January Effect on the Thinly Traded KLSE: Tests with Appropriate Refinements

M.N. ANNUAR, M. ARIFF[1] and M. SHAMSHER

Department of Accounting and Finance, Faculty of Economics and Management,
Universiti Pertanian Malaysia,
43400 UPM, Serdang, Selangor Darul Ehsan, Malaysia.

[1]*Department of Finance and Banking, National University of Singapore,*
No. 10 Kent Ridge Crescent, Singapore 0511

ABSTRAK

Sejak kebelakangan ini Kesan Januari telah dirakamkan sebagai gelagat anomali di kebanyakan pasaran saham di negara-negara maju. Kesan Januari berlaku apabila pulangan sekuriti pada awal bulan Januari melebihi pulangan pada bulan-bulan yang lain. Kewujudan Kesan Januari di Bursa Saham Kuala Lumpur (BSKL) telah ditemui oleh satu kajian awal. Kajian ini adalah lanjutan kajian tersebut dan mengambil kira beberapa penghalusan yang wajar seperti mengkaji pulangan 298 saham (bukan mengkaji pulangan atas indeks), mengkaji hubung kait kesan saiz dengan Kesan Januari, dan mengkaji kesan faktor ketipisan dagangan. Penemuan kajian ini menunjukan bahawa Kesan Januari tetap wujud bagi pulangan saham di BSKL dan pulangan purata bersih sebanyak 1.75 peratus diperolehi dalam bulan Januari. Walaupun demikian, pulangan purata bersih ini belum diselaraskan risikonya: oleh itu kecekapan penilaian Kesan Januari belum dapat dipastikan. Berbeza dengan hasil penemuan di negara-negara maju, kesan saiz tidak dapat dihubungkaitkan dengan Kesan Januari. Kemungkinan faktor ketipisan dagangan sebagai penjelasan wujudnya Kesan Januari disokong oleh kajian ini.

ABSTRACT

Over recent years the January Effect has been documented as an anomaly on stock markets around the world. The January regularity refers to the phenomenon that security returns in early January are higher than in any other period of the year. The presence of the January regularity on the Kuala Lumpur Stock Exchange (KLSE) has been established. However, this study investigates further the possible explanations, taking into consideration the returns on stocks rather than indices, control for thinness of trading and the association of the regularity with size effects. The evidence indicates that returns on 298 stocks traded in KSLE do exhibit the January seasonality, and the average returns net of cost for January are 1.75 per cent. However, these net average returns are not adjusted for risk, therefore it is difficult to confirm the valuational efficiency of the regularity. In contrast to the documented evidence in developed securities markets, the size effect cannot rationalise the regularity in the developing Kuala Lumpur Stock Exchange. The possibility of the thinness of trading as a factor that could partially explain the regularity is supported.

INTRODUCTION

In recent years, a number of anomalies in market price behaviour have been documented in professional and academic journals. One such regularity is the January effect on stock markets around the world. This regularity was observed in Copenhagen Stock Exchange as far back as the 1890s (Jennergren and Sorensen 1988) but was only given serious attention in the mid-1970s. The January regularity refers to the phenomenon that security returns in early January are higher than in any other period of the year. It has also been documented that average returns on stocks of small firms in January are relatively higher than those of large firms (Keim 1983, Gultekin and Gultekin 1983). However, the regularity has been noted in returns of a variety of share characteristics such as size, yield and neglected firm

(Keim 1983, 1985, Arbel and Strebel 1983, Arbel 1985).

Like all anomalies, the January regularity is documented as evidence of market inefficiency (Jacobs and Levy 1988). If this regularity implies a regular and predictable pattern of price behaviour, should not then the market arbitrage away such regularity? Keane (1989) explains that the regularity might explain imformational inefficiency, but for the market to be valuationally efficient, the regularity must be material and persistent for a reasonable period of time. The evidence of market anomalies suggests that the informational definition of market efficiency by Fama (1970), ..." the market is efficient if it correctly reflects all available information ....." cannot be completely true of the real markets. For investment purposes the markets might be valuationally efficient as there is no evidence that the seasonalities are exploitable.

A number of plausible explanations have been offered for the January regularity which at best rationalise investors' behaviour but do not explain how the January returns might be reconciled with market rationality. Keim (1983) and Reinganum (1983) suggest that a large part of the differential risk adjusted returns occur in the first week of January, consequently it might be that investors sell securities at the end of the year to establish short-term losses for income tax purposes and then buy securities in early January. This explanation suggests that there is a downward pressure on stock prices in late November and December and a positive impact in early January. This explanation assumes that capital gains are taxed as income and capital losses are deductible from taxable income. However, Constantinides (1984) argues that an optimal policy for investors who want tax shields against profits is to realise losses as they occur and not wait for the end of the tax year. Portfolio managers usually sell low performing securities at the end of the year to avoid their appearance on the annual report. Similar securities are repurchased in the new year. Rogalski and Tinic (1986) suggest that the regularity might be partially explained as compensation for higher risk and provide evidence that volatility of security prices in January is significantly greater than in other months.

