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Halal Stock Designation And Impact On Price and Trading Volume

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Abstract

This paper examines the impact of the Malaysian Syariah Advisory Council's (SAC) decision on stock eligibility. Specifically, we address four questions related to returns and trading volume of stocks in relation to the SAC's decision to add or delete a stock to their list of halal stocks. Overall, our findings suggest that inclusions experience a positive impact while deletions negative. Our sample of 39 inclusions showed positive MCAR and increased trading volume. The price impact however was delayed with significant positive MCARs in the 30 and 60 day window periods following announcement. The impact on trading volume appears immediate but short lived. Our Sample of 21 stocks deleted from SAC list experienced negative MCAR and reduced trading volume. These were however statistically significant only in the 60 day window post announcement.

INTRODUCTION

The impact on a stock, of an addition to or deletion from a Stock Index has been of long interest to financial economists. The focus has been on two variables, changes in the stock's returns and trading volume. While there appears to be evidence of an impact on both these variables, much of the debate has been on whether the impact is temporary or permanent and on the reasons for the impact. Alternative hypotheses/arguments have been put forth to explain the impact. Most such studies have been on developed country markets with the early pathbreaking studies; Harris and Gurel (1986) and Schleifer (1986) being US based studies on indices such as the S & P 500.

Companies normally take the inclusion of their stock into an index, especially a popular and heavily tracked one, as a positive occurrence. At the very least, such an inclusion places their stock on the radar screen of analysts, investors and in particular, index fund managers. With a wider constituency of potential investors, trading volume improves, increasing the liquidity of their stocks and consequently reduced liquidity risk to their shareholders and possibly lower volatility. Furthermore, since inclusion is akin to an endorsement of the stock as an investment component, the required risk premium should reduce. The implication of a reduced risk premium would be an enhanced stock price.

The inclusion / deletion issue therefore is an important one for constituent stocks. This paper examines a similar issue but from a very different angle. We examine the impact of an addition to or deletion from the Malaysian Securities Commission's index of *Halal* designated stocks. The determination of whether a stock is eligible for inclusion to the

list or deletion, is determined by the Securities Commission's Syariah Advisory Council (SAC). The criteria used by the SAC is outlined in the next section.

Though the SAC's Islamic list is not an index in the sense of a conventional stock index it is a tradeable list and should have an impact similar to that of index additions/deletion. If anything, given the compulsory nature from a religious viewpoint, the impact should be even more prominent. This is because unlike additions / deletions to conventional indexes that may or may not lead to portfolio rebalancing, an exclusion from the SAC list automatically makes a stock ineligible for investment by Islamic funds. While an inclusion into the list may or may not attract new funds,¹ a deletion will require portfolio rebalancing by Islamic funds. In a sense therefore, the SAC decision being more binding from a religious viewpoint is likely to have a larger impact than the addition / deletion decision of a conventional stock index. The extent of the impact will be directly dependent on the aggregate size of Islamic funds relative to total market capitalisation.

We examine this issue by way of addressing the following research questions;

- i) Does the inclusion of a stock into the SAC Shariah list have any impact on stock returns?
- ii) Is there any impact on trading volume? Is average trading volume any higher?
- iii) Does the deletion of a stock from the SAC Shariah list impact its returns/price?
- iv) Does deletion have an impact on trading volume? Is the average volume any lower?

¹ The amount of new funds attracted to investing in the newly included stock will depend on the universe of available halal stocks and the available substitutes to the stock.

Aside from the need to understand these issues, the fact that there is no previous work in this area is what motivates this paper. The paper is divided into six sections. Section 2 below provides an overview of the SAC's decision criteria, and related issues. Section 3 is a review of relevant literature. Section 4 outlines our data and methodology while Section 5 presents our results. The final section, Section 6, concludes.

Section 2 : The Securities Commission & Syariah Advisory Council (SAC)

The Securities Commission (SC) was set up on 1 March 1993. The SC is a statutory body reporting to the Minister of Finance, it was established under the Securities Commission Act 1993. As the sole regulatory agency for the regulation and development of capital markets, it's objective is to promote and maintain a fair, efficient, and transparent securities and futures markets and to facilitate the orderly development of an innovative and competitive capital market.

The Syariah Advisory Council (SAC) was formally established on 16 May 1996. The SAC was formed to advise the SC on matters relating to the Islamic capital market and among its noteworthy initiatives were efforts to analyse and scrutinise products and issues such as call warrants, transferable subscription rights (TSR), asset securitisation, and bai'al-dayn.

