2.49	91.06
4	1.27	1.25	13.52	6.29	0.61	0.13	0.08	36.00	13.64	0.97	2.71	2.29	91.08
High	1.14	1.03	75.16	7.73	0.49	0.12	0.07	35.01	18.52	1.02	2.58	2.07	91.08
High-Low	**-0.33**	**-0.44**											
t-stat	**-1.04**	**-1.27**											
capm-alpha	**-0.23**	**-0.32**											
t-stat	**-0.77**	**-1.01**											
price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.08	0.90	6.91	4.88	1.30	0.23	0.14	19.03	1.13	1.10	3.21	2.76	91.44
2	1.20	1.08	12.73	5.25	0.90	0.17	0.11	26.52	2.93	1.06	3.03	2.58	90.99
3	1.45	1.06	18.94	5.41	0.64	0.14	0.09	32.38	5.38	0.99	2.88	2.47	90.97
4	1.26	0.96	22.81	5.75	0.50	0.11	0.07	40.16	9.38	0.90	2.69	2.32	90.96
High	1.33	1.22	38.61	6.42	0.36	0.09	0.06	53.06	37.12	0.83	2.56	2.21	91.05
High-Low	**0.25**	**0.32**											
t-stat	**0.64**	**0.70**											
capm-alpha	**0.52**	**0.61**											
t-stat	**1.57**	**1.55**											
beta	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.86	1.03	16.96	5.50	0.49	0.10	0.07	27.12	16.54	0.51	2.35	2.21	91.08
2	1.39	1.25	19.20	5.45	0.64	0.14	0.08	30.60	13.22	0.77	2.58	2.31	91.08
3	1.45	1.24	19.30	5.40	0.77	0.16	0.10	33.75	11.13	0.94	2.83	2.46	91.07
4	1.53	0.92	21.09	5.41	0.88	0.17	0.11	38.10	8.28	1.14	3.07	2.57	91.08
High	1.08	0.87	23.45	5.71	0.92	0.17	0.11	41.54	6.71	1.51	3.56	2.79	91.08
High-Low	**0.22**	**-0.16**											
t-stat	**0.49**	**-0.37**											
capm-alpha	**-0.44**	**-0.87**											
t-stat	**-1.42**	**-2.63**											
stdev	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.14	1.02	35.49	6.31	0.47	0.10	0.07	16.56	19.43	0.66	1.95	1.68	91.08
2	1.26	1.15	24.64	5.82	0.63	0.14	0.09	20.97	12.95	0.86	2.44	2.07	91.08
3	1.34	1.20	16.52	5.42	0.78	0.17	0.10	28.15	8.75	0.98	2.80	2.39	91.07
4	1.53	1.12	13.03	5.12	0.88	0.18	0.11	40.78	7.65	1.10	3.21	2.76	91.08
High	1.04	0.65	10.31	4.95	0.95	0.16	0.11	64.64	7.12	1.27	3.97	3.44	91.08
High-Low	**-0.09**	**-0.37**											
t-stat	**-0.20**	**-0.69**											
capm-alpha	**-0.68**	**-1.07**											
t-stat	**-2.25**	**-2.84**											

Table III. (C) Univariate Portfolio Sorts to large Stocks.