Arbel (1985) suggests the regularity might be a compensation for bearing informational risk. The effect may be due to the reduction of uncertainty associated with the dissemination of information after the end of the fiscal year for small and neglected firms. However, Chari *et al.* (1986) provide evidence that companies with non-December fiscal year experience returns that are seasonal at the turn of the fiscal year, as information risk is resolved rather than at calendar year end.

Jacobs and Levy (1988) suggest that cashflow patterns at the end of the year may explain the January regularity. Annual bonuses, holiday gifts and pension contributions might be invested in the stock market in January. However, this regular and predictable returns could be arbitraged. In summary, the literature on the regularity provides no convincing evidence of economic significance of the regularity. For investment purposes, this is sufficient reason for investors to behave as if the market is valuationally efficient.

Objective of Study

The presence of the January regularity on the KLSE has been established (Annuar and Shamsher 1987). However, this study intends to investigate further the possible explanations, taking into consideration important characteristics of a developing securities market like KLSE. This study refines the previous study in the following respects:

(i) It investigates the regularity on returns of 298 stocks rather than indices. The use of indices results in underestimation of the returns as dividends are not included.

(ii) It controls for the thinness of trading of stocks at KLSE. Thinness of trading is a peculiar characteristic of developing securities markets. Failure to adjust for thinness of trading biases the results in favour of the null hypothesis of non-regularity for a given level of significance. Thinness is controlled by analysing the returns of stocks which are continuously traded in the market over the period of study. Eighty-two stocks qualified for this requirement.

(iii) After controlling for thinness of trading, the association of the regularity with size effect is investigated.

(iv) The presence of the regularity is investigated on the returns of the total sample (298 stocks), the controlled sample (82 stocks) and non-controlled traded sample (298 less 82 stocks). If the presence of the regularity is observed only in the total and the non-controlled sample, this would suggest that thinness of trading might explain the regularity.

(v) The valuational efficiency of the regularity (if present) would be determined, considering

round-trip transaction costs of about 2.7 per cent on the KLSE.

Prior Research

There is a dearth of published evidence on the January regularity of returns at the KLSE. Annuar and Shamsher (1987) showed the presence of the January regularity at the KLSE. However, they used indices instead of individual securities.

Wong *et al.* (1989) used six KLSE sectorial indices from 1970 to 1985 and showed the presence of the regularity, expressed in terms of the Gregorian calendar month effect. Yong (1989) also used six sectorial indices at KLSE from 1970 to 1988 and concluded that there is no January regularity on the KLSE.

In view of mixed evidence prevailing, this study intends to investigate the presence of the regularity considering the appropriate refinements discussed earlier.

MATERIALS AND METHODS

Monthly price relatives were calculated for the 298 listed stocks on KLSE for the period January 1975 to June 1989. The returns are calculated as follows:

$$R_{it} = \log\left[\frac{P_{it} + D_{it}}{P_{it-1}}\right]$$

where P_{it} is the price of the stock i at time period t. P_{it-1} is the price of the stock i at time period t-1.

The average monthly returns were computed for all the months over the 15-year period of study. The difference between January returns and returns for February to December were determined. Any significant difference would imply the presence of the regularity.

To ascertain the possible association of the regularity with activeness of trading, 82 stocks were identified from ten deciles, ranging from the most active trading (decile 10) to the least active (decile 1). This sorting was done for each year and ten deciles were reformed each succeeding year to 1989. This results in ten deciles of stocks with broadly similar frequency of trading within each decile, such that the returns calculated in a particular decile are free of thin-trading bias. Thinness of trading is measured by normalising the annual volume of trading by the average number of shares outstanding.

For each decile, the difference between January returns and returns for February to December was observed and the difference was tested for significance using normal test statistics.

To ascertain the possible link between the regularity and size of firms, the 82 controlled stocks were categorised into small and large firms based on their market value of stocks at the end of each year. The presence of the anomaly was tested on the samples of large and small firms.

The following hypotheses were tested:

(1) The presence of the January anomaly on returns of 298 listed stocks at KLSE. The presence of the regularity will be evidenced by the significant positive difference between average January returns and average returns of February to December.

