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The persistence of the small firm/January effect: Is it consistent with investors' learning and arbitrage efforts?

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ABSTRACT

Using improved methodology and an expanded research design, we examine whether the small firm/January effect (Keim, D. B. (1983). Size-related anomalies and stock return seasonality: further empirical evidence. *Journal of Financial Economics* 12:13–32), is declining over time due to market efficiency. First, we find that January returns are smaller after 1963–1979, but have simply reverted to levels that existed before that time. Second, we show that the January effect is not limited to mature markets but also appears in firms trading on the relatively new NASDAQ exchange in the 1970s. Third, trading volume for small firms in December and January is not different from other months, implying that traders are not actively arbitraging the anomaly. Together, our results suggest that this anomaly continues to defy rational explanation in an efficient market.

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1. Introduction

In a rational and efficient market a regularly occurring opportunity to capture abnormally high returns should not be sustainable because upon learning of the opportunity investors should quickly arbitrage it away. Recent research provides evidence that the January effect, a capital markets anomaly in which equity returns are significantly higher in January than during the other 11 months of the year, is declining (Gu, 2003; Schwert, 2003) or even disappearing completely (Mehdian & Perry, 2002),

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albeit slowly, in the years after 1980. Gu (2003) argues that the reason for the decline may be "... a trend toward market efficiency,"¹ while Mehdian and Perry (2002) state that the "... disappearance of the January effect may imply that the US stock markets are gradually becoming more 'weakly efficient' in the post-crash period."² In contrast, Haugen and Jorion (1996) find that the January effect does not significantly decline over a period of nearly 70 years, pointing out that such persistence may raise questions about efficient market assumptions. The temporal behavior of January returns is thus a subject of disagreement and merits further study.

We start by re-examining the hypothesis that the magnitude of the anomaly is declining or disappearing over time. Given that learning is irreversible – once learned, information cannot be "unlearned" by rational investors – we should see a steady decline in the magnitude of January return premiums over time if, in fact, the effect is being arbitrated away by informed investors.³ While we do find an overall decline in the magnitude of the January effect subsequent to the 1963–1979 period originally examined by Keim (1983), we find that the magnitude of the effect *prior* to that period is also smaller. It appears that the apparent decline in small firm January returns (premiums) documented in years since 1979 (Gu, 2003; Mehdian & Perry, 2002; Schwert, 2003) may be attributed to using years of unusually high January returns that occurred during Keim's (1983) sample period as a benchmark. We do not find evidence to support an inference that the market is arbitraging away the January effect over time; rather, we conclude that the effect persists and has merely returned to a magnitude quite similar to what it was before a period of high volatility during the 1960s and 1970s.

The emergence of the NASDAQ market in the 1970s provides the opportunity to examine whether an anomaly documented in mature markets over an extended period of time will appear in a new market characterized by different trading mechanisms (specialist vs. automated). We find that the January effect is not only present in NASDAQ firms, but also that the magnitude of the effect is larger than in NYSE firms and about the same as in AMEX firms. A closer examination reveals that once we control for differences in firm size across the three trading exchanges, there is no conclusive evidence that exchange membership is important.

We also look for evidence that investors attempt to arbitrage the January effect by examining trading volume. Given that academic papers as well as the financial press (Booth & Keim, 2000; Hulbert, 1995, 1998) discuss trading rules and show some evidence of ability to make arbitrage profits, we perform three tests related to trading volume to investigate whether there is any evidence consistent with investors attempting to implement any such trading strategy. First, we document a positive correlation between January trading volume and the magnitude of stock returns, consistent with results in numerous empirical studies.⁴ Second, investors wanting to capture the January returns need to establish a long position in December⁵ and then reverse the position in January.⁶ Thus, trading volume for small firms in both December and January should be higher than in other months. Third, capturing the January return requires investors to buy and sell the same number of shares in target firms in December and January. Such trading ought to result in a higher correlation of December/January trading volume for small firms than other consecutive pairs of months.

Our research design contributes to the literature addressing the January effect in two ways. First, we employ individual firm data categorized by firm size from all three major US trading exchanges. This allows us to focus on the smallest firms where the January effect is dominant, in contrast to studies employing broad market indices (Gu, 2003; Mehdian & Perry, 2002) which do not isolate the differential impact of firm size on the magnitude of January returns. Second, we employ both market

¹ Page 402.

² Page 144.

³ The idea that the market learns slowly and becomes more efficient over decades is troublesome, given the strong evidence of quick price adjustments to event announcements (Fama, Fisher, Jensen, & Roll, 1969; Francis, Pagach, & Stephan, 1992; Patell & Wolfson, 1984). However, if this is not the case with the small firm/January effect then slow learning by investors may be one explanation for a decrease over time. See Fama (1991) for a thorough review of the market efficiency literature.

⁴ See Karpoff (1987) for a detailed review of the literature on trading volume.

⁵ Most of the January effect occurs in the first five trading days of January (Keim, 1983).

⁶ See Rubinstein (1978). Rubinstein's result has been interpreted by Lev and Ohlson (1982) to imply that no trading (no increase in volume) is a precondition for investors' unanimity.

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