BLACK SWANS IN THE GCC STOCK MARKETS

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Abstract

This paper investigates if the long term performance of investors depends on a few outliers (black swans) of the best and worst trading days. Our evidence from six Gulf Cooperation Countries (GCC) shows that missing the best 10 days reduces returns by 45%. Can GCC investors successfully time the market? Based on our findings, we recommend that GCC investors remain invested in the stock market at all times. Buying and holding stocks wins out at the end.

Keywords: Black swans, GCC, Emerging markets, Outliers, Market timing

Introduction

Market timing as an investment strategy can be very rewarding when successfully implemented, especially given the evidence on extreme stock returns and their violation of the normality assumption (e.g. Estrada, 2008; 2009b; Mandelbrot, 1963). These extreme returns would indicate that the long-term performance of investors would be impacted significantly by those single-day outlier returns. Hence, in this paper we embark to understand how performance is achieved in the stock markets of the Gulf Cooperation Council (GCC). Is performance achieved through steady returns over time or is it driven more by extreme returns? Is it possible for investors in the GCC markets to correctly time the market and should they do it?

Market timing is not without its challenges and risks. Sharpe (1975) shows that in order to beat the benchmark, market timers should be accurate 74% of the time. Seyhun (1994) documents that 95% of market gains during the period 1963 to 1993 were generated by just 90 days of trading. Recently, Hebner (2013) provides evidence that missing the five best days during the period 1993 to 2012 would lead investors to earn 42% less than others who stayed in the market during the whole period. This would indicate that the slightest errors in a market timing strategy could result in significant loss of abnormal positive returns.

By examining extreme stock market returns and the feasibility of market timing, our work would be in line with that of Estrada (2008, 2009a, 2009b) in the sense that we try to understand how extreme stock market fluctuations affect the long-term performance of investors and their ability to make use of these extreme fluctuations. We set our analysis in the seven markets of the GCC due to various reasons. First of all, GCC markets have been characterized by many as weakly inefficient (Abdmoulah 2010, and Al- Ajmi and Kim 2012). Second, GCC markets suffer from noteworthy thin and infrequent trading (Bley 2011, and Elango and Hussein, 2008). This infrequent trading would foster extreme stock returns. However, the inefficiency of the GCC markets could assist investors in capturing these extreme fluctuations and properly timing the market. Moreover, GCC markets do not allow short selling and therefore there is not a complete set of mechanisms at the disposal of investors to bring prices back to their intrinsic value. This results in greater occurrences of extreme market fluctuations and shapes returns' distribution differently from that observed in other short-allowing markets (Boehmer and Wu, 2013 and Saffi and Sigurdsson, 2011).

Using daily stock data from 2005 to 2015 from seven markets across the six GCC countries, we find evidence of numerous days with extreme stock returns.   Avoiding the worst days of trading would enhance the returns of investors by a noteworthy margin. To put this into perspective: avoiding the worst 5, 10, and 50 days increases terminal wealth by 46%, 101%, and 1151%, respectively, on average across the seven markets. While on the other side of the spectrum, missing the best 5, 10, and 50 days reduces terminal wealth, on average across the GCC markets, by about 29%, 45%, and 83%, respectively. Since 10 days account for only 0.25% of our sample, it seems highly unlikely that a market timing strategy could be accurate to such an extent. This would lead us to believe that market timing would be an unsuccessful strategy to follow in the GCC markets.

Data

The data for this study consists of daily market returns for Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, Dubai, and Abu Dhabi from January 2005 to March 2015 totaling 3719 days, except for Qatar's which starts at January 2007. The data was obtained from Bloomberg.

Table 1 shows the descriptive statistics of the daily returns. Amongst the markets, Dubai had the largest daily swings with a maximum of 12.98% and a minimum of -11.45%. Also, Dubai had the highest daily returns standard deviation, 1.9%, followed by Saudi Arabia, 1.4%. While on the other end of the spectrum, Bahrain observed the least amount of daily return swings and the least daily return standard deviation. We can see that the skewness values indicate a non-normal distribution for the daily stock returns as evidenced by their departure from the value of zero. Moreover, all markets except those of the UAE (Abu Dhabi and Dubai) showed negative skewness. The kurtosis values provide additional evidence on the departure from the normality assumption as they are much higher than 3, the value for a normal distribution. Given a sample of 3,719 days for most of the markets, 5, 10 and 50 days represent 0.13%, 0.27% and 1.34%, respectively, of the total sample..

