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Persistence of DOW Effect: Insights and Perspectives from Literature

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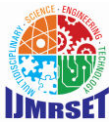
ABSTRACT: The primary objective of the research is to conduct an extensive examination of existing literature on DOW Effect. To thoroughly explore previous studies relevant to the research topic, prominent databases were scrutinized using keywords associated with selected calendar anomalies. Subsequently, a comprehensive summary table was compiled based on the selected articles, offering readers a quick overview of each article's background information and findings. This approach facilitates a direct correlation between the conclusions drawn in the study and the context provided by each article.

I. INTRODUCTION

Asset pricing has become a prominent and widely researched area, serving as an indicator of global stock market efficiency. Despite the exploration of numerous market pricing models and theories in the realm of market efficiency, several anomalies persist due to seasonal and psychological factors. Unlike the efficient market hypothesis, which posits that arbitrage eliminates all unexploited returns, the enduring presence of these anomalies necessitates further investigation. Within the scope of the current literature review, research studies focusing on four major seasonal or calendar anomalies—namely, the day-of-the-week (DOW), turn-of-the-month (TOM), turn-of-the-year (TOY), and holiday (HOL) effects—were examined. It was observed that academic literature predominantly concentrated on these anomalies during the late twentieth century. Initially, most of the studies (Fields, 1934; Cross, 1973; French, 1980; Gibbons and Hess, 1981) were centered around developed markets. Over time, these investigations were expanded to include other emerging markets (Gao and Kling, 2005; Basher and Sadorsky, 2006; Cao et al., 2008; Ariss et al., 2011; Al-Khazali, 2014; Kayacetin and Lekpek, 2016), thereby enhancing the academic discourse and extending the observed effects to diverse markets. Thus, the existing body of literature reflects the evolution of research studies across different phases over the years. The inaugural academic article by Fields (1934) marked the inception of research into the HOL effect, which scrutinized fluctuations in stock returns within the S&P Composite Index on Mondays and Fridays, along with the correlation of price changes between these two days. Subsequently, investigations into other anomalies such as the TOY effect (Wachtel, 1942), DOW effect (Cross, 1973), and TOM effect (Ariel, 1987) emerged. Quantitative research and multiple case studies ensued, delving into causal effects. Advancing beyond initial observations, studies progressed towards understanding these effects from various dimensional perspectives, including firm size (Rogalski, 1984; Keim and Stambaugh, 1984; Seyhun, 1993), investor profiles (Chan et al., 2004; Abraham and Ikenberry, 1994; Sias and Starks, 1995), stock price (Branch and Chang, 1990; Brockman and Michayluk, 1997; Brockman and Michayluk, 1998), monetary policy (Ogden, 1990), industry (Marretta and Worthington, 2009; Yuan et al., 2015), magnitude of stock losses (Chen and Singal, 2003a), investor shorting activities (Blau et al., 2009; Chen and Singal, 2003b), business cycles (Liano and Gup, 1989), and value versus growth stocks (Yuan et al., 2015). Additionally, it was observed that many articles analyzed return characteristics by partitioning stock returns into two dimensions. Typically, the sample period was subdivided into various sub-periods, serving as one dimension, while any of the aforementioned factors acted as a secondary dimension to assess the existence and potency of anomalies across each factor within the sub-period.

II. LITERATURE REVIEW

Fields' seminal academic work in 1934 heralded the commencement of research into the HOL effect, which scrutinized stock return fluctuations within the S&P Composite Index specifically on Mondays and Fridays, as well as the correlation of price changes between these two days. This study set the stage for subsequent inquiries into other anomalies like the TOY effect (Wachtel, 1942), DOW effect (Cross, 1973), and TOM effect (Ariel, 1987). As research progressed, it evolved

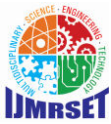


to include quantitative analyses and multiple case studies, aiming to unravel causal relationships. Moving beyond initial findings, studies began exploring these effects from various perspectives, such as firm size (Rogalski, 1984; Keim and Stambaugh, 1984; Seyhun, 1993), investor profiles (Chan et al., 2004; Abraham and Ikenberry, 1994; Sias and Starks, 1995), stock prices (Branch and Chang, 1990; Brockman and Michayluk, 1997; Brockman and Michayluk, 1998), monetary policy (Ogden, 1990), industry (Marretta and Worthington, 2009; Yuan et al., 2015), magnitude of stock losses (Chen and Singal, 2003a), investor shorting activities (Blau et al., 2009; Chen and Singal, 2003b), business cycles (Liano and Gup, 1989), and the distinction between value and growth stocks (Yuan et al., 2015). Additionally, many studies analyzed return characteristics by segmenting stock returns into two dimensions, often dividing the sample period into various sub-periods, each serving as one dimension, while employing one of the factors mentioned above as a secondary dimension to assess the presence and strength of anomalies across each factor within the sub-period.

Cross (1973) observed that the index showed a rise on only 39.5 percent of Mondays, with a mean return of -0.18 percent, compared to 62 percent of Fridays, where the mean return was 0.12 percent. Additionally, he noted that following Fridays where the index advanced, there was an equal probability of the index moving up or down, but following Fridays where the index declined, the odds favored a decline by three to one. Moreover, he found that median and mean percentage changes on Mondays were typically lower when preceded by an advanced Friday, further solidifying this relationship. French (1980) corroborated Cross's findings by examining stock returns up to 1977 and found that the average return for Mondays was significantly negative, while returns for the other four days of the week were positive across five five-year sub-periods. Consequently, the paper refuted the trading time hypothesis, which posited that returns were generated solely during active trading and that the expected return would be the same for each day of the week. Instead, it favored the calendar time hypothesis, suggesting that returns were generated according to the calendar time, with the expected return for Monday being three times that of other days of the week. Gibbons and Hess (1981) extended this analysis by studying the S&P 500 and Dow Jones 30 from 1962 to 1978, confirming the DOW effect. They noted significant and persistent negative returns on Mondays for stocks, even after controlling for market efficiency.

