The January Effect: Still There after All These Years

Robert A. Haugen and Philippe Jorion

The year-end disturbance in the prices of small stocks that has come to be known as the January effect is arguably the most celebrated of the many stock market anomalies discovered during the past two decades. If this anomaly is exploitable and if the stock market is reasonably efficient, one would expect that opportunity would have been priced away by now. Evidence indicates, however, that the January effect is still going strong 17 years after its discovery. The magnitude of the effect has not changed significantly, and no significant trend portends its eventual disappearance. Because the anomaly can be inexpensively exploited, its persistence has implications for the theory of efficient markets and for the persistence of anomalies in general.

The January effect is, perhaps, the best-known example of anomalous behavior in security markets throughout the world. At the turn of the year, certain types of securities tend to produce abnormal returns. Most of the attention has centered on stocks with small market capitalization. Throughout most of this century, small stocks have tended to produce greater returns than large stocks, and the lion's share of the small-stock premium is earned in the first ten trading days in January.[1]

The January effect was brought to the attention of modern finance by Rozeff and Kinney,[2] but it was first introduced to the academic literature more than 50 years ago by Wachtel.[3] Its reintroduction in 1976 had a far greater impact than the initial article because it was the first evidence, taken seriously, that brought into question the then-accepted paradigm that security markets are informationally efficient, reflecting in an unbiased manner all available information relevant to pricing.

The effect has been attributed to a rebound in stock prices following year-end price pressure induced by tax-loss selling.[4] A competing hypothesis is that the effect is associated with simultaneous reentry into aggressive investment positions by professional money managers who have "parked" money in their performance benchmarks (such as the S&P 500) so as to lock in their investment performance during the previous year.[5]

Robert A. Haugen and Philippe Jorion are professors of finance in the Graduate School of Management at the University of California–Irvine.

Since its reintroduction, the January effect has been the subject of many academic and applied journal articles and at least one book in the popular press. It would be safe to say that the majority of the professional investment community is very much aware of it, the most celebrated anomaly of financial markets.

One would expect that an anomaly this well known would quickly disappear as investors attempt to exploit it. One avenue would be the futures markets. By taking long positions in contracts on an approximately equally weighted index, such as the Value Line, and short positions in a capitalization-weighted index, such as the S&P 500, investors can exploit the tendency of small stocks to outperform at the turn of the year. One would also expect money managers to initiate early entry into their desired positions to avoid the price pressure on less-liquid stocks that is evident at the beginning of the year. For example, one would expect managers to expedite the processing of new accounts in December to avoid the turbulence in January. Because they share transaction costs with other fund members, one also would expect individual investors to transfer money to mutual funds investing in small stocks in December to capitalize on the premium returns earned by these stocks in January. As relative pressure is put on futures prices for small stocks, as professional investors attempt to enter the market ahead of the effect, and as small-stock mutual funds react to the inflow of funds in December by increasing their inventories of small stocks, *one would expect to see the January effect slide into the preceding year until it utterly disappears.*

Based on the evidence presented here, however, the January effect is not disappearing.

We examined the monthly returns to New York Stock Exchange firms from 1926 through 1993 and documented the existence of the January effect throughout the period. More important, there has been no significant reduction in the magnitude of the effect since its rediscovery in 1976.

METHODOLOGY

Our sample included all stocks on the NYSE in the CRSP monthly data file from 1926 through 1993. At the beginning of each year, we ranked these stocks on the basis of total market capitalization. The stocks were then formed into equally weighted deciles, and within each decile, the following time-series regressions were run over the full period:

$$r_{j,t} = a_0 + a_1 J_t + e_{j,t}, \quad (1)$$

$$r_{j,t} = a_0 + a_1 J_t + a_{2L} J_t LT_t + e_{j,t}, \quad (2)$$

$$r_{j,t} = a_0 + a_1 J_t + a_3 J_t A_t + e_{j,t}, \text{ and} \quad (3)$$

$$r_{j,t} = a_0 + a_1 J_t + a_4 J_t ST_t + e_{j,t}, \quad (4)$$

where

$r_{j,t}$ = monthly rate of return to decile j in month t

J_t = dummy variable taking a value of 1 if t is a January month and 0 otherwise

LT_t = long-term time trend variable equal to year $t - 1977$

A_t = dummy variable taking a value of 1 after 1976 and 0 otherwise

ST_t = short-term time trend variable taking a value of $t - 1977$ after 1976 and 0 otherwise

$e_{j,t}$ = unexplained component of the return to decile j in month t

The coefficient on the variable J measures the difference between the average return for the decile in January relative to the other months. The product of J and LT measures any trend in the difference over the entire sample period. The product of J and A represents the difference in the magnitude of the January effect between the period since 1976 and the overall period. The product of J and ST measures any trend in the January effect since its reintroduction to the investment world in 1976.