Results

We define outliers as returns that are more than 3 standard deviations away from the average daily return. This would translate into a probability of occurrence of 0.3% under a normal distribution. The value of these outliers by market is shown in Table 2 which also reports the number of expected and observed outliers. To interpret this table, let us take Kuwait as an example. Three standard deviations below the mean corresponds to a daily return of -2.06%. This value, or lower, has occurred 58 times while under a normal distribution it should have occurred only 5 times. Three standard deviations above the mean is 2.06%. There were 21 instances of such a return or higher while it was only expected that such a return or higher would occur 5 times under a normal distribution.

We can clearly see from Table 2 that the number of observed outliers is much more than the number of expected outliers across all markets and not just Kuwait. The average ratio of the number of observed outliers relative to the number of expected outliers for both tails and across all markets was 8.5 times which is in line with the earlier evidence provided by the kurtosis These figures are much higher than those reported by Estrada (2009a) for other emerging markets indicating a higher level of fat tail risk for the GCC markets. Investors in the GCC who assume that stock returns are normally distributed will significantly underestimate the risks of extreme returns.

Panel A in Table 3 reports for each market, as well as the overall averages, its daily average return and the best and worst daily returns for 5, 10, and 50 days. In Panel B, we show the number of standard deviations away from the mean return these best and worst returns are. From Table 3, we find that the average return of the best 5 days, 7.38%, in GCC markets was more than 400 times the average return on the daily returns during the whole sample period, 0.017%. Moreover, these best and worst returns were occurring at an average of 7 standard deviations from the mean. This adds further to the evidence from Table 2 on the extremeness of stock returns in the GCC markets.

Table 4 translates the issue of the best and worst market days into an investor's terminal wealth. Panel A of Table 4 shows the terminal wealth for a passive investor who invested one hundred units of currency at the beginning of the sample period and held to the end. It also shows the value of his terminal wealth had he avoided the best and worst 5, 10, and 50 days. Panel B shows the impact of having missed (avoided) the best (worst) 5, 10, and 50 days. We note in Table 4 Panel B that, on average across all markets, avoiding the worst 5, 10, and 50 days increases terminal wealth by 46%, 101%, and 1151%, respectively. On the other side of the return distribution, we show that not being in the market during the best 5, 10, and 50 trading days cause investors to lose 29%, 45% and 83% of the value when compared to a long term investor who stayed during the whole period. In Panel C, we compute the average annual return across all markets, as well for each market separately, how much an investor would have achieved had he invested passively and the average annual return had he missed the best and worst 5, 10, and 50 days. We can see from Panel C that missing the best 5 days would result in an average annual compounded return that is almost zero and which corresponds to only 15% of the average annual return of a passive investor.

It is hence very clear that very few days cause a huge impact on the value of investors' portfolios. The frequency of those five best days in the sample is 0.13%. Given the rarity of its occurrence, it would be very hard for a market timing strategy to be consistent in being fully invested during the best days and avoiding worst days. Hence,

the results indicate that investors hoping to time the market are in significant risk of missing on the days with the highest returns which compromise the majority of return over time for markets in the GCC region.

Conclusion

This study evaluates the frequency and impact of extreme returns (i.e. outliers; black swans). We find evidence that goes against the notion and expectation of normality in daily stock returns. First, we document that the frequency of extreme returns is much higher than that expected by a normal distribution, indicating the existence of fat tails. Moreover, we find that an investor's return over the long-run is significantly driven by the returns in those days where the extreme returns occur.

Our evidence is compiled by examining the daily stock returns of the seven GCC markets over the period of January 2005 to March 2015. The empirical evidence shows that the returns generated from a buy-and-hold portfolio exceed those of other portfolios that missed, for example, the best 10 trading days by 45%. This finding is consistent across all markets and when missing the best 5 and 50 days. To put this into further perspective, an investor who passively invested $10,000 in the beginning of the sample period in the Dubai market would have ended with a terminal wealth that is almost 68% higher than that for an investor who missed the best 5 days of the Dubai market.

These findings contribute to the literature by documenting additional evidence on the non-normality of returns and, of no less importance that long-term performance is not slowly accumulated but is significantly driven by a handful of days in the market. The results show that return distributions in markets likely to be weakly inefficient that ban short-selling are similar to those in more developed and efficient markets.

The findings also carry value for investors and practitioners. They show that market timing, just like the holy grail, can be very rewarding if found however the chances of finding it are almost zero. Therefore, the evidence presented in this paper should push practitioners away from market timing strategies and toward those of passive investing. This should be of great interest to the financial industry in the GCC given the almost non-existent passive investment vehicles. The evidence should entice them to start offering passive investment products that would most likely serve them and their investors' interests better in the long-run.

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