Lakonishok and Levi (1982) contended that expected returns on a trading day were influenced by the delay between trading and settlements in stocks and the clearing of checks. They demonstrated, using data from 1962 to 1979, that the DOW effect could be implied by a trading time model rather than a calendar time model, as suggested by French (1980). Since the adjusted expected returns did not differ concerning the DOW, the paper concluded that the weekend effect should no longer be viewed as an anomaly contradicting the efficient market hypothesis. Subsequently, Keim and Stambaugh (1984) extended the study of the weekend effect to a longer time frame and found significant negative Monday returns for the S&P Composite as early as 1928 (due to the NYSE being open on Saturdays from 1928 to 1952, Monday's return was calculated from Saturday's close to Monday's close). They also noted that the strength of the effect varied inversely with size across all NYSE-listed firms and actively traded OTC stocks. Rogalski (1984), in addition to investigating the TOY and HOL effects, examined the weekend effect and identified a significant Monday effect for both the S&P and Dow Jones indices when considering total weekend returns (from Friday close to Monday close). However, when returns were further divided into trading (Monday open to Monday close) and non-trading periods (Friday close to Monday open), the Monday effect was primarily concentrated in the non-trading period.

Jaffe and Westerfield (1985a, b) published two articles in the same year focusing on the DOW effect in various countries. In the first article, they examined Japan and its relationship with the US using the ND Index, the Tokyo SE Index, and S&P Composite. In the second article, they investigated Japan, Canada, Australia, and the UK to explore the weekend effect further. Contrary to previous studies, they identified a Tuesday effect in Japan and only weak evidence suggesting that Japanese returns were closer to the US seasonal pattern, shifted by one day due to time zone differences. Similarly, they observed a Tuesday effect in Australia and proposed an explanation based on the time zone theory. Additionally, for all four countries, they observed a foreign currency markets were integrated relative to the USA and concluded that they didn't offset each other. Subsequently, Dyl and Martin (1985) countered the findings of Lakonishok and Levi (1982) by asserting that the weekend effect cannot be attributed to settlement procedures and check clearing delays. They utilized a slightly longer dataset spanning from 1957 to 1981 for the S&P 500. Their results unequivocally refuted the settlement hypothesis. In an attempt to clarify their stance and substantiate the role of the settlement cycle in the weekend effect, Lakonishok and Levi (1985) further argued from the perspective of investor behavior. They suggested that settlement lags might be overlooked, either because investors do not consider them or because daily returns are adjusted for the time value of money.



While it was acknowledged that some individuals might overlook two days' worth of interest, the article emphasized that any necessary interest adjustment should align with real-world relevance. Smirlock and Starks (1986) provided a more detailed analysis compared to Rogalski (1984), utilizing hourly return data from Dow Jones spanning the years 1963 to 1983 to elucidate the timing of the DOW effect. While negative returns were evident throughout the entire trading day (from Monday open to close) during the period from 1963 to 1968, they were predominantly concentrated in the opening hours from 1968 to 1974. In the post-1974 period, positive returns were observed from Monday open to close, although there were a few instances of notably negative returns during the early hours. Consequently, the article highlighted the unstable nature of the differences in hourly returns across the various sub-periods. Ultimately, in contrast to Rogalski (1984), the article rejected the trading time hypothesis for the pre-1974 period.

Thaler (1987a) and Jacobs and Levy (1988) separately examined several previous studies (Cross, 1973; French, 1980; Gibbons and Hess, 1981; Keim and Stambaugh, 1984; Lakonishok and Smidt, 1988) pertaining to the Weekend effect. Additionally, Thaler (1987a) explored potential explanations for the anomaly's existence, suggesting that while it might not always yield profits, it could assist retail investors in timing their investments. Similarly, Jacobs and Levy (1988) delved into the patterns of earnings announcements, the short selling hypothesis (where short-sellers may cover positions before the weekend to mitigate risk and then short again on Monday morning), and various methods of investment management as potential rationales for the observed anomaly.

IV. CONCLUSION AND FUTURE WORK

The extensive review of literature outlined above provides ample justification to suggest that while the current knowledge base offers numerous logical and empirical explanations for the consistent presence of various calendar anomalies observed across diverse markets, it falls short of establishing their universal applicability. It is noteworthy that the recent lack of persistence of certain recorded calendar anomalies in some markets, particularly in developed ones, seems to contradict the evidence documented in the literature supporting the persistence of such anomalies.

It's crucial to recognize at this point that most of the surveyed papers discuss the persistence of asset pricing anomalies primarily within developed markets, with very few providing evidence from emerging markets. This leaves significant room for further research to explore the persistence of asset pricing anomalies, their magnitude, and impact on asset pricing in emerging markets like India, Russia, and Brazil compared to developed markets.

Furthermore, irrespective of the markets under consideration, the existing research seems to have primarily focused on overall market returns derived from aggregate market indices to elucidate asset-pricing anomalies. This underscores the need for additional research to investigate and comprehend the persistence of these anomalies concerning various strategic, thematic, and sectoral indices across different markets (developed, emerging, and underdeveloped countries) over varying periods. It would also be intriguing to discern how these established asset pricing anomalies behave over specific time periods as markets progress along the efficiency maturity model (from weak form to semi-strong to strong form of efficiency).

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