(2) For the sample of controlled stocks, the presence of the regularity on returns of stocks with different activeness of trading was investigated. If there is no evidence of the regularity on the most and the least actively traded stocks, it would imply that thinness of trading might partially explain the regularity.

(3) The presence of the regularity on returns of different sizes of firms. If the regularity is present only on returns of small firms, this would imply that size might partially explain the regularity.

(4) The economic significance of the regularity is then evaluated. If the regularity is present, could investors devise a trading strategy to earn abnormal gains net of the round-trip costs of about 2.7 per cent.

RESULTS

Tables 1(a) and (b) summarise the mean returns of each month for the 298 stocks, for the period 1975 to 1989. The average monthly percentage returns are positive for all the months. The January returns of 4.45 per cent are about twice as large as the average returns of February to December, and the difference is significant at 5 per cent level.

This evidence is consistent with the findings of our earlier research (Annuar and Shamsher 1987), which implies that the presence of the regularity cannot be attributed to few outliers as the number of positive returns dominate the negative returns in January. It is also possible that large returns in January could be due to higher total risk on stock returns, as measured by variances of returns.

TABLE 1(a)

Average monthly percentage returns of 298 listed stocks on KLSE: 1975-1989

Month	Return	Variance
January	4.45	0.0023
February	2.75	0.0014
March	1.38	0.0017
April	3.79	0.0032
May	3.24	0.0025
June	1.42	0.0026
July	1.46	0.0012
August	0.35	0.0023
September	0.22	0.0034
October	0.16	0.0012
November	2.86	0.0061
December	1.96	0.0043

TABLE 1(b)

Average January percentage returns versus average percentage returns of February through December of 298 stocks: 1975-1989

January	February-December	t-stat
4.45	2.06	2.47 *

*significant at 5 per cent level.

However, Table 1(a) shows that for the sample studied, variances of returns cannot explain the higher January returns. The variance of returns for January is 0.23 per cent, which is lower than all months except February, March, July and October. Table 1(a) also shows that the returns in October were on average significantly lower than any other month of the year for the 15-year period, consistent with the October effect, reported by Cadsby (1988).

January Effect and Frequency of Trading

Table 2 shows the average monthly percentage returns on portfolios of stocks with different frequency of trading. For the most actively traded decile (decile 10), the returns for each month are positive except for the month of October. Irrespective of including (F_{all}) or excluding (F_J) the month of January, there is no significant difference in the returns of each month in this decile. The average returns in January (5.4%) the fourth largest after the returns in November, April and September, are not significantly different from the average returns for the months of February to December (t=1.61).

For the next most active decile (decile 9), the average returns for January are positive (5.1%) but not significantly different from average returns of February to December (t=1.46). However, the F-statistics (F_{all}) and (F_J) are significant at 5 per cent level implying that there is a significant difference in the average returns of each month.

For the least actively traded stocks (decile 1), returns are positive for all months, but there is no evidence of significant difference in the returns of each month $(F_{all} = 1.33$ and $F_J = 1.39)$. The average January returns are not significantly different from the average returns of February to December (t=1.63).

For the intermediate deciles (decile 4 and 5) there is evidence of significant difference between average January returns and average returns of February to December at 5 per cent level. This implies that, on all average, January regularity might be confined to stocks with moderate activeness.

Overall, the absence of the regularity in eight out of the ten deciles (based on t-statistics and F-tests) suggests that thinness of trading might explain the regularity.

January Effect on 216 Non-controlled Stocks

The presence of the regularity is investigated on the total sample of 298 stocks less the 82 controlled traded stocks. The findings are summarised in Tables 3(a) and 3(b). The average monthly percentage returns for all the months except September are positive. The average returns for January are three times as large as the average returns of February to December (4.31% versus 1.4%), and the difference is significant at one per cent level (t=3.28). This further supports the notion that thinness of trading might explain the regularity.

January Effect and Sizes of Firms

Tables 4(a) and (b) show that for samples of both large and small firms, the average returns for January are significantly different from the average returns of February through December at 5 per cent level (t=2.19 and 2.60 respectively). This evidence suggests that size effect alone cannot explain the regularity, which is inconsistent with the documented evidence on developed securities markets. The pronounced January effect on returns of small firms documented in developed securities markets (Keim 1983), could be due to relative thinness of trading of small firms' stocks.

