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Analysing Monthly Return Patterns: A Literature Review Study of Seasonal Trends in the Indian Stock Market Using Nifty 50

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Abstract: This study explores the presence of seasonal patterns—also known as calendar anomalies—in the Indian stock market. Using findings from various researchers, it examines whether specific months or days consistently show higher or lower returns. The analysis focuses on well-known indices such as Nifty 50, Sensex, BSE 500, Midcap, and SmallCap over different time periods from 1990 to 2021.

Key findings show that while some months like February, November, and April have offered better returns during certain years, these patterns are not consistent over time. Notably, the popular January effect seen in Western markets is mostly absent in India. The study also looks into the weekend effect but finds little or no clear advantage in trading on specific weekdays.

Seasonal effects seem to be more noticeable in small-cap stocks than in large-cap ones. These anomalies suggest that the Indian stock market is not perfectly efficient, meaning that careful investors might benefit by paying attention to these patterns. However, because these trends are not always reliable, the study advises caution and recommends combining seasonal analysis with broader market research.

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I. INTRODUCTION

[1]**Mehta, K., & Chander, R. (2009)** Seasonality in financial markets refers to recurring patterns in asset returns at specific intervals within a year, such as months or days of the week.

[2]**Pramath Nath Acharya (2024)** India's equity market has been subject to extensive examination for such anomalies, particularly using benchmark indices like Nifty 50 and Sensex. Research drawing from monthly and daily data frequently employs regression models with monthly dummy variables and time-series techniques, including GARCH, to test for significant calendar impacts on returns. A pivotal study using Nifty 50 data covering **November 1995 through May 2013**—calculated from average analysis of daily OHLC (Open, High, Low, Close) data revealed clear month-wise effects, highlighting persistent seasonal trends in the index's performance.

More recent analysis from **1996 to 2021** applying symmetric and asymmetric GARCH models to both Sensex and Nifty supports the presence of a **"September effect"**, where September returns showed statistically significant deviation, while asymmetric models best captured volatility dynamics.

➢ *Other Important Findings Include:*

- Absence of a January effect in Indian markets, despite its prominence in Western markets, with evidence suggesting that November and December often exhibit higher-than-average returns instead5.
- Empirical studies indicating that returns in March and April—coinciding with India's fiscal-year-end—may also display anomalies driven by tax-loss selling or rebalancing behaviour.

II. LITERATURE REVIEW

[3] **Elango, D. R. et al (2008)** This study checks if the weekend effect, where returns of stock on Mondays are less—exists in the market. It used data during the period 1999 to 2007 for three major NSE indices. The results told that returns on monday were not positive in two indices, especially for smaller stocks. One index showed a statistically significant

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difference in returns across the week. The study also found that Wednesdays had the highest returns, but with more risk. The results imply that inefficiencies exist in the Indian market, and while investors could leverage this pattern to enhance returns, they should proceed prudently.

[4] **Nandi, A., & Samanta, P. K. (2014)** This study aims to check whether the weekend effect exists in NIFTY 50 benchmark of the India's NSE. It uses data from February 1, 2006, to December 31, 2015, and applies two statistical methods—ANOVA and dummy variable regression to examine the effect. The results reveal that Monday returns do not significantly differ from those of other weekdays. The results of both tests do not strongly support the presence of weekend effect in this case. This means that investors are unlikely to gain any special advantage by trading on Mondays in the NIFTY 50 index.

[5]**Verma, D. (2017)** This study explores whether monthly or seasonal occur within the Indian stock market framework, which could help investors earn higher-than-normal returns. It uses daily closing price data from both across on both the BSE and NSE over the course of 2006–2016. To check for seasonality, the study introduces monthly dummy variables in the model and uses an autoregressive method to handle any correlation in the data. The findings show that there is no clear monthly or seasonal pattern within the Indian stock market over this timeframe, indicating that investors may not benefit from timing the market based on months.

[6]**Patel, N. R. et al (2012)** The day-of-the-week effect observed as four major stock markets in Asian —BSE, Hang Seng, Nikkei, and SSE, using data from January, 2000, to March, 2011, segmented in three distinct periods. It uses adjusted closing prices and log-transformed returns for analysis. While some days like Wednesday and Thursday showed slightly higher returns in specific markets, Monday showed higher volatility across all. However, the overall results show no consistent or meaningful indications any of markets throughout entire period or within specific sub-periods.

[7] **Desai, D. J., & Trivedi, A. (2012)** Seasonal changes in production and sales are common in business. Seasonality means regular and repeated changes in data that happen within a year, mostly due to climate changes. Traditions, customs, and economic factors also affect stock market returns. For instance, returns on stock often have patterns depending on time of day or week or month—especially monthly patterns where specific months generate higher returns. This study aims to examine if understanding these seasonal patterns can help investors create better strategies and earn higher returns during specific times.