see	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.17	1.08	45.53	6.68	0.52	0.11	0.08	14.89	18.64	0.79	2.01	1.63	91.08
2	1.20	1.01	22.06	5.91	0.65	0.14	0.09	19.13	11.94	0.90	2.46	2.05	91.08
3	1.30	1.28	13.60	5.41	0.76	0.16	0.10	27.18	9.41	0.99	2.80	2.38	91.07
4	1.54	1.10	10.59	5.03	0.86	0.17	0.10	39.64	8.27	1.06	3.19	2.77	91.08
High	1.11	0.68	8.22	4.83	0.93	0.16	0.10	70.28	7.65	1.13	3.91	3.51	91.08
High-Low	**-0.06**	**-0.40**											
t-stat	**-0.16**	**-0.88**											
capm-alpha	**-0.48**	**-0.82**											
t-stat	**-1.67**	**-2.43**											
strev	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.92	0.86	16.80	5.33	0.76	0.14	0.09	35.24	8.80	1.02	3.02	2.60	91.14
2	1.14	0.93	20.02	5.50	0.71	0.14	0.09	28.74	11.31	0.96	2.78	2.37	91.06
3	1.37	1.04	21.57	5.55	0.71	0.15	0.09	30.28	12.07	0.95	2.74	2.34	91.05
4	1.39	1.30	22.51	5.64	0.72	0.15	0.09	32.55	11.92	0.95	2.78	2.38	91.08
High	1.50	1.07	19.10	5.48	0.81	0.17	0.10	44.30	11.79	0.99	3.05	2.65	91.07
High-Low	**0.58**	**0.21**											
t-stat	**1.94**	**0.50**											
capm-alpha	**0.60**	**0.25**											
t-stat	**1.88**	**0.60**											
momentum	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.21	0.53	15.00	5.24	0.89	0.13	0.11	-27.28	7.62	1.02	2.97	2.52	91.08
2	1.05	0.95	20.58	5.49	0.77	0.14	0.10	-1.68	9.43	0.95	2.72	2.31	91.08
3	1.14	0.85	22.93	5.64	0.71	0.15	0.09	18.77	12.06	0.94	2.71	2.31	91.07
4	1.64	1.38	22.59	5.67	0.68	0.15	0.09	46.71	12.82	0.95	2.81	2.42	91.08
High	2.27	1.94	18.91	5.55	0.66	0.16	0.08	134.59	13.98	1.01	3.17	2.78	91.08
High-Low	**2.06**	**1.41**											
t-stat	**4.71**	**2.62**											
capm-alpha	**2.25**	**1.67**											
t-stat	**5.46**	**3.17**											
bktmkt	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	1.01	1.06	32.69	6.28	0.16	0.05	0.04	44.34	20.30	0.83	2.62	2.28	91.27
2	1.15	0.93	21.45	5.61	0.33	0.08	0.06	37.58	14.00	0.91	2.78	2.40	91.44
3	1.22	1.16	20.22	5.44	0.55	0.12	0.08	35.11	11.54	0.98	2.89	2.48	91.28

4	1.27	1.32	16.62	5.25	0.88	0.18	0.11	30.71	6.08	1.05	2.98	2.53	91.20
High	1.68	1.40	9.03	4.94	1.80	0.31	0.18	23.31	3.89	1.10	3.11	2.65	90.21
High-Low	**0.67**	**0.34**											
t-stat	**1.39**	**0.66**											
capm-alpha	**0.34**	**-0.05**											
t-stat	**1.03**	**-0.13**											

Table III. (C) Univariate Portfolio Sorts to large Stocks.

cf/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.01	0.49	24.92	5.83	0.42	-0.01	0.05	31.57	15.47	0.92	2.84	2.46	91.12
2	1.14	1.18	22.69	5.77	0.40	0.07	0.06	32.78	14.19	0.89	2.74	2.37	91.15
3	1.37	1.25	21.17	5.51	0.57	0.11	0.08	35.26	12.66	0.94	2.78	2.39	91.15
4	1.74	1.56	18.63	5.29	0.84	0.18	0.11	35.71	8.04	1.03	2.95	2.52	91.05
High	2.06	1.58	12.58	5.03	1.48	0.40	0.18	35.79	5.52	1.08	3.06	2.61	90.95
High-Low	**2.05**	**1.09**											
t-stat	**4.90**	**2.27**											
capm-alpha	**1.90**	**0.81**											
t-stat	**6.42**	**2.16**											
e/price	ewret	vwret	ms	log(size)	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirms
Low	0.86	0.99	25.41	5.89	0.37	0.06	0.02	49.47	16.44	0.94	2.86	2.47	91.31
2	1.31	1.13	24.53	5.80	0.43	0.08	0.05	36.65	13.78	0.91	2.76	2.39	91.44
3	1.40	1.18	19.75	5.47	0.61	0.12	0.07	31.85	12.84	0.93	2.80	2.42	91.41
4	1.30	1.25	18.53	5.29	0.84	0.17	0.11	29.10	7.94	1.00	2.90	2.48	91.29
High	1.45	1.38	11.79	5.06	1.47	0.31	0.23	24.01	4.80	1.10	3.05	2.58	89.96
High-Low	**0.59**	**0.39**											
t-stat	**1.36**	**0.77**											
capm-alpha	**0.41**	**0.12**											
t-stat	**1.36**	**0.30**											

