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The Other January Effect: Evidence against market efficiency?

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ABSTRACT

The Other January Effect (OJE), which suggests positive (negative) equity market returns in January predict positive (negative) returns in the following 11 months of the year, underperforms a simple buy-and-hold strategy before and after risk-adjustment. Even the best modified OJE strategy, which benefits from several ex-post adjustments, does not generate statistically or economically significant excess returns. When the OJE is tested with a method that is consistent with investor experience it is clear the OJE is no more profitable than an 11-month strategy that uses November or December as the conditioning month.

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1. Introduction

The Other January Effect,¹ which suggests positive (negative) returns in January predict positive (negative) returns in the remaining 11 months of the year, is shown to be a remarkably simple yet powerful prediction tool in recent studies by Brown and Luo (2006), Cooper et al. (2006), and Sturm (2009).² We build on these important papers by investigating whether the Other January Effect (hereafter OJE) can be implemented by investors to earn risk-adjusted excess returns. In doing so, we are effectively considering whether the OJE is evidence against the efficient market hypothesis. As Schwert (2003, p. 942) notes, “if anomalous return behavior is not definitive enough for an efficient trader to make money trading on it, then it is

not economically significant”. Fama (1991, p. 1575) describes this version of the efficient market hypothesis, which dates back to Jensen (1978), as “economically more sensible.”

To be sure, we are not criticizing previous OJE papers. These show that, on average, 11-month returns following positive Januaries are larger than 11-month returns following negative Januaries, and that this “spread” cannot be explained by standard asset pricing models. We verify this result before turning our attention to the question of whether the OJE can be used to earn economic profits, which is something these earlier OJE papers have not addressed. If the OJE market timing technique can be used to exploit market inefficiency, then portfolio managers, individual equity investors, the management of listed companies looking to raise additional equity and private companies considering an IPO should all take the sign of the January return (and the corresponding 11-month OJE return prediction) into account when making their decisions. Alternatively, if the OJE does not generate economic profits then those currently using the OJE should reconsider their faith in this timing tool.

Our approach is consistent with many other strands of the return predictability literature,³ where an original study which documents

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¹ The Other January Effect is referred to as the “January Barometer” by financial media. We follow recent papers and use the term the “Other January Effect” throughout this paper. Ironically, the “Other” January Effect (named the January Barometer at the time) was, according to Cooper et al. (2006), documented by Hirsch as early 1974 yet the January effect was not documented until Rozeff and Kinney (1976).

² All three papers find evidence of OJE predictive ability in US indices. Brown and Luo (2006) find negative Januaries give more useful predictions than positive Januaries. Sturm (2009) finds the OJE is particularly powerful in the first year of presidential terms. More recently, Stivers et al. (2009) show the power of the OJE has declined over time and it is less useful internationally.

³ There is a vast literature on return predictability. An incomplete list of recent examples includes Mazouz et al. (2009) who document UK evidence on stock price reactions following large one-day price changes, Chen (2009) who investigates the ability of macroeconomic variables to predict bear markets, and Doyle and Chen (2009) who present evidence of a “wandering weekend effect” in stock markets.

predictability is followed by subsequent work which considers implementation issues. For example, Cooper et al. (2005) test whether the predictability of book-to-market equity, size, momentum, and beta, as shown by previous authors, can be used by an investor to form a portfolio that outperforms a passive index. Moreover, Lesmond et al. (2004) show an investor who attempts to exploit the momentum predictability documented by Jegadeesh and Titman (1993) incurs large transaction costs, which erode the majority of profits.

On the face of it, the OJE would appear to be compelling evidence against market efficiency. Previous papers report average differences in 11-month returns following positive and negative Januaries that are frequently in excess of 10%. Moreover, unlike many “anomalies”, the OJE is easy to implement. It only gives one signal per year so transaction costs are considerably lower than those in many quantitative strategies. Most interpret it to relate to market indices so short positions can be easily created. Finally, the information required to open a position, namely the January return, is readily available. These last two features imply the gross profits generated by the OJE need not be very large to offset the costs incurred in implementing it.

