IS THERE A CHINESE NEW YEAR EFFECT IN MALAYSIA?

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ABSTRACT

Yong (1993) has suggested that the presence of a "Chinese new year" may explain the existence of the January effect in the Kuala Lumpur Stock Exchange. It is necessary to provide some explanation for a January effect as Malaysia does not have a capital gains tax and the tax loss selling hypothesis cannot apply. In this paper we investigate whether the Chinese new year can explain the January effect. In addition to finding that the Chinese new year does not explain any January effect, we also are unable to find evidence of a January effect.

INTRODUCTION

Beginning with Basu (1977) a whole pantheon of empirical regularities in capital markets have been identified. Thomas Kuhn (1970:52) argues that "[d]iscovery begins with the awareness of anomaly, ie., with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science". There are a number of empirical regularities or anomalies that violate our expectations of how capital markets operate. These include, for example, the size effect, day of the week effect and turn of the year effect. For recent comprehensive summaries see Thaler (1987a,b), Reinganum (1992) and Ritter (1992) and the references therein.

Many of these effects are related to the calendar, some seem to be related to calendar changes ie. the change from one month to the next. There is no theoretical reason why this should be so. In fact, there are strong theoretical grounds for arguing that they should not be present at all. The efficient market hypothesis (EMH) holds that share returns should be a function of information arrival and there is no reason to believe that information should be related systematically to the calendar. Similarly, the capital asset pricing model (CAPM) postulates that share returns should be related to systematic risk. Again, there is no reason to believe that risk is related to the calendar.

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If, however, any of these two theories is more likely to be violated by the existence of empirical anomalies, it is the CAPM. It is well known that econometric difficulties with the CAPM render the CAPM almost impossible to test (see Roll 1977 for a discussion). Also, Fama and French (1992) have argued that there is no discernible relationship between return and risk as measured by beta.

This paper explicitly examines the issue of a Chinese new year effect in Malaysia. While conducting research into the January effect in Malaysia, Yong (1993) has argued that a Chinese new year effect may be the cause of high January returns observed. This research is important for a number of reasons. Firstly, it will allow us to discover whether the Kuala Lumpur Stock Exchange (KLSE) is efficient or not. If not, it indicates that there are unexploited profit opportunities available to investors. In addition, market efficiency has policy implications for market regulators. One of the most effective forms of investor protection is an efficient market. Secondly, it will allow us to comment on the rationality of "western" stock markets – where the January effect is usually observed. It will also allow us to determine whether a Malaysian January effect is related to the Chinese new year. This would allow us then to speculate as to the reason for high January returns in western markets. While many explanations have been forwarded, market irrationality has never been considered. In short, it could be that given a "new year" investors feel more optimistic about the future and as a result bid up prices. In short, is the January effect caused by "animal spirits"? If the same pattern (ie. increased prices after the Chinese new year) is observed in Malaysia, then it could be (tentatively) argued that the irrationality argument has some merit. (We, however, do not believe that this will be the case.) The layout of the remainder of the paper is as follows. In the next section we review some of the literature on the turn of the year effect and consider some Malaysian evidence. The third section sets out our method and results. This is followed by a conclusion.

LITERATURE REVIEW.

The first major investigation into seasonality or calendar effects was undertaken by Rozeff and Kinney (1976). They refer to a previous literature, but argue that there is no consensus as to the existence of any seasonal effect (Rozeff and Kinney 1976:379). Rozeff and Kinney (1976) conduct parametric and non-parametric tests on share price data drawn from the NYSE for the period 1904-1974. They calculate summary statistics for a number of sub-periods and report that, "the most consistent feature of these statistics is the high January rate of return" (Rozeff and Kinney 1976:387). They then conduct a Kruskal-Wallis test, in order to determine whether or not the

monthly returns have identical population distributions and determine that January is the month that differs from the others. The parametric tests confirm the results of the non-parametric test. The existence of a January effect has been confirmed in many markets, (see especially Gultekin and Gultekin 1983). This effect has been found to be concentrated in the first few days of January and linked especially to the returns of small capitalisation stocks.