Table IV. (A) – Cross-Sectional Regressions – Full Samples

SIZE	PRICE	BETA	SD	SEE	STREV	MOM	BKMK	CFPR	EP	R2
-0.16										0.02
-2.27										
	-0.09									0.02
	-1.02									
		-0.25								0.03
		-0.66								
			0.06							0.02
			0.51							
				0.10						0.02
				0.86						
					-0.02					0.01
					-3.26					
						0.01				0.02
						4.05				
							0.11			0.01
							1.85			
								1.27		0.00
								6.77		
									0.52	0.00
									1.35	
-0.26	0.10	0.38	-0.13		-0.03	0.01	0.09			0.08
-3.26	1.19	1.02	-1.52		-5.42	5.25	1.49			
-0.26	0.09	0.36	-0.10		-0.04	0.01		0.99		0.08
-3.29	1.04	0.96	-1.13		-5.68	5.00		4.69		
-0.28	0.06	0.37	-0.14		-0.03	0.01			0.11	0.08
-3.47	0.64	0.99	-1.60		-5.29	5.21			0.30	
-0.26	0.10	0.30		-0.13	-0.03	0.01	0.09			0.08
-3.30	1.18	0.77		-1.52	-5.43	5.24	1.45			
-0.26	0.09	0.29		-0.10	-0.04	0.01		0.99		0.08
-3.32	1.04	0.75		-1.13	-5.69	5.00		4.67		
-0.28	0.06	0.28		-0.13	-0.03	0.01			0.11	0.08
-3.51	0.64	0.74		-1.62	-5.30	5.21			0.28	

Table IV. (B) – Cross-Sectional Regressions – Small Stocks

SIZE	PRICE	BETA	STDEV	SEE	STREV	MOM	BKMK	CFPR	EP	R2
-0.24										0.01
-2.50										
	-0.03									0.01
	-0.27									
		-0.15								0.03
		-0.39								
			0.03							0.01
			0.26							
				0.04						0.01
				0.38						
					-0.05					0.01
					-6.76					
						0.01				0.01
						3.44				
							0.04			0.01
							0.53			
								1.16		0.00
								5.68		
									0.11	0.00
									0.37	
-0.43	0.21	0.35	-0.03		-0.06	0.01	0.08			0.07
-3.93	1.98	0.98	-0.30		-7.96	4.09	1.25			
-0.42	0.18	0.35	0.00		-0.07	0.01		1.09		0.07
-3.95	1.69	0.96	0.04		-8.30	3.71		4.35		
-0.47	0.14	0.36	-0.04		-0.06	0.01			0.15	0.07
-4.30	1.30	0.98	-0.42		-7.93	4.13			0.46	
-0.43	0.21	0.34		-0.03	-0.06	0.01	0.08			0.07
-3.94	1.98	0.93		-0.27	-7.99	4.08	1.25			
-0.42	0.18	0.35		0.01	-0.07	0.01		1.09		0.07
-3.95	1.69	0.94		0.07	-8.33	3.70		4.37		
-0.47	0.14	0.35		-0.04	-0.06	0.01			0.15	0.07
-4.31	1.30	0.93		-0.40	-7.96	4.12			0.47	

Table IV. (C) – Cross-Sectional Regressions – Large Stocks

We run a firm level cross-sectional regression of the monthly stock return in that month on the stock return predictors of the previous month. In each row the table reports the time series averages of the cross-sectional regression slope coefficients and their associated Newey-West (1987) adjusted t-statistics below it. Corresponding R^2 value ir reported in the last column.

SIZE	PRICE	BETA	SD	SEE	STREV	MOM	BKMK	CFPR	EP	R2
-0.06										0.02
-0.62										
	0.05									0.02
	0.46									
		0.27								0.04
		0.56								
			-0.10							0.03
			-0.51							
				-0.12						0.02
				-0.61						
					0.01					0.02
					1.68					
						0.01				0.03
						4.26				
							0.12			0.02
							0.50			
								2.00		0.01
								2.76		
									0.26	0.01
									0.14	
-0.17	0.08	1.05	-0.59		0.00	0.01	0.21			0.10
-1.79	1.06	2.59	-3.94		-0.20	5.16	1.06			
-0.17	0.12	1.01	-0.58		0.00	0.01		2.11		0.10
-1.76	1.49	2.43	-3.89		-0.25	4.70		2.81		
-0.19	0.06	1.11	-0.62		0.00	0.01			-0.37	0.10
-1.92	0.70	2.71	-4.09		-0.05	5.09			-0.23	
-0.17	0.08	0.62		-0.51	0.00	0.01	0.21			0.10
-1.79	1.08	1.47		-3.79	-0.23	5.14	1.06			
-0.17	0.12	0.59		-0.49	0.00	0.01		2.12		0.10
-1.76	1.51	1.38		-3.74	-0.28	4.68		2.84		
-0.19	0.06	0.66		-0.53	0.00	0.01			-0.33	0.10
-1.93	0.72	1.58		-3.94	-0.07	5.08			-0.21	