Specifically, the principal functions of the SAC would include the following:

- i) to advise the SC on the aims and operations of the Islamic capital market in order to ensure that they are consistent with Islamic principles;

- ii) to provide an opportunity, and to expose jurists, scholars, intermediaries and investors, to Islamic financial products and Islamic jurisprudence;
- iii) to ensure that activities in the securities and derivatives markets which are represented as Islamic would conform with syariah principles; and
- iv) to study matters related to Islamic capital market operations in response to requests for advice from industry, investors and the Government.

2.1.0 : Stock Classification And Decision Criteria

In classifying stocks as approved securities, the SAC has applied a standard criteria, that is, focusing on the core activities of the companies listed on the Kuala Lumpur Stock Exchange (KLSE) and the Malaysia Exchange of Securities Dealing & Automated Quotation (MESDAQ). Hence, companies whose activities are not contrary to the Syariah principles will be classified as approved securities.

Securities will be excluded from the list of approved securities based on the following criteria:

- (i) operations based on *riba* (interest) such as activities of financial institutions like commercial and merchant banks, finance companies etc;
- (ii) operations involving gambling;
- (iii) activities involving the manufacture and/or sale of *haram* (forbidden) products such as liquor, pork and meat not slaughtered according to Islam; and
- (iv) operations containing an element of *gharar* (uncertainty) such as the conventional insurance business.

As for companies whose activities comprise both permissible and non-permissible elements, the Syariah Advisory Council (SAC) applies several additional criteria, this being:

- (v) the core activities of the company must be of activities which are not against the *syariah* as outlined in the four criteria above. Furthermore the *haram* element must be very small compared to the core activities;
- (vi) the public perception or the image of the company must be good; and
- (vii) the core activities of the company have importance and *maslahah* (benefit in general) to the Muslim *Ummah* (nation) and the country, and the *haram* element is very small and involves matters such as '*umum balwa* (common plight), '*uruf* (custom) and the rights of the non-Muslim community which are accepted by Islam.

Approved securities include ordinary shares, warrants and transferable subscription rights (TSR). This means that warrants and TSRs are classified as approved securities from the Syariah perspective provided the underlying shares are also approved. On the other hand, loan stocks and bonds are non-approved securities unless their issuance is based on Islamic principles.

In classifying whether the securities are permissible or non permissible, the SAC goes through two phases of analysis that is Phase One: Quantitative Method and Phase Two: Qualitative Method. To analyse the securities SAC receives input and support from the SC. The SC gathers information about companies from various sources such as company annual financial reports, responses to a survey form which is issued to obtain detailed information and through inquiries made to the respective company's management.

Phase One: Quantitative Method

Phase One, is the calculation of percentage contribution of non permissible activities to company's income and profit before tax. There are three classifications of companies, that is, 100% permissible, 100% non permissible and mixed companies. Example of mixed companies, 97% permissible and 3% non permissible.

There are four steps involved in the analysis of mixed companies:

- Step 1:* Get the earnings and the profit before tax of the whole company;
- Step 2:* Get the earnings of non permissible activities and profit before tax of non permissible activities;
- Step 3:* Divide and get the percentage of earnings of non permissible activities against the earnings of the whole company and also the percentage of profit before tax of non permissible against the profit before tax of the company;
- Step 4:* Compare the percentage of non permissible activities in earnings with the profit using the level mark (see below).

This level mark is used by the Syariah Advisory Council to determine whether the mixed company will be considered a permissible security or non-permissible security.

There are two level mark categories:

- 1) The level mark for non permissible activities is 5%.
If the contribution (the earnings or profit) of non permissible activities are more than 5% of the earnings or profit before tax of the whole company, then the company will be excluded from the approved SAC List;
- 2) The level mark for image (example hotel and resorts) is 25%.
If the contribution (the earnings or profit) of non permissible hotel's or resort's activities are more than 25% of the earnings or profit before tax of the whole company, then the company will be excluded.

Phase Two: Qualitative Method

Phase Two is the public perception or the image of the company, whether the core activities of the company have importance and *maslahah* (benefit in general) to the Muslim *Ummah* (nation) and the country, and whether the *haram* element is small enough and involves matters such as *'umum balwa* (common plight), *'uruf* (custom) and the rights of the non-Muslim community which is accepted by Islam. The analysis is done on a case by case basis.