According to Ritter (1988:701) there are various explanations that have been investigated in the literature. These include an omitted risk-factor, ie. the CAPM is misspecified; the tax-loss-selling hypothesis; and, an information hypothesis. Of these explanations, only one is compatible with the CAPM: a tax-loss explanation would not invalidate the CAPM. The other explanations do invalidate the CAPM. There is substantial evidence that the CAPM is misspecified (see especially Fama and French 1992). This however, may be due solely to the inability of researchers to identity the true market portfolio.

The US has a tax regime that taxes both income and capital gains. The US tax year runs from January to December. Just as capital gains are taxed, so capital losses can be used to shield income. Roll (1983:20) states that the effect occurs because investors are selling those stocks that have experienced a relative decline in value over the tax year in order to realise tax losses. In January the selling pressure eases and the shares return to their equilibrium values. This ties the January effect to the small firm effect, as small firms are more likely to have experienced a decline (see Banz 1981 and Reinganum 1983 for a discussion of this issue). It is the fact that this argument seems to violate the efficient markets hypothesis (EMH) that leads Roll (1983:20) to argue that the tax-loss-selling argument "is ridiculous, of course". The EMH argument being that once arbitragers realised that there was a systematic seasonal pattern, they would exploit it and the pattern would disappear.

There are three reasons why the persistence of the January effect is not a violation of the EMH. The first reason being that since transaction costs associated with small firms are higher than with large firms (Roll 1983:23), it may not be possible to exploit price differentials after the transaction costs have been factored into the calculation. Indeed, Reinganum (1983:103) performs a rough calculation on transaction costs and concludes that, "the hypothetical dollar profits associated with these abnormal returns do not appear to be large and may vanish after transaction costs". The second argument in favour of the EMH is that it may be difficult for the arbitrager to identify tax-loss candidates. Roll (1983: 24) argues that unless the stock is trading at an all time low, there will

be some shareholders who have a capital gain with respect to the price that they paid. The third argument flows from the fact that arbitragers may not wish to hold an overly unbalanced portfolio. The arbitrager would have to abandon his present portfolio and hold a portfolio that consists of small illiquid stocks. This may be undesirable even for the risk taking arbitrager. So while there may be *prima facie* evidence that the tax-loss-selling hypothesis violates the EMH, this is not necessarily true.

The Malaysian tax code does not tax capital gains and as a result, we would not anticipate tax loss selling behaviour at the end of the tax year. There may, however, still be a turn of the year effect at the end of the calendar year. Despite the Australian tax year ending in June, Brown, Keim, Kleidon and Marsh (1983), suggest the possibility that a January seasonal effect may still arise in Australia due to arbitrage in an integrated world market. They find a seasonal effect in December–January and July-August. They conclude, however, that the tax-loss explanation probably does not explain the January effect.

Yong (1993) investigating the various KLSE indices over the period 1970 – 1988 reports the existence of a January effect in the Malaysian stock market and also argues that this is not due to the tax loss selling hypothesis. Alternate explanations that he offers are: "window dressing", this occurs when portfolio managers substitute less risky assets for risky assets in order to appear more conservative in their management style; and a "Chinese new year effect". There are two potential explanations for this latter effect. Firstly, as the Chinese new year approaches, speculators may come to dominate the market in order to raise cash for the giving of "angpow" (gifts to friends and relatives) and secondly, large investors may "push up" prices prior to the Chinese new year, so that prices do not decline substantially in their absence (Yong 1993:133).