Table V. (A) – Cross-Sectional Regressions -Bombay Stock Exchange data

size	ewret	vwret	mshare	size	bktmktkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	2.22	1.77	0.76	0.48	3.42	0.28	0.30	7.47	0.76	0.47	4.35	4.27	59.28
2	1.43	1.36	2.70	1.89	1.94	0.24	0.17	15.40	2.62	0.70	3.97	3.81	59.14
3	1.17	1.18	6.67	2.83	1.42	0.17	0.15	17.76	4.30	0.76	3.59	3.38	59.15
4	1.07	1.05	15.42	3.66	1.03	0.20	0.11	29.67	4.16	0.88	3.43	3.15	59.14
High	0.38	0.03	74.44	4.78	0.74	0.15	0.10	43.32	9.67	0.89	3.09	2.77	59.14
High-Low	**-1.84**	**-1.74**											
t-stat	**-4.18**	**-3.68**											
capm-alpha	**-1.91**	**-1.79**											
t-stat	**-4.39**	**-3.81**											
price	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.89	0.69	3.75	0.97	3.47	0.30	0.27	-1.99	0.26	0.62	4.59	4.46	60.52
2	1.30	0.74	8.76	1.99	1.99	0.28	0.19	11.81	0.69	0.73	3.88	3.69	58.88
3	1.13	0.53	15.04	2.77	1.46	0.22	0.15	27.25	1.45	0.77	3.55	3.33	58.52
4	0.92	0.20	23.72	3.37	0.99	0.15	0.12	30.88	3.09	0.82	3.31	3.06	58.88
High	1.02	0.42	48.74	4.21	0.61	0.09	0.09	45.99	16.07	0.77	3.08	2.84	59.05
High-Low	**-0.87**	**-0.26**											
t-stat	**-1.90**	**-0.44**											
capm-alpha	**-0.87**	**-0.21**											
t-stat	**-1.89**	**-0.38**											
beta	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.21	-0.28	10.75	1.55	2.57	0.23	0.23	15.04	2.73	0.22	3.36	3.33	59.16
2	1.52	0.56	15.66	2.39	1.64	0.20	0.15	18.91	4.32	0.50	3.62	3.53	59.17
3	1.40	0.05	17.59	2.84	1.48	0.19	0.15	21.75	5.15	0.71	3.67	3.50	59.20
4	1.29	0.82	26.27	3.28	1.39	0.21	0.14	30.75	4.99	0.95	3.73	3.46	59.17
High	0.85	0.40	29.74	3.46	1.47	0.23	0.15	27.17	4.29	1.32	4.06	3.57	59.16
High-Low	**-0.37**	**0.68**											
t-stat	**-0.75**	**1.14**											
capm-alpha	**-0.55**	**0.50**											
t-stat	**-1.34**	**0.94**											
stdev	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.02	0.77	33.57	3.49	1.49	0.21	0.17	17.59	7.26	0.52	2.17	2.01	59.16
2	1.25	0.66	28.20	3.28	1.25	0.20	0.13	19.88	5.31	0.74	3.06	2.83	59.17
3	1.62	0.82	18.67	2.92	1.55	0.20	0.16	23.58	4.67	0.79	3.54	3.32	59.20
4	1.30	-0.16	13.05	2.54	1.73	0.18	0.17	30.00	3.12	0.85	4.12	3.88	59.17
High	1.09	-0.59	6.52	1.57	2.53	0.26	0.20	22.41	1.12	0.81	5.55	5.35	59.16
High-Low	**0.07**	**-1.36**											
t-stat	**0.15**	**-2.25**											
capm-alpha	**-0.03**	**-1.44**											
t-stat	**-0.07**	**-2.36**											

Table V. (A) – Cross-Sectional Regressions – Full Samples (Bonbay Stock Exchange)

see	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.05	0.70	38.70	3.69	1.46	0.22	0.17	17.27	6.81	0.60	2.20	1.99	59.16
2	1.38	0.84	26.60	3.37	1.28	0.21	0.13	19.30	5.87	0.77	3.06	2.82	59.17