RESULTS

Table 1 shows the results of Regression 1 over the size deciles and for an equally weighted index of all the stocks. For all but the largest deciles, the January returns are significantly larger than for other months. Moreover, the difference decreases monotonically from 12.4 percent for the smallest to 0.5 percent for the largest decile. The equally weighted index shows a January premium of 4.2 percent.

Table 1. Test of the January Effect: $r_t = a_0 + a_1 J_t + e_t$, 1926–93
(standard errors in parentheses)

Size Decile	R^2	a_0 $s(a_0)$	a_1a $s(a_1)$
1	0.0776	0.0114* (0.0043)	0.1244* (0.0148)
2	0.0403	0.0098* (0.0036)	0.0729* (0.0123)
3	0.0316	0.0082* (0.0031)	0.0562* (0.0108)
4	0.0210	0.0094* (0.0029)	0.0432* (0.0102)
5	0.0167	0.0090* (0.0028)	0.0359* (0.0095)
6	0.0135	0.0093* (0.0026)	0.0310* (0.0092)
7	0.0063	0.0100* (0.0025)	0.0202* (0.0088)
8	0.0051	0.0091* (0.0024)	0.0173* (0.0083)
9	0.0033	0.0097* (0.0023)	0.0133 (0.0080)
10	0.0006	0.0086* (0.0020)	0.0049 (0.0071)
EW	0.0227	0.0094* (0.0027)	0.0418* (0.0095)

[a] a_1 measures the magnitude of the January effect over the whole period.

*Significant at the 5 percent level.

Table 2. Test of the January Effect: $r_t = a_0 + a_1 J_t + a_2 J_t LT_t + e_t$, 1926–93
(standard errors in parentheses)

Size Decile	R^2	a_0 $s(a_0)$	a_1 $s(a_1)$	a_2 $s(a_2)$
1	0.0795	0.0114* (0.0043)	0.1080* (0.0194)	–.0009 (0.0007)
2	0.0417	0.0098* (0.0036)	0.0616* (0.0162)	–.0006 (0.0006)
3	0.0320	0.0082* (0.0031)	0.0505* (0.0142)	–.0003 (0.0005)
4	0.0212	0.0094* (0.0029)	0.0393* (0.0134)	–.0002 (0.0005)
5	0.0167	0.0090* (0.0028)	0.0343* (0.0125)	–.0001 (0.0005)
6	0.0135	0.0093* (0.0026)	0.0300* (0.0121)	–.0001 (0.0004)
7	0.0063	0.0100* (0.0025)	0.0210* (0.0116)	0.0000 (0.0004)
8	0.0052	0.0091* (0.0024)	0.0188 (0.0110)	0.0001 (0.0004)
9	0.0033	0.0097* (0.0023)	0.0133 (0.0105)	0.0000 (0.0004)
10	0.0006	0.0086* (0.0020)	0.0050 (0.0093)	0.0000 (0.0003)
EW	0.0229	0.0094* (0.0027)	0.0381* (0.0125)	–.0002 (0.0005)

*Significant at the 5 percent level.

Table 2 presents the coefficients of Regression 2. None of the deciles exhibits any significant time trend in the difference between the return in January as opposed to other months over the entire period of the study.

Table 3 and Table 4 focus on the period following the January effect's reintroduction. Table 3 shows a small reduction in the magnitude of the January premium in recent years across all deciles, but the reduction does not approaches statistical significance in any decile. Table 4 addresses the recent time trend in the January premium return. The signs of the trends are mixed across deciles, and none of the trends approaches statistical significance. The bottom of Table 3 shows that in the 1977–93 period, the excess January returns for the equally weighted index were still quite large, averaging 2.9 percent across the period.

All in all, the regressions reveal no significant support for a contention that the January effect is disappearing.

Figure 1 charts the magnitude of the January premium returns, by decile, for six recent five-year time periods. The January effect is clearly present in all subperiods shown. No tendency toward disappearance is evident. This finding has two possible explanations:

- *The January effect is not a manifestation of market inefficiency.* That is, it provides no opportunity for investors to earn abnormal rates of return.
- *The financial market is highly inefficient.* When confronted with opportunities to make abnormal returns, insufficient numbers of investors—because of agency problems, risk aversion, inertia, or other obstacles—act so as to eliminate these opportunities over reasonable periods of time (decades).

In support of the first explanation, Bhardwaj and Brooks argued that after considering the differential transaction costs on stocks responding differentially to the January effect, typical investors cannot earn statistically and economically significant abnormal returns by playing the January effect.[6] Indeed, they showed that transaction costs are largest for small, low-priced firms, which congregate in our smaller size deciles.