Neither of these explanations are entirely satisfactory. If more speculators are active in the market (in order to raise funds) we would anticipate that returns would decline in the period before the Chinese new year. These speculators would want to hold cash before the new year for the giving of angpow and in order to raise that cash they would sell their stock. In other words, if this explanation were true, prices would rise before the new year and subsequently fall *before* the new year. Given that this pattern would be known to occur, arbitrage should inhibit the pattern from occurring at all. In any event, given the relative liquidity of the KLSE, increased speculative behaviour should have a greater effect on volatility than on price.

METHOD AND RESULTS.

In order to investigate the turn of the calendar new year and Chinese new year effects on the KLSE, daily share price data for the KLSE composite index was drawn from the PACAP database for the period 1977 – 1993. The KLSE composite index contains 100 stocks (with effect from 18/4/95) and is a value weighted index. Return data was calculated assuming continuous compounding, as follows:

$R_{it} = \ln (P_{it}/P_{it-1})$

where R_{it} = return of the index for period t and P_{it} = price of the index on day t.

The mean monthly returns are then calculated as follows:

$R_t = \sum R_{it}/n$

where R_t = the return in month t, n = the number of daily returns (R_{it}) in the month.

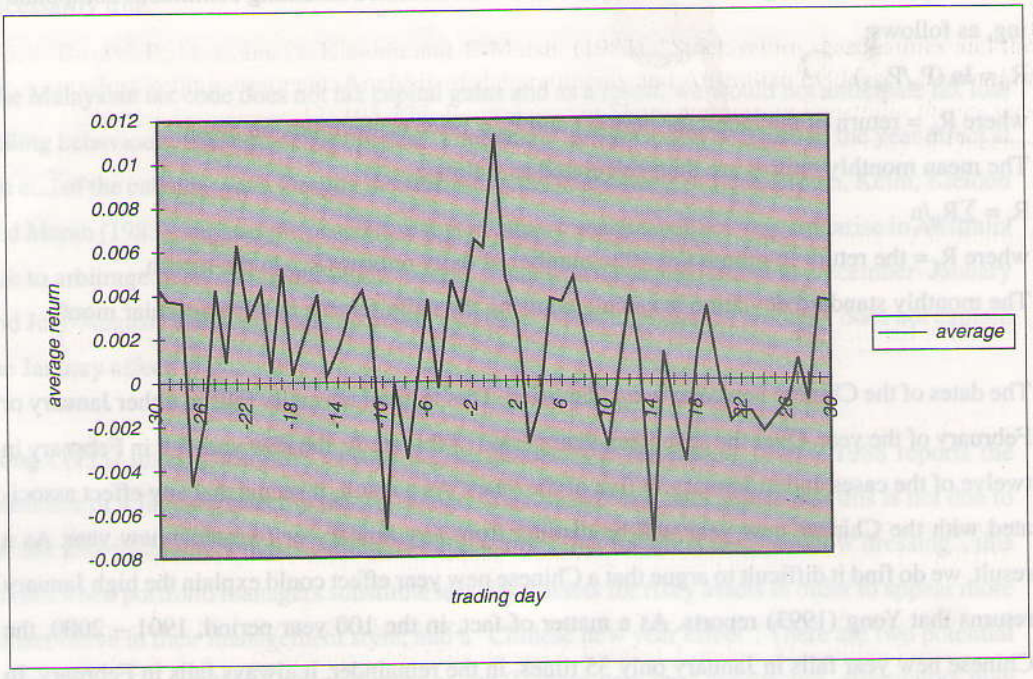
The monthly standard deviation is calculated using the daily returns in any particular month.

The dates of the Chinese new year were identified. This festival normally falls in either January or February of the year. Over the seventeen year period of this study, the new year fell in February in twelve of the cases and in January in five of the years. As a result, it seems that any effect associated with the Chinese new year will be distinct from any January or (western) new year. As a result, we do find it difficult to argue that a Chinese new year effect could explain the high January returns that Yong (1993) reports. As a matter of fact, in the 100 year period, 1901 – 2000, the Chinese new year falls in January only 35 times, in the remainder, it always falls in February. In Yong's (1993) sample period, consisting of 19 years, the Chinese new year fell in January on six occasions. In this paper then, we clearly anticipate that the Chinese new year is a separate market "event" (if any) to the western new year.