3	1.10	0.48	17.67	2.93	1.50	0.20	0.14	25.31	4.71	0.80	3.55	3.32	59.20
4	1.38	-0.20	11.69	2.40	1.70	0.17	0.18	29.21	3.05	0.82	4.11	3.89	59.17
High	1.34	-0.21	5.34	1.37	2.60	0.26	0.20	22.37	1.02	0.72	5.52	5.38	59.16
High-Low	**0.29**	**-0.91**											
t-stat	**0.67**	**-1.81**											
capm-alpha	**0.22**	**-0.96**											
t-stat	**0.53**	**-1.78**											
strev	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	2.14	-0.46	16.89	2.53	1.70	0.17	0.15	24.79	3.05	0.76	3.94	3.72	59.18
2	1.31	0.52	19.05	2.79	1.68	0.22	0.16	20.06	4.50	0.74	3.59	3.38	59.49
3	1.23	0.57	20.88	2.89	1.64	0.20	0.17	20.00	4.50	0.74	3.49	3.27	58.98
4	0.91	0.39	22.00	2.94	1.67	0.22	0.17	21.19	4.84	0.73	3.52	3.31	59.15
High	0.68	0.98	21.18	2.80	1.84	0.24	0.18	27.52	4.59	0.74	3.91	3.71	59.05
High-Low	**-1.46**	**1.44**											
t-stat	**-4.59**	**2.39**											
capm-alpha	**-1.46**	**1.41**											
t-stat	**-3.79**	**2.54**											
momentum	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.14	-0.13	14.76	2.39	1.94	0.14	0.19	-40.56	2.03	0.75	3.96	3.73	59.16
2	1.40	0.56	16.08	2.64	1.87	0.20	0.18	-12.90	3.46	0.72	3.65	3.44	59.18
3	1.03	0.09	17.73	2.82	1.71	0.21	0.16	7.33	4.55	0.73	3.58	3.37	59.18
4	1.39	0.59	20.97	2.91	1.64	0.24	0.16	34.41	5.09	0.75	3.59	3.38	59.17
High	1.31	0.95	30.46	3.31	1.38	0.25	0.15	125.33	6.33	0.76	3.67	3.47	59.15
High-Low	**0.17**	**1.09**											
t-stat	**0.36**	**1.81**											
capm-alpha	**0.21**	**1.14**											
t-stat	**0.49**	**2.00**											
bktmktkt	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	0.35	-0.20	43.77	4.02	0.25	0.05	0.05	42.48	8.51	0.74	3.23	3.00	59.35
2	0.99	0.73	21.80	3.34	0.64	0.12	0.10	24.86	6.55	0.80	3.44	3.20	59.55
3	1.25	1.06	18.90	2.90	1.11	0.23	0.13	22.22	2.88	0.78	3.56	3.32	59.56
4	1.65	1.54	9.81	2.14	1.89	0.24	0.20	14.43	2.16	0.75	3.94	3.74	59.33
High	2.05	1.58	5.72	1.29	4.75	0.42	0.35	9.15	1.29	0.63	4.28	4.13	58.06
High-Low	**1.70**	**1.78**											
t-stat	**3.97**	**2.79**											
capm-alpha	**1.68**	**1.69**											
t-stat	**4.08**	**2.80**											

Table V. (A) – Cross-Sectional Regressions – Full Samples (Bonbay Stock Exchange)

cf/price	ewret	vwret	mshare	size	bktmkt	cf/p	e/p	momentum	price	beta	stdev	see	nfirm'
Low	-0.36	-1.55	23.99	2.89	1.42	-0.26	0.14	12.34	5.49	0.68	3.71	3.52	59.16
2	0.88	0.61	27.87	3.37	0.83	0.07	0.08	25.24	7.32	0.76	3.33	3.10	59.23
3	1.20	0.88	19.39	2.99	1.26	0.15	0.14	25.47	4.18	0.77	3.61	3.39	59.22
4	1.70	1.18	18.72	2.80	1.69	0.28	0.17	24.26	2.78	0.79	3.81	3.57	59.23
High	2.84	3.04	10.03	1.74	3.35	0.81	0.32	26.20	1.73	0.71	3.99	3.81	59.01
High-Low	**3.20**	**4.59**											
t-stat	**8.57**	**6.16**											
capm-alpha	**3.18**	**4.51**											
t-stat	**8.39**	**6.95**											

e/price	ewret	vwret	mshare	size	bktmkt	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	0.70	-0.28	31.36	3.34	0.96	0.06	0.02	32.70	6.73	0.69	3.49	3.29	59.25
2	1.30	0.51	24.29	3.18	1.21	0.09	0.05	23.14	4.86	0.74	3.54	3.33	59.49
3	0.75	0.12	18.21	2.94	1.37	0.17	0.10	21.88	4.33	0.75	3.60	3.38	59.51
4	1.62	1.67	15.78	2.50	1.78	0.29	0.17	20.41	3.43	0.77	3.79	3.57	59.39
High	1.91	1.68	10.37	1.80	3.26	0.44	0.50	15.48	2.06	0.75	4.03	3.83	58.21
High-Low	**1.21**	**1.96**											
t-stat	**3.14**	**2.83**											
capm-alpha	**1.18**	**1.86**											
t-stat	**3.35**	**2.99**											