We therefore suggest it is somewhat surprising to discover, as we do, that the OJE is not evidence against market efficiency. We show the OJE cannot be implemented to earn risk-adjusted excess returns. OJE returns are neither economically nor statistically significantly different to buy-and-hold returns, and OJE strategy Sharpe Ratios are inferior to buy-and-hold Sharpe Ratios. It seems clear that followers of the OJE interpret it as implying that a negative January indicates an 11-month return that is negative rather than one that is simply less than the 11-month return following positive Januaries. Hensel and Ziemba (1995a, p. 188) quote Hirsch (1986), who appears to have been the first to propose the OJE, as follows “The supposition is that: If the market rises in January, then it will also rise during the rest of the year; but if it falls in January, then there will be a decline during the rest of the year.” This implies the most logical way to exploit the OJE is to observe the January return and take an 11-month long (short) position following positive (negative) Januaries. It also seems clear the OJE is intended to be implemented by remaining out of the equity market in January while the January return is being observed.⁴ However, so as not to be accused of testing a “straw man” version of the OJE, we also test three major variations of the standard long T-bills in January then long (short) 11-month equity market position following positive (negative) Januaries OJE strategy. These include: (1) staying long (short) the equity market for 12 months (February–January) following an OJE signal, (2) always being long the equity market in January and long (short) the equity market for February–December based on the actual January return, and (3) always being long the equity market in January, being long the equity market for February–December following a positive January, and being long T-bills for 11 months following negative Januaries.

Variation one and two helps the OJE by letting it sometimes and always respectively capture the January return, which tends to be positive on average due to the January Effect. Variation three further improves the OJE by limiting losses on its short positions. We acknowledge these variations, which are made after observing how the OJE performed, involve data mining bias⁵ but we feel their inclusion strengthens our argument regarding the OJE not being evidence against market efficiency.⁶ Neither the standard OJE strategy

nor any of its modified versions generate returns on that are statistically or economically significantly different from buy-and-hold returns. It is also not possible for an investor to profitably adopt the OJE in international equity indices.

There are four factors that contribute to the underperformance of the OJE compared to a simple passive buy-and-hold strategy despite the predictive ability documented previously in the literature based on the simple spread approach. Firstly, the simple spread is not consistent with the average return earned by an investor over February–December periods. For instance, assume that during a 3-year period January returns are positive in the first two years and the 11-month (February–December) returns are 8% for both these years. Assume the third year has a negative January return and an 11-month return of 1%. Based on these numbers the simple spread is 7% ($8\% - 1\%$) but anyone adopting the OJE would experience an average return, or weighted spread of 5% ($[8\% \times 2/3 - 1\% \times 1/3]$). We show the actual average 11-month return earned by an OJE investor is lower than the 11-month spread.

Secondly, the simple spread approach does not consider the January return which a passive investor earns, but an OJE investor foregoes. Thirdly, the OJE gives inaccurate signals to short the market. Eleven-month returns following negative Januaries (i.e. periods when the OJE is short the market) are positive on average so a passive investor who is always long the market earns these returns but anyone adopting the OJE would incur losses on their short positions during these periods.

Even though they are positive on average, 11-month returns following negative Januaries are smaller than 11-month returns following positive Januaries. This raises the possibility of an investor being able to benefit from a modified OJE strategy which is always long the equity market in January, long the equity market for February–December following positive Januaries, and long T-bills for 11-month periods following negative Januaries.⁷ This heavily modified OJE strategy is identical to the passive buy-and-hold approach at all times other than February–December periods following negative Januaries. The modified OJE investor is long T-bills during these periods while the passive investor is long the equity market. We find this modified strategy also does not out-perform the passive strategy. This represents the fourth factor behind the OJE not out-performing. Namely, 11-month T-bill returns have only been marginally larger than 11-month equity market returns during periods following negative Januaries so an investor following the modified OJE strategy would not have received profits that are either statistically or economically significantly larger than those earned by a buy-and-hold investor. Moreover, the investor following this modified OJE strategy would also not have earned statistically significant excess risk-adjusted returns.

After completing our analysis we become aware of a recent paper by Cooper et al. (2010)⁸ that also considers whether the OJE can be implemented to earn abnormal returns. There are numerous differences between our papers, including the conclusion. They conclude (p. 18) “the January Barometer does appear to provide useful information for would-be investors, or, at least historically, it would have contained useful information”, whereas we conclude the OJE has not been a useful tool for investors. This difference in conclusions appears to be due to at least two factors. Firstly, we consider the statistical significance of the difference in raw and risk-adjusted returns to the data-mined modified OJE/T-bill strategy versus the buy-and-hold approach and find there is no statistical significance. Secondly, we have different interpretations of the economic signifi-

⁴ Proponents of the OJE never suggest an investor should remain invested in January, which is unsurprising given the January Effect was not known when the OJE was first proposed.

⁵ See Lo and MacKinlay (1990) and Sullivan et al. (1999).

⁶ We only modify the OJE in ways that improve its performance. For instance, a strategy of always being short in January and long or short based on the OJE for the remaining 11 months would be more unprofitable than the original OJE strategy so we do not include it.

⁷ We thank Richard Roll for pointing this out to us.

⁸ We have been told this paper had been accepted by the *Journal of Investment Management*, but this version is not available online so we cite and quote the July 2009 working paper version, which is available at: <http://ssrn.com/abstract=1436516>

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