The study of companies is done by taking into consideration the above, quantitative and qualitative methods. Each company is reviewed based on its last financial report. On completion of these evaluation, a list of approved securities by the Syariah Advisory Council will be released. The list is updated usually on a interval 4 month.

Section 3 : Literature Review

While it is well documented that an inclusion of a stock into an index generally results in a statistically significant increase in both price and volume, the cause of these effects have been debated. There appears to be three hypotheses that have been put forth to explain the cause of these effects. By way of importance, these are i) The Price-Pressure hypothesis ii) Liquidity hypothesis and iii) Information hypothesis. The *price-pressure hypothesis* argues that an inclusion/deletion decision would be followed by portfolio rebalancing on the part of index funds, thereby leading to upward price pressure for inclusions and downward pressures for deletions. Going by the rebalancing argument, the implication is that the price and volume changes would likely be temporary, since institutional buying and selling pressures should abate following rebalancing. The

liquidity hypothesis argues that following an inclusion, the stock comes under closer scrutiny of institutional investors and analysts leading to increased public information on the stock. The stock becomes more liquid, has lower bid-ask spreads and lower required returns following reduced risk-premium. The result being an increase in price reflecting the reduced risk premium. The *information hypothesis* argues that the inclusion of a stock into the index “certifies the quality of the company and thus entails a price increase”.² Shleifer (1986) argues that the price increase upon S&P 500 addition is permanent and driven by increased demand in the presence of downward sloping demand curves. He finds that, since September 1976, stocks newly included into the Standard and Poor's 500 Index have earned a significant positive abnormal return at the announcement of the inclusion. This return does not disappear for at least ten days after the inclusion. The returns are positively related to measures of buying by index funds, consistent with the hypothesis that the demand curve for stocks is downward sloping.

In contrast, Harris and Gurel (1986) find a permanent increase in volume but only a temporary increase in price, this they argue derives from temporary price pressure by index funds. The study was done on all changes in the S & P 500 list for the period 1973 - 1983. The results show that immediately after an addition is announced, price increases by more than 3 percent. This increase however, is nearly fully reversed after 2 weeks.

Upinder Dhillon and Herb Johnson (1991), find a permanent increase in both price and volume which they attribute to informational efficiencies, such efficiencies, they argue, may have been enhanced by the introduction of S & P 500 Index futures and options

² See – Andrei Schleifer (1986)

contracts in 1983. They studied the changes in the S & P 500 index over the period 1978 to 1988.

More recently, Gayle and Miller (1998), examined changes in stock liquidity, as measured by the bid/ask price, when a stock is added to the S&P 500 Index. The study presents evidence of a significant decrease in the bid/ask spread upon S&P 500 addition. However, this effect is limited to only those stocks that were not trading listed options. Further, the decrease in the bid/ask spread for nonoptioned stocks is accompanied by a significant and permanent increase in share price and trading volume. Optioned stocks experienced a permanent increase in trading volume.

Beneish and Gardner (1995) examine the DJIA listing. Unlike the S & P 500 studies, they find no evidence of impact on price nor trading volume for inclusions to the DJIA. They attribute this to a lack of portfolio rebalancing since most US index funds track the broader based S & P 500. They do however find that stocks removed from the index experience significant price declines.

While the studies of Schleifer (1986) and Harris and Gurel (1986) present evidence in support of the price-pressure hypothesis, Gayle & Miller (1998) show evidence supporting the liquidity hypothesis. Finally, the fact that Beneish and Gardner (1995) find significant price declines for firms removed from the DJIA implies support for the information hypothesis.

Section 4 : Data and Methodology

In addressing our four research questions on the impact on returns and volume of an addition/deletion to the SAC list, we use the standard event study methodology. As the announcement date is the event date, we begin with identifying announcement dates. Over our three year sample period 1997 to end 1999, the SAC had made 7 public announcements over an approximate 4 month intervals. The dates and number of approved securities is shown in table 1 below;