Table V. (B) – Cross-Sectional Regressions – Full Samples (National Stock Exchange)

size	ewret	vwret	mshare	size	bktm	cf/p	e/p	momentum	price	beta	stdev	see	nfirm'
Low	2.11	2.03	0.44	2.38	2.43	0.34	0.24	16.24	1.55	0.82	3.79	3.56	122.92
2	1.99	1.92	1.55	3.70	1.38	0.22	0.15	28.71	3.59	0.96	3.33	3.01	122.88
3	1.46	1.46	3.78	4.62	0.97	0.18	0.11	31.86	7.22	0.97	3.07	2.70	122.86
4	1.36	1.39	10.63	5.67	0.70	0.14	0.09	33.61	10.07	0.97	2.82	2.41	122.88
High	1.21	1.08	83.60	7.30	0.52	0.12	0.07	34.02	18.10	1.00	2.59	2.10	122.90
High-Low	**-0.90**	**-0.95**											
t-stat	**-2.20**	**-2.17**											
capm-alpha	**-0.86**	**-0.83**											
t-stat	**-2.35**	**-2.14**											
price	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.70	1.25	3.33	2.98	2.48	0.32	0.23	7.23	0.56	0.95	3.77	3.47	123.87
2	1.67	1.23	5.30	3.86	1.45	0.23	0.15	23.68	1.55	1.01	3.30	2.92	122.47
3	1.66	1.15	13.60	4.53	0.97	0.19	0.12	29.68	3.17	0.98	3.07	2.68	122.64
4	1.61	1.08	26.92	5.35	0.66	0.15	0.09	35.66	6.37	0.94	2.87	2.48	122.66
High	1.49	1.22	50.85	6.27	0.43	0.11	0.06	48.40	28.93	0.84	2.58	2.23	122.80
High-Low	**-0.21**	**-0.03**											
t-stat	**-0.54**	**-0.05**											
capm-alpha	**-0.03**	**0.23**											
t-stat	**-0.09**	**0.49**											
beta	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.48	1.27	15.43	4.25	1.34	0.24	0.16	20.24	11.13	0.45	2.75	2.65	122.90
2	1.80	1.28	18.74	4.62	1.05	0.19	0.12	26.35	9.56	0.74	2.86	2.63	122.88
3	1.72	1.26	19.33	4.63	1.16	0.19	0.13	29.15	8.44	0.93	3.04	2.71	122.88
4	1.77	1.07	21.38	4.66	1.22	0.20	0.13	32.54	6.31	1.13	3.25	2.80	122.88
High	1.34	0.96	25.13	4.93	1.24	0.18	0.13	36.16	5.09	1.48	3.70	3.00	122.90
High-Low	**-0.14**	**-0.32**											
t-stat	**-0.37**	**-0.73**											
capm-alpha	**-0.75**	**-1.03**											
t-stat	**-2.80**	**-3.14**											
stdev	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.19	1.11	45.58	6.07	0.80	0.17	0.12	14.23	17.18	0.67	2.01	1.73	122.90
2	1.55	1.18	24.59	5.21	0.88	0.18	0.11	20.12	8.97	0.87	2.61	2.25	122.88
3	1.71	1.21	13.98	4.51	1.15	0.21	0.13	25.74	6.09	0.97	3.03	2.64	122.88
4	1.99	1.09	9.44	4.00	1.38	0.22	0.14	37.16	4.93	1.05	3.48	3.09	122.88
High	1.69	0.96	6.41	3.41	1.79	0.22	0.17	47.18	3.37	1.14	4.48	4.08	122.90
High-Low	**0.50**	**-0.16**											
t-stat	**1.22**	**-0.27**											
capm-alpha	**-0.01**	**-0.88**											
t-stat	**-0.02**	**-2.06**											

Table V. (B) – Cross-Sectional Regressions – Full Samples (National Stock Exchange)