TABLE 2

Average monthly percentage returns on portfolio stocks with different levels of trading: 1975-1989

| | Month | | | | | | | | | | | | | | | |
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average (Feb-Dec)	F_{all}	F_J	t-test
(Most Active) Decile 10	5.425	2.221	3.66	7.789	3.991	2.765	3.283	0.765	5.887	-3.393	7.817	4.435	3.569	0.90	0.84	1.161
Decile 9	5.124	2.482	4.505	3.905	2.678	0.443	0.560	-1.00	-2.136	1.245	0.956	5.005	1.694	2.44*	2.50*	1.461
Decile 8	6.949	4.504	1.933	2.893	2.650	3.145	8.033	1.670	-0.192	-0.509	-0.958	4.866	2.548	1.65	1.40	1.56
Decile 7	2.534	1.666	2.651	5.048	4.951	0.020	4.260	-1.386	4.080	-1.269	-1.312	3.427	2.012	1.08	1.13	0.38
Decile 6	6.637	1.952	3.669	3.048	3.318	2.261	0.934	1.584	0.036	0.408	-0.818	4.821	1.928	1.51	1.14	1.83
Decile 5	7.404	2.379	3.233	4.431	0.469	2.181	-1.107	1.363	0.166	0.277	-0.223	3.728	1.536	1.21	1.05	1.98*
Decile 4	5.149	3.033	1.339	4.367	1.512	0.505	-0.448	1.382	3.152	-0.300	-0.132	5.366	1.797	1.71	1.55	2.22*
Decile 3	3.696	0.887	3.876	2.672	3.347	-0.166	0.803	0.367	-0.331	-0.174	0.687	4.681	1.514	1.89*	1.76	1.24
Decile 2	3.316	4.023	3.360	3.327	1.213	2.329	-0.119	0.499	1.019	-1.388	1.498	3.753	1.790	1.76	1.54	0.94
Decile 1 (Least Active)	1.752	0.917	3.649	4.307	1.467	0.838	1.186	1.209	1.137	0.923	4.826	1.619	2.007	1.33	1.39	1.63

* significant at 5 per cent level

TABLE 3(a)

Average monthly percentage returns of 216 stocks on KLSE: 1975-1989

Month	Return	Variance
January	4.31	0.0010
February	2.88	0.0005
March	0.69	0.0010
April	3.64	0.0025
May	0.40	0.0032
June	1.41	0.0021
July	1.35	0.0008
August	0.24	0.0019
September	-0.18	0.0022
October	0.38	0.0005
November	3.47	0.0067
December	1.13	0.0002

TABLE 3(b)

Average January percentage returns versus average percentage returns of February through December of 216 stocks: 1975-1989

January	February-December	t-statistics
4.31	1.40	3.28*

* Significant at 1 per cent level

TABLE 4(a)

Mean average percentage returns for large and small firms: 1975-1989

	Large Firms	Small Firms
January	5.169	4.157
February	0.333	1.935
March	2.118	2.475
April	5.539	3.303
May	3.413	1.346
June	2.826	1.932
July	2.073	1.257
August	0.273	-0.228
September	1.989	0.437
October	-1.378	-0.063
November	-0.346	-0.327
December	2.689	2.391
February to December	1.775	1.223
F_{all}	1.34	1.23
F_J	1.39	1.18

TABLE 4(b)

Average returns in January versus average returns of February through December: 1975-1989

Group	January	February to December	t-statistic
Large firms	5.169	1.775	2.19*
Small firms	4.157	1.223	2.60*

* Significant at 5 per cent level

DISCUSSION

The presence of the January regularity was investigated and supported on returns of 298 stocks listed on the KLSE. The average January returns exceed the round-trip transaction costs of 2.7 per cent. However, the average January returns net of transaction cost are not adjusted for risk, thus the valuational efficiency of the net return cannot be confirmed. The total risk of security returns in January was lower than those of most other months, implying that it cannot rationalise the regularity.

The January effect was investigated on a sample of controlled stocks. There was no evidence of the regularity in both portfolios of most actively traded and least actively traded stocks. Only the moderately active portfolio of stocks exhibited the presence of the regularity. Since only two out of ten deciles exhibited the regularity, it supports the suggestion that thinness of trading might partially explain the regularity . Thus it is possible that the apparent January regularity documented in developing securities markets could be a proxy for the effect of thinness of trading.

Since Keim's (1983) study indicated that much of the year's size effect seemed to occur in January, a series of papers by Banz (1981), Keim (1985), Roll (1982), and Keim and Stambaugh (1984) showed that all of the small companies' effect in U.S. virtually occurs at the end of December and early January. They tend to rationalise the January regularity in terms of small firm effect. The sample in this study was divided into 'small' and 'large' firms based on the market value of the outstanding stocks at the beginning of each year. The presence of the regularity in both samples was investigated and supported. This implies that size factor alone cannot explain the January regularity. However, it is possible that the January regularity was reinforced by the small firm effect but certainly the size factor *per se* cannot explain the regularity on stocks traded in KLSE.