TABLE 1

Date and Number of Approved Shares by the Syariah Advisory Council (SAC)

| Announcement Date | No. of Approved Shares | Total of Shares in Stock Mkt | Percentage of approved securities to total Mkt (%) |
|--------------------------|-------------------------------|-------------------------------------|---|
| 18 June 1997 | 371 | 651 | 57 |
| 23 December 1997 | 476 | 680 | 70 |
| 4 May 1998 | 531 | 728 | 73 |
| 9 September 1998 | 542 | 730 | 74 |
| 4 January 1999 | 543 | 736 | 74 |
| 12 May 1999 | 541 | 739 | 73 |
| 22 September 1999 | 545 | 746 | 73 |

Source: Updated lists of approved Securities by the Securities Commission's Syariah Advisory Council

The June 18, 1997 announcement was the first classification by the SAC following its establishment in May 1996. A total of 371 securities were approved, this was followed by the December 1997 announcement adding a further 106 stocks. Following these two

large inclusions, subsequent updates have much smaller net inclusions.³ Ignoring the first two announcements, which we consider to be really a building up of the halal list, we concentrate on the subsequent 5 announcements. The breakdown of inclusions and deletions for each of the five announcements is shown in Table 2, below:

TABLE 2

SAC Announcement Dates And Breakdown of Additions/Deletions

| Announcement Date | Listed Board | Stocks Added | Stocks Deleted |
|--------------------------|---------------------|---------------------|-----------------------|
| 4, May 1998 | Main Board | 13 | 4 |
| | Second Board | 47 | 2 |
| 9, Sept 1998 | Main Board | 5 | 2 |
| | Second Board | 9 | 0 |
| 4, Jan 1999 | Main Board | 1 | 2 |
| | Second Board | 5 | 3 |
| 12, May 1999 | Main Board | 2 | 5 |
| | Second Board | 2 | 1 |
| 22, Sept 1999 | Main Board | 8 | 9 |
| | Second Board | 5 | 0 |
| Total | Main Board | 29 | 22 |
| | Second Board | 68 | 6 |

Over the 5 announcements, a total of 97 stocks were included, (68 Second Board, 29 Main Board) and 28 deleted. Of these, owing to the lack of data and other inadequacies particularly with the second board stocks, we examine a total of 39 stocks that were added and 21 stocks that were deleted from the SAC list. Our list of the 60 sample stocks is shown in Table A1, in Appendix.

³ In fact there was a small net reduction in approved stocks between the January and May 1999 announcements.

4.1 : Impact on Returns

In examining the impact on returns of an addition or deletion we examine daily prices for a ± 120 day period around announcement day⁴. The expected return for each stock:

\hat{R}_{it} is determined by regressing the daily returns over the 240 days as;

$$\hat{R}_{it} = \alpha_i + \beta_i \times R_{mt} \quad \dots\dots\dots (1)$$

Where ;

\hat{R}_i = expected returns of stock i on day t .

R_{mt} = returns on the market (KLCI) on day t .⁵

The percentage Daily actual returns for each stock is completed as;

$$R_{it} = \ln\left(\frac{P_t}{P_{t-1}}\right) \times 100 \quad \dots\dots\dots (2)$$

Using (1) and (2) ; the daily abnormal return AR_{it} is determined as;

$$AR_{it} = R_{it} - \hat{R}_{it} \quad \dots\dots\dots (3)$$

Next the Cumulative Abnormal Returns (CAR) for a specific window period is determined as;

$$CAR_{i,T} = \sum_{T=1}^T AR_{iT} \quad \dots\dots\dots (4)$$

⁴ The total 240 days would represent approximately on e calendar year of trading days ; i.e aroximately 6 months before and after announcement.

⁵ Rmt is computed as % Δ in daily returns.

Finally, we aggregate across all our 39 sample additions and separately for the 21 deletions to arrive at the Mean Cumulative Abnormal Returns (MCAR) as:

$$MCAR_T = \sum_{T=1}^N CAR_{it} / N \quad \dots\dots\dots (5)$$

Where, MCAR_T is the Mean Cumulative Abnormal Returns for a selected window period T.

To test for statistical significance, we use two tests, the parametric Z-test, and a non parametric Wilcoxon Signed Ranks Matched Pairs test. Using the Z test, we test the hypothesis that MCAR_T = 0 for a specific window period following announcement. The window periods being +60 days, +30 days and +10 days. In using the Wilcoxon test, we test the hypothesis that MCAR_T for a specific window period before and after the announcement date are the same. Here the window periods are ± 60 days, ± 30 days and ± 10 days.