In order to understand the Chinese new year, we begin by simply plotting the returns of the market for the 30 (trading) days before and after the Chinese new year. The average returns for the 60 day period surrounding the Chinese new year can be seen in figure one. While these returns are raw and not adjusted for risk or market movements in the international economy, it does seem that a distinct pattern is observable. From day - 10 the market rises; on the day of the Chinese new year it begins to fall until day +3. This pattern in the returns indicates *prima facie* that the Chinese new year is a "market event". However it is inconsistent with the explanations given by Yong (1993). The percentage difference between the return on day -10 and the day of the Chinese new year is

only approximately 2%. This is roughly equivalent to the cost of a round trip, so it would also appear that while there is a clear trend, it is not economically significant.

FIGURE 1: AVERAGE DAILY RETURNS AROUND THE CHINESE NEW YEAR.



Descriptive statistics for the months of the year are shown in Table 1. Also shown in Table 1 is a "composite" month which consists of the mean return of the month that contains the Chinese new year in any particular year. For example, Chinese new year falls in January in 1979, so the January return is included; in 1977, Chinese new year falls in February so February is included and so on.

TABLE 1: DESCRIPTIVE STATISTICS.

The mean return data is the average monthly mean return for each month over the 17 year period. The standard deviation is the mean standard deviation of daily returns for each particular month over the 17 year period. The Kolmogorov Smirnov test for normality indicates that all months (except August) are normally distributed. Normality is rejected for August at the 10% significance level.

	Mean Return	Standard Deviation	Skewness	Excess Kurtosis	KS test (Normality)
January	1.38e-3	1.05e-2	-.516	-.663	0.096
February	1.27e-3	1.02e-2	.009	-.729	0.131
March	2.12e-4	1.04e-2	.351	-.46	0.13
April	1.49e-3	7.71e-3	-.928	.193	0.127
May	1.81e-3	8.38e-3	.272	-.644	0.137
June	8.48e-4	1.03e-2	.22	-.729	0.096
July	1.68e-4	1.12e-2	-1.54	2.75	0.159
August	-1.21e-3	1.37e-2	-1.38	3.20	1.381*
September	-6.2e-4	1.29e-2	-.535	.044	0.977
October	3.25e-4	1.39e-2	-2.05	6.66	0.166
November	-6.75e-4	1.08e-2	.113	.799	0.145
December	1.99e-3	1.15e-2	.337	3.67	0.133
Composite	1.39e-3	.010	.266	-1.38	0.165

In order to determine the presence of a new year effect, t-tests were performed on the mean monthly returns. (results shown in table 2) Both the "composite" month and January mean returns were compared to all other months to establish whether there was any difference. An F-ratio testing the group variances (not shown here) indicated that the variance of the monthly mean returns were generally not (statistically) different from each other and so the t-test employed assumes equal variances. In the single case where group variances were different from each other (the month of October) the t-test assuming unequal variances was employed.

TABLE 2: T-TESTS FOR DIFFERENCES IN RETURNS.

*Ho: There is no difference between mean returns of January and the "composite" month and the other months of the year. All statistics shown are p-levels. t-tests assuming equal variances were employed, except in the case of October (marked with *) where F-tests indicated unequal variances.*

	January	"Composite"
January		0.9985
February	0.9270	0.9290
March	0.2152	0.2516
April	0.9237	0.9294
May	0.6629	0.6871
June	0.6412	0.6579
July	0.2963	0.3216
August	0.0846	0.0950
September	0.1016	0.1187
October	0.5478*	0.5563*
November	0.0995	0.1157
December	0.5932	0.6153

As can be expected there is no statistical difference between the "composite" month and January and February; after all the composite month is simply a combination of those months' returns. What is surprising, however, is that neither January nor the composite months' return appear to be any different from those of any other month. August has a p-level < 10% but at the more commonly accepted 5% level there is no statistical difference between the mean monthly returns. Not only then, is the high January return observed in Yong (1993) not caused by the Chinese new year, but, we are unable to find evidence of a high January return.