The regularity is observed on the returns of the total sample, and the non-controlled sample but was not present in the controlled sample.

This suggests that to mitigate the possibility of implausible findings, empirical studies on the January regularity in developing securities markets should control for the thinness trading.

CONCLUSION

The returns on stocks traded on the KLSE do exhibit the January seasonality, and the average returns net of cost for January are 1.75 per cent. However, as these net average returns are not adjusted for risk, it is difficult to confirm the valuational efficiency of the regularity.

In contrast to the documented evidence in developed securities markets, the size effect cannot rationalise the regularity as both samples of large and small firms exihibited large and positive significant returns in January *vis-a-vis* the returns of February to December.

The possibility of thinness of trading as a factor that could partially explain the regularity was investigated and supported.

This suggests the necessity of controlling for thinness of trading in any empirical study on the January anomaly in developing securities markets.

REFERENCES

ANNUAR, M.N. and M. SHAMSHER. 1987. The January Effects on Stocks Traded on the Kuala Lumpur Stock Exchange: An Empirical Analysis. *Hong Kong Journal of Business Management* 5: 37-52.

ARBEL, A. and P. STREBEL. 1983. Pay Attention to Neglected Firms. *The Journal of Portfolio Management* 9: 37-42.

ARBEL, A. 1985. Generic Stocks: An Old Product in a New Package. *The Journal of Portfolio Management* 11: 4-13.

BANZ, R.W. 1981. The Relationships between Returns and Market Value of Common Stocks. *J. Finan. Econs.* 9: 3-18.

BILDERSEE, J. and N. KAHN. 1987. A Preliminary Test of the Presence of Window Dressing. *Journal of Accounting, Auditing and Finance.* 44:

CADSBY, C.B. 1988. The CAPM and the Calendar Anomaly: A Systematic Treatment of Empirical Anomalies. University of Guelph, Discussion Paper.

CHARI, V., R. JOGANNATHEN and A. OFER. 1986. Fiscal Year End and the January Effect. Kellogg Working Paper #20, Northwestern University.

CONSTANTINIDES, G.M. 1984. Optimal Stock Trading with Personal Taxes: Implication for Prices and the Abnormal January Returns. *J. Finan. Econs.* 13: 65-89.

FAMA, E.F. 1970. Efficient Capital Markets: A Review of Theory and Empirical Evidence. *J. Finan.* 25: 383-417.

GULTEKIN, M. N. and N. B. GULTEKIN. 1983. Stock Market Seasonality: International Evidence. *J. Finan. Econs.* 12: 469-481.

JACOBS, B. I. and K. N. LEVY. 1988. Calendar Anomalies: Abnormal Returns at Calendar Turning Points. *J. Finan. Analy.* 44: 28-39.

JENNERGREN, L. and P. SORENSEN (1988), quoted in Keane, S. M. Seasonal Anomalies and The Need for Perpective *Investment Analyst*, 91: 25-30.

KEANE, S. M. 1989. Seasonal Market Anomalies and the Need for Perspective. *Investment Analyst* 91: 25-30.

KEIM, D. B. 1983. Size Related Anomalies and Stock Return Seasonality: Further Evidence. *J. Finan. Econs.* 12: 13-32.

KEIM, D. B. 1985. Dividend Yields and Stock Returns: Implications of Abnormal January Returns. *J. Finan. Econs.* 14: 473-489.

KEIM, D. B. and R. STAMBAUGH. 1984. A Further Investigation of the Weekend Effect in Stock Returns. *J. Finan.* : 819-837.

REINGANUM, M. R. 1983. The Anomalies in Stock Behavior of Small Firms in January: Empirical Tests for Tax Loss Selling Effects. *J. Finan. Econs.* 12: 89-104.

ROGALSKI, R. and S.M. TINIC. 1986. The January Size Effect: Anomaly or Risk Measurement. *Finan. Analy. J.* 42: 63-70.

ROLL, R. 1982. A Possible Explanation of the Small Firm Effect. *J. Finan.* 36: 879-888.

WONG, P.L., S. K. NEOH, K.H. LEE and T. S. THONG. 1989. Seasonality in The Malaysian Stock Market. *Proceedings of the Inaugural International Conference on Asian-Pacific Financial Markets,* National University of Singapore.

YONG, O. 1989. Seasonality Effect in the Kuala Lumpur Stock Exchange. *Malaysia Management Review* 24: 37-43.