Individual investors, however, are likely to attempt to exploit the January effect through mutual funds. Because all the participants in a mutual fund share the transaction costs, the marginal costs associated with the trades triggered by an investor's switch of funds from a money market account to a small-capitalization stock account at year-end are unlikely to discourage such attempts to exploit the phenomenon. As such attempts increase in popularity, mutual funds investing in issues tending to show high returns in January should begin receiving inflows of funds, initiating more pur-

Table 3. Test of the January Effect: $r_t = a_0 + a_1 J_t + a_3 J_t A_t + e_t$, 1926–93
(standard errors in parentheses)

Size Decile	R^2	a_0 $s(a_0)$	a_1a $s(a_1)$	a_3b $s(a_3)$	January 1977–93
1	0.0789	0.0114*	0.1333*	–.0357	0.0976
		(0.0043)	(0.0169)	(0.0327)	
2	0.0426	0.0098*	0.0824*	–.0379	0.0445
		(0.0036)	(0.0141)	(0.0272)	
3	0.0333	0.0082*	0.0635*	–.0292	0.0343
		(0.0031)	(0.0123)	(0.0239)	
4	0.0220	0.0094*	0.0483*	–.0205	0.0278
		(0.0029)	(0.0117)	(0.0226)	
5	0.0174	0.0090*	0.0401*	–.0167	0.0234
		(0.0028)	(0.0109)	(0.0211)	
6	0.0138	0.0093*	0.0335*	–.0102	0.0233
		(0.0026)	(0.0105)	(0.0203)	
7	0.0065	0.0100*	0.0225*	–.0090	0.0135
		(0.0025)	(0.0101)	(0.0195)	
8	0.0053	0.0091*	0.0190*	–.0071	0.0119
		(0.0024)	(0.0095)	(0.0185)	
9	0.0034	0.0097*	0.0145	–.0049	0.0096
		(0.0023)	(0.0091)	(0.0176)	
10	0.0006	0.0086*	0.0050	–.0006	0.0044
		(0.0020)	(0.0081)	(0.0156)	
EW	0.0235	0.0094*	0.0461*	–.0171	0.0290
		(0.0027)	(0.0108)	(0.0210)	

[a] a_1 measures the magnitude of the January effect over the first period.
[b] a_3 measures the increase/decrease in the January effect from the first to the second period; therefore, the *net* January effect over the second subperiod is $a_1 + a_3$, which is reported in the last column.

*Significant at the 5 percent level.

Table 4. Test of the January Effect: $r_t = a_0 + a_1 J_t + a_4 J_t ST_t + e_t$, 1926–93
(standard errors in parentheses)

Size Decile	R^2	a_0 $s(a_0)$	a_1 $s(a_1)$	a_4 $s(a_4)$
1	0.0778	0.0114*	0.1220*	0.0012
		(0.0043)	(0.0162)	(0.0033)
2	0.0414	0.0098*	0.0783*	−.0027
		(0.0036)	(0.0135)	(0.0028)
3	0.0326	0.0082*	0.0608*	−.0023
		(0.0031)	(0.0118)	(0.0024)
4	0.0212	0.0094*	0.0452*	−.0010
		(0.0029)	(0.0112)	(0.0023)
5	0.0169	0.0090*	0.0378*	−.0010
		(0.0028)	(0.0105)	(0.0022)
6	0.0135	0.0093*	0.0313*	−.0002
		(0.0026)	(0.0101)	(0.0021)
7	0.0063	0.0100*	0.0200*	0.0001
		(0.0025)	(0.0097)	(0.0020)
8	0.0051	0.0091*	0.0167	0.0003
		(0.0024)	(0.0092)	(0.0019)
9	0.0034	0.0097*	0.0122	0.0005
		(0.0023)	(0.0088)	(0.0018)
10	0.0009	0.0086*	0.0033	0.0008
		(0.0020)	(0.0077)	(0.0016)
EW	0.0227	0.0094*	0.0426*	−.0004
		(0.0027)	(0.0104)	(0.0021)

*Significant at the 5 percent level.