In order to further investigate the presence (or not) of a new year effect (be it western or Chinese) the reward to risk ratio was calculated. This ratio was taken as simply the monthly mean return divided by the standard deviation of the returns for that month (descriptive statistics for the reward to risk ratio can be seen in table 3). The Kolmogorov-Smirnov test for normality again indicated

that the data are normally distributed. Consequently, t-tests comparing the reward to risk ratio across the different months were performed. (shown in table 4) Again, F-tests indicated that the variances were not statistically different from each other and the t-tests assume equal variance.

TABLE 3: DESCRIPTIVE STATISTICS FOR THE REWARD TO RISK RATIO.

	Mean	Standard Deviation	Skewness	Excess Kurtosis	KS test (Normality)
January	0.1877	0.3249	0.0259	-1.1307	0.1251
February	0.1357	0.3800	0.2151	-1.0467	0.1491
March	0.0575	0.2504	0.8846	0.1810	0.1493
April	0.1459	0.5021	-1.5434	2.6693	0.1641
May	0.2297	0.3046	0.4587	0.0820	1.0560
June	0.0785	0.3494	-0.0991	-.9212	0.0776
July	0.0749	0.2812	-0.4326	-.4896	0.1309
August	0.0130	0.3306	0.2365	-0.6195	0.1283
September	-0.0346	0.3507	-0.1122	-0.7098	0.0869
October	0.1153	0.3430	0.3103	-1.1856	0.1404
November	-0.0222	0.3331	0.2353	-0.2491	0.0894
December	0.2785	0.3004	0.8602	0.2789	0.1686
Composite	0.1283	0.3421	0.4955	-.8614	0.1679

It is clear from table 3 that the reward to risk ratio varies over the year. The highest reward to risk occurs in December. The reward to risk ratios of January and the "composite" month are not particularly high when compared to those of December or May. As a result, it is difficult to conclude that a new year effect exists (western or Chinese).

TABLE 4: T-TESTS FOR DIFFERENCES IN THE REWARD TO RISK RATIO.

Ho: There is no difference between the reward to risk ratio of January and the "composite" month and the other months of the year. All statistics shown are p-levels.

	January	"Composite"
January		0.6072
February	0.6708	0.9529
March	0.1998	0.4958
April	0.7749	0.9058
May	0.7000	0.3682
June	0.3523	0.6772
July	0.2871	0.6224
August	0.1299	0.3250
September	0.0642	0.1799
October	0.5318	0.9124
November	0.1021	0.2681
December	0.4039	0.1833

The results indicate that there does not appear to be a Chinese new year effect or a western new year effect in the reward to risk ratio. The reward to risk ratio is not statistically significantly different from any other month.

DISCUSSION AND CONCLUSION

This paper has investigated the presence of a Chinese new year effect in the Malaysian market. The notion was postulated by Yong (1993) to explain a January seasonal that he had found. Using a later period (although overlapping) and the total index, we are unable to find evidence in favour of either the January effect or a Chinese new year effect. This result is intuitively pleasing as on theoretical grounds such an empirical anomaly cannot be explained. In addition, it can be argued that the empirical regularity that is observed in "western" markets is not a function of "animal

spirits". This, of course, raises the more important question as to what is the cause of the empirical regularity.

Given that this paper has only considered the returns of a value weighted index, future research into smaller stocks is warranted. At this time, however, the PACAP small firm index only extends for the period 1991 – 1993. In future years it should be possible to further investigate the linkage between turn of the year effects and small firms in the Malaysian context.

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