see	ewret	vwret	mshare	size	bktmkt	Cf/p	e/p	momentum	price	beta	stdev	see	nfirm'
Low	1.21	1.09	55.94	6.37	0.81	0.17	0.12	13.55	16.40	0.79	2.06	1.69	122.90
2	1.38	1.23	21.32	5.35	0.84	0.17	0.11	18.37	9.33	0.92	2.63	2.22	122.88
3	1.78	1.39	11.36	4.52	1.11	0.20	0.13	25.96	6.35	0.98	3.02	2.64	122.88
4	1.94	0.73	7.44	3.94	1.38	0.22	0.14	39.42	5.30	1.01	3.46	3.11	122.88
High	1.81	1.07	3.93	3.14	1.86	0.24	0.17	47.17	3.16	1.01	4.43	4.13	122.90
High-Low	**0.61**	**-0.02**											
t-stat	**1.50**	**-0.04**											
capm-alpha	**0.25**	**-0.49**											
t-stat	**0.79**	**-1.22**											
strev	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.80	0.95	15.47	4.31	1.29	0.18	0.14	29.67	5.91	0.98	3.32	2.95	123.04
2	1.42	0.88	19.31	4.61	1.17	0.19	0.13	24.03	7.86	0.93	3.02	2.65	122.87
3	1.81	1.12	21.97	4.76	1.15	0.20	0.13	25.13	8.89	0.93	2.95	2.59	122.91
4	1.67	1.33	23.21	4.86	1.13	0.20	0.13	27.38	9.20	0.93	3.00	2.64	122.76
High	1.43	1.09	20.04	4.69	1.26	0.22	0.14	38.25	8.68	0.95	3.31	2.95	122.85
High-Low	**-0.38**	**0.14**											
t-stat	**-1.53**	**0.35**											
capm-alpha	**-0.36**	**0.18**											
t-stat	**-1.27**	**0.44**											
momentum	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	0.67	0.53	12.49	4.09	1.55	0.17	0.17	-32.10	4.60	0.97	3.27	2.89	122.90
2	1.19	0.80	19.01	4.55	1.29	0.19	0.14	-5.94	6.84	0.93	3.01	2.64	122.88
3	1.43	0.99	22.68	4.75	1.16	0.21	0.12	14.50	8.41	0.91	2.94	2.59	122.89
4	1.96	1.35	23.56	4.86	1.06	0.21	0.12	41.80	9.57	0.92	3.03	2.68	122.86
High	2.87	2.04	22.26	4.96	0.95	0.22	0.11	126.19	11.11	0.99	3.34	2.99	122.90
High-Low	**2.20**	**1.51**											
t-stat	**5.51**	**2.65**											
capm-alpha	**2.38**	**1.81**											
t-stat	**6.19**	**3.30**											
bktmkt	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.15	0.99	43.33	6.10	0.21	0.06	0.05	39.82	18.32	0.87	2.71	2.35	123.17
2	1.38	1.20	26.92	5.20	0.48	0.11	0.08	35.13	11.10	0.94	2.94	2.57	123.42
3	1.62	1.45	17.00	4.55	0.81	0.17	0.11	30.77	5.69	0.99	3.11	2.73	123.49
4	1.92	1.64	9.49	4.05	1.32	0.25	0.16	24.44	3.46	0.98	3.25	2.87	123.20
High	2.06	1.75	3.26	3.14	3.23	0.42	0.26	14.07	1.89	0.94	3.59	3.28	121.15
High-Low	**0.91**	**0.76**											
t-stat	**2.08**	**1.40**											
capm-alpha	**0.69**	**0.34**											
t-stat	**2.00**	**0.77**											

Table V. (B) – Cross-Sectional Regressions – Full Samples (National Stock Exchange)

cf/price	ewret	vwret	mshare	size	bktm	Cf/p	e/p	momentum	price	beta	stdev	see	nfirm'
Low	0.38	0.72	30.03	5.31	0.89	-0.08	0.09	22.12	12.41	0.95	3.10	2.72	122.93
2	1.10	1.14	28.38	5.42	0.56	0.08	0.07	28.91	12.56	0.91	2.85	2.49	122.96
3	1.69	1.48	22.15	4.81	0.87	0.14	0.10	28.93	7.66	0.96	3.01	2.63	122.98
4	2.14	1.74	12.71	4.15	1.28	0.24	0.14	32.63	4.99	0.96	3.21	2.85	122.97
High	2.81	1.71	6.73	3.51	2.41	0.61	0.26	31.89	2.90	0.95	3.43	3.10	122.60
High-Low	**2.43**	**0.98**											
t-stat	**7.11**	**1.96**											
capm-alpha	**2.39**	**0.72**											
t-stat	**9.16**	**1.83**											

e/price	ewret	vwret	mshare	size	bktm	cp	ep	momentum	price	beta	stdev	see	nfirm'
Low	1.30	1.04	32.86	5.54	0.63	0.09	0.03	41.94	13.75	0.96	3.03	2.65	123.25
2	1.51	1.27	28.17	5.33	0.70	0.11	0.06	31.93	12.06	0.91	2.94	2.58	123.54
3	1.55	1.06	19.58	4.71	0.98	0.17	0.09	27.37	7.48	0.94	3.05	2.68	123.43
4	1.93	1.66	13.68	4.21	1.33	0.23	0.14	25.15	4.62	0.96	3.17	2.80	123.10
High	1.82	1.25	5.71	3.49	2.39	0.41	0.35	17.91	2.54	0.95	3.42	3.08	121.12
High-Low	**0.52**	**0.21**											
t-stat	**1.37**	**0.37**											
capm-alpha	**0.43**	**-0.10**											
t-stat	**1.54**	**-0.24**											