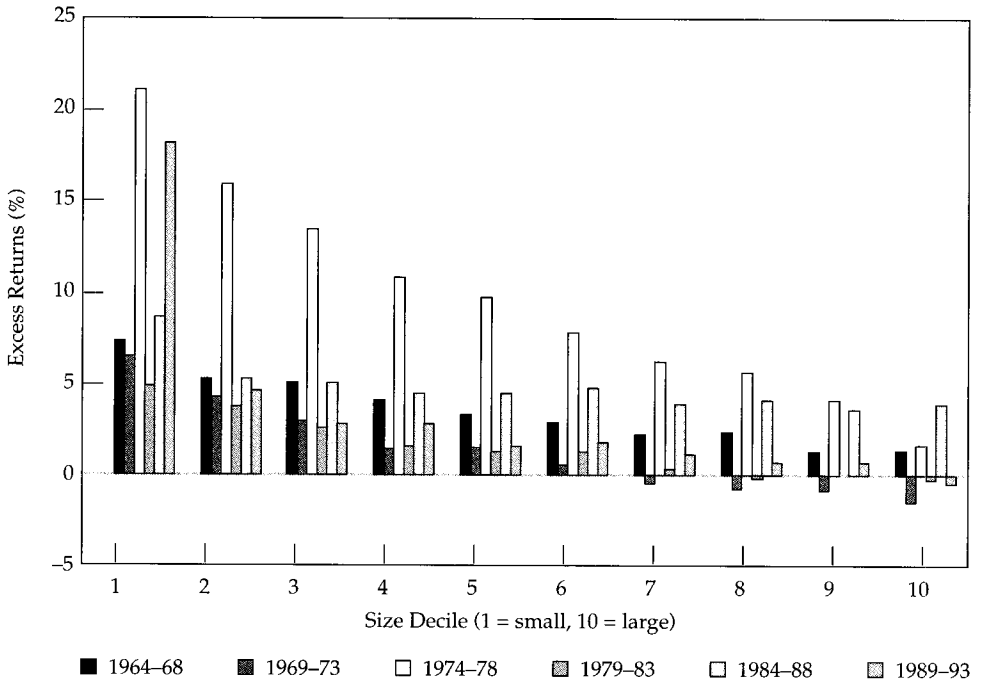
chases in December. Their purchases in December should force the January effect to slide into the preceding year. Because there has been no tendency, thus far, for sufficient numbers of investors to cause this to happen, perhaps the risk associated with the "arbitrage" dissuades enough investors from taking action to allow the effect to persist.

The transaction cost problem can also be circumvented by taking advantage of the effect through futures contracts. Long positions can be taken on indexes that are roughly equally weighted, such as the Value Line contract or contracts on indexes of small stocks (e.g., the recently introduced contract on the Russell 2000 index). Market neutrality can be accomplished by simultaneously taking short positions on contracts on capitalization-weighted indexes of large stocks, such as the S&P 500. The fact that the introduction of these futures contracts has failed to dampen the magnitude of the effect may again reflect an unwillingness on the part of most investors to take advantage of arbitrage opportunities that are associated with significant risk.

CONCLUSION

We find no evidence that the January effect has disappeared from the New York Stock Exchange in recent years. Perhaps it is not a manifestation of market inefficiency and hence is not arbitrageable, or perhaps markets may be slower to arbitrage away inefficiencies than previously thought. Perhaps the market is quick to act only on relatively

Figure 1. January Excess Returns by Firm-Size Decile



riskless forms of arbitrage. Because attempts to exploit the January effect are associated with significant amounts of risk, the effect may persist even in the presence of relatively large expected profits.

NOTES

1. See, for example, D. Keim, "Size-related Anomalies and Stock Return Seasonality: Further Empirical Evidence," *Journal of Financial Economics*, vol. 12, no. 1 (June 1983):13–32; M.E. Blume and R.F. Stambaugh, "Biases in Computed Returns: An Application to the Size Effect," *Journal of Financial Economics*, vol. 12, no. 3 (November 1983):387–404, and R. Roll, "On Computing Mean Returns and the Small Firm Premium," *Journal of Financial Economics*, vol. 12, no. 3 (November 1983):371–86.
2. M.S. Rozeff and W.R. Kinney, "Capital Market Seasonality: The Case of Stock Returns," *Journal of Financial Economics*, vol. 3, no. 4 (October 1976):379–402.
3. S. Wachtel, "Certain Observations on Seasonal Movements in Stock Prices," *The Journal of Business*, vol. 15, no. 2 (April 1942): 184–93.
4. See, for example, M. Reinganum, "The Anomalous Stock Market Behavior of Small Firms in January: Empirical Tests for Tax-Loss Selling Effects," *Journal of Financial Economics*, vol. 12, no. 1 (June 1983):89–104.
5. See R. Haugen and J. Lakonishok, *The Incredible January Effect* (Homewood, IL: Dow Jones Irwin, 1988).
6. R.K. Bhardwaj and L. D. Brooks, "The January Anomaly: Effects of Low Share Price, Transaction Costs, and Bid-Ask Bias," *The Journal of Finance*, vol. 47, no. 2 (June 1992):553–76.