[8]**Raghuram, G. (2017)** The study analyses the past 25 years (1990 to 2015) by dividing them into three periods to examine seasonal monthly effects in Indian market evaluated using indices such as BSE Sensex, BSE 500, as well as the Midcap and SmallCap indices. The findings reveal that each period has a different month showing better returns: February (1990–1998), November (1999–2006), and April (2007–2015).

III. RELEVANCE OF STUDY

- [9] **Meher Shiva Tadepalli (2018)** Understanding seasonal trends within the Indian stock market holds significance for both retail and institutional investors, since calendar anomalies have been widely documented in literature.
- Identifying predictable return patterns at specific times of the year can help investors develop smarter trading strategies, as discussed extensively in the calendar anomalies literature review.
- [10] **Harshita (2018)** This study is particularly useful in the Indian context, where seasonality may be influenced by festivals, climate, and fiscal events—factors often conjectured in Indian-market studies such as Harshita et al. (2018) on the November effect.
- [11] **Dinesh Jaisinghani (2016)** It can aid in portfolio planning and timing market entry and exit more effectively—consistent with practical implications noted in empirical Indian studies.

IV. LIMITATION

- [2] **Pramath Nath Acharya (2022)** This study is limited to secondary data from published research and focuses primarily on calendar-based seasonality such as monthly and weekly effects (most literature relies on month-dummy or weekday-dummy regressions and GARCH modelling).
- [12]**Md Yeasin (2024)** It does not account for intraday patterns or sector-wise seasonal trends—areas that remain largely unaddressed in existing Indian-market seasonality literature.
- [9] **Meher Shiva Tadepalli (2018)** Also, findings may be affected by the changing nature of the market, regulations, or global economic conditions over time, a limitation acknowledged in broader surveys of calendar anomalies.

V. METHODOLOGY FRAMEWORK

- This study has been conducted using previously published secondary data gathered from existing research papers, academic journals, related literature, and time-series data on Indian stock indices like Nifty 50, Sensex, BSE 500, Midcap, SmallCap.
- The studies reviewed span from 1990 to 2021, covering multiple time frames and index types, analysing return behaviour using monthly and daily stock prices.

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VI. ANALYSIS

- Analysis of previous studies shows that calendar effects do exist in Indian market of stocks, but they have not been consistent over time. [11] **Dinesh Jaisinghani (2016).**
- For example, while some studies highlight the absence of the January effect, others detect significant returns in November, December, March, and April. [10] **Harshita (2018).**
- The study by Raghuram (2017) clearly shows shifting month effects across three periods: 1990-1998: February; 1999-2006: November; 2007-2015: April—and small-cap stocks show stronger seasonal effects than large-caps.
- Meanwhile, studies on the weekend effect yield mixed results—some report negative Monday returns, while others find no significant weekday differences (Jaisinghani 2016 shows weak weekday effects).
- Overall, while seasonal anomalies may offer opportunities, they are not uniform or reliable without deeper analysis—a sentiment echoed in review papers on calendar anomalies.

VII. FINDINGS

- [8]**Raghuram, G. (2017)** Calendar anomalies such as the "month of the year" effect are present in the Indian stock market but vary across different time periods.
- Specific months like February, November, and April have shown better returns during different periods (1990–2015).
- Small-cap stocks are more influenced by seasonal effects compared to large-cap stocks.
- [11] **Dinesh Jaisinghani (2016)** Weekend effects are either weak or absent in Indian indices like NIFTY 50, though some indices showed negative Monday returns.
- While Western markets show a strong January effect, Indian studies consistently found it missing, replaced by patterns in other months (e.g. November, April).
- [10] **Harshita (2018)** The presence of these effects suggests the Indian market of stocks are not entirely sufficient, allowing it for strategic trading (this inefficiency view is noted in both empirical and survey studies).

VIII. SUGGESTIONS

- [11] **Dinesh Jaisinghani (2016)** Investors can monitor seasonal patterns while making short-term investment decisions—a recommendation recurrent in empirical calendar anomaly literature.
- [8]**Raghuram, G. (2017)** Portfolio managers should consider including small-cap stocks when targeting months with historically better performance, due to stronger anomalies in small-cap segments.
- [9] **Meher Shiva Tadepalli (2018)** Researchers should use updated time-series models and larger datasets to test consistency of calendar effects.
- Regulators may study how tax rules and fiscal cycles influence stock behaviour and investor psychology around certain months.
- Financial advisors can educate retail investors about calendar anomalies and how to use them wisely without over-dependence.

IX. CONCLUSION

- [8]**Raghuram, G. (2017)** The study concludes that seasonal effects as the 'month-of-the-year' pattern exists in the Indian stock market, although it is inconsistent across time periods and indices.
- While effects like February, November, and April returns have been identified in certain periods, their persistence is uncertain.
- Small-cap indices tend to show stronger seasonality.
- Weekend effects are mostly weak or absent.
- [10] **Harshita (2018)** These anomalies highlight possible market inefficiencies, implying that informed investors could benefit from timing strategies. However, due caution is advised, and investment decisions should not rely solely on seasonal patterns but consider broader market fundamentals and risk factors—aligning with broader survey perspectives.

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