Table descriptions:

Table III. (A) Univariate Portfolio sorts to different variable for full sample.
Table reports the equally weighted (ewret) and value weighted (vwret) portfolio quantile returns that are formed every month from January 1994 to December 2018, sorted into each predictor mentioned at the top left corner of the table. Low (high) is the lowest (highest) quantile and high – low is the difference between high and low. Both ewret and vwret difference and alpha and their Newey-West (1987) t – statistics in parameters are reported in bold. Beta, stdev, see are computed using daily returns over past month. Both BSE and NSE data are included in full sample. The first group report result of data sorted by size, and all ten variables average values are reported. Last column reports the average number of firms in each quantile.

Table III. (B) Univariate Portfolio Sorts to different variables for the Small Stocks.
Table reports the equally weighted (ewret) and value weighted (vwret) portfolio quantile returns that are formed every month from January 1994 to December 2018, sorted into each predictor mentioned at the top left corner of the table. Low (high) is the lowest (highest) quantile and high – low is the difference between high and low. Both ewret and vwret difference and alpha and their Newey-West (1987) t – statistics in parameters are reported in bold. Beta, stdev, see are computed using daily returns over past month. The first group report result of data sorted by size, and all ten variables are reported. Last column reports the average number of firms in each quantile.

Table III. (B) Univariate Portfolio Sorts to different variables for the Small Stocks.
Table reports the equally weighted (ewret) and value weighted (vwret) portfolio quantile returns that are formed every month from January 1994 to December 2018, sorted into each predictor mentioned at the top left corner of the table. Low (high) is the lowest (highest) quantile and high – low is the difference between high and low. Both ewret and vwret difference and alpha and their Newey-West (1987) t – statistics in parameters are reported in bold. Beta, stdev, see are computed using daily returns over past month. The first group report result of data sorted by size, and all ten variables are reported. Last column reports the average number of firms in each quantile.

Table IV. (A) – Cross-Sectional Regressions – All Stocks
We run a firm level cross-sectional regression of the monthly stock return in that month on the stock return predictors of the previous month. In each row the table reports the time series averages of the cross-sectional regression slope coefficients and their associated Newey-West (1987) adjusted t-statistics below it. Corresponding R^2 value ir reported in the last column.

Table IV. (B) – Cross-Sectional Regressions – Small Stocks
First we divide the sample of all stocks into large and small size and use this table to report the results of the small size stocks. We run a firm level cross-sectional regression of the monthly stock return in that month on the stock return predictors of the previous month. In each row the table reports the time series averages of the cross-sectional regression slope coefficients and their associated Newey-West (1987) adjusted t-statistics below it. Corresponding R^2 value ir reported in the last column.

Table IV. (C) – Cross-Sectional Regressions – Large Stocks
First we divide the sample of all stocks into large and small size and use this table to report the results of the large size stocks We run a firm level cross-sectional regression of the monthly stock return in that month on the stock return predictors of the previous month. In each row the table reports the time series averages of the cross-sectional regression slope coefficients and their associated Newey-West (1987) adjusted t-statistics below it. Corresponding R^2 value ir reported in the last column.

Table V. (A) Univariate Portfolio sorts to different variable for Bombay Stock exchange data. Table reports the equally weighted (ewret) and value weighted (vwret) portfolio quantile returns that are formed every month from January 1994 to December 2018, sorted into each predictor mentioned at the top left corner of the table. Low (high) is the lowest (highest) quantile and high – low is the difference between high and low. Both ewret and vwret difference and alpha and their Newey-West (1987) t–statistics in parameters are reported in bold. Beta, stdev, see are computed using daily returns over past month. Only BSE data are included in this sample. The first group report result of data sorted by size, and all ten variables average values are reported. Last column reports the average number of firms in each quantile.

Table V. (B) Univariate Portfolio sorts to different variable for National Stock exchange data. Table reports the equally weighted (ewret) and value weighted (vwret) portfolio quantile returns that are formed every month from January 1994 to December 2018, sorted into each predictor mentioned at the top left corner of the table. Low (high) is the lowest (highest) quantile and high – low is the difference between high and low. Both ewret and vwret difference and alpha and their Newey-West (1987) t–statistics in parameters are reported in bold. Beta, stdev, see are computed using daily returns over past month. Only BSE data are included in this sample. The first group report result of data sorted by size, and all ten variables average values are reported. Last column reports the average number of firms in each quantile