4.2 : Impact on Trading Volume

In determining the impact of the SAC's decision on a stock's trading volume we examine the mean aggregated daily trading volume. This is done first across all our sample of additions and then separately for deletions. Mean daily trading volume aggregated for sample additions and deletions for a specific window period τ, is computed as;

$$MDVA_T = \left(\sum_{i=1}^N V_{it} \right) / N \quad \dots\dots\dots (6)$$

Where; V_{it} = trading volume for stock i on day t .

N = total number of stocks. (39 for additions and 21 for deletions)

Again the parametric Z test and non-parametric Wilcoxon test is used. We test the hypothesis that mean volume in the window period before and after is equal.

Section 5 : Results & Analysis

5.1 Impact on Returns ; Additions

Tables A2 and A3 in appendix show the results of our parametric and non parametric tests. Table A2 shows the Z test results for the three post announcement windows. The MCAR and Z values for the corresponding pre-announcement window periods are also shown for comparison. Recall that our Z test was to test the hypothesis that MCAR for the specified window period = 0. Of the three post announcement windows, the 10 day period immediately following announcement of inclusion shows no different MCAR. However, both the +30 day and +60 day windows show significantly higher MCAR at both the 5% and 10% levels. Comparison of the MCAR for both the +60 and +30 day windows with the corresponding pre announcement period shows substantially higher MCAR post announcement .These results imply that while an inclusion into the SAC list of halal stocks has a positive impact on stock prices, the price increase is not immediate. This is clearly borne out in Fig.1 which shows the plot of daily MCAR for the ± 120 day period. The positive price reaction really begins from about day +20 and shows a consistent increase until approximately day +80. Thus, it is no surprise that our test of the +10 day window shows no change in MCAR but the +30 and +60 day windows do.

Results of the Wilcoxon Signed Ranks Test comparing MCAR before and after announcement for a window period confirms these results. The MCAR in the post announcement window is significantly higher for both the ± 60 and ± 30 day windows. As in the earlier test the ± 10 day window shows no statistical difference.

5.2: Impact on Returns: Deletions

Tables A4 & A5 show our test results for stocks that were deleted from the SAC halal list. Based on both the Z, and Wilcoxon test results, it appears that while there is indeed a negative impact, the price reduction is not immediate. The MCAR for all three post announcement window periods is negative, implying a decline in prices following announcement, however, only the +60 window is significantly so. Both the +10 and +30 windows though negative, are not significant at either the 5% or 10% level. Fig. 3 shows the daily plot of MCAR for deletions for the ± 120 day period. No visible trend is evident for the first 30 day period following announcement, though much volatility is evident. It is in the period approximately after day +40 that we do see a declining trend which bottoms out around day +80. Based on this plot of daily MCAR, our test results of no significance for the +10 and +30 day periods is consistent.

5.3: Impact on Volume: (Additions)

The results of our test of the impact on trading volume of stocks added to the SAC list is produced in Tables A6 and A7 in appendix. Table A6 shows the result of our Z test of the hypothesis that there is no change in trading volume for a given pre and post

announcement period window. Two features are noticeable. First, the aggregated mean daily trading volume (MDVA) is higher for all three post announcement windows +60, +30 and +10 relative to its respective pre-announcement window. This clearly implies a positive impact, higher mean daily volumes. However, only the +10 day window is significantly so. The non parametric Wilcoxon test shows similar results. Both the ± 60 days and ± 30 day windows have rankings more or less split evenly and are insignificant. However, for the ± 10 day window, 9 of the 10 days pre announcement had lower MDVA relative to its post announcement match.

5.4: Impact on Volume : (Deletions)

Appendix Tables A8 and A9 show the results of our test of volume impact for deletions. Based on Table A8 of the Z test, it appears that deletions do result in reduced mean daily volumes. Notice that the MDVA for each of the post announcement window, +60, +30, +10 are all lower relative to its respective pre announcement window. Deletions from the SAC list do appear to have a negative impact on volume. However, only the +60 day window has statistical significance. This implies that while there is a negative impact on volume, the impact is delayed and not immediate. The Wilcoxon test results shown in Table A9 are consistent with this. Except for the ± 60 day window which is significant at both the 5% and 10% levels, the other two window periods show no statistical difference in volume pre and post announcement.

5.5 : Analysis of Results

Overall, based on the above results, our findings appear to be largely consistent with what one would expect. Inclusions appear to have a positive impact while deletions

negative . For our sample of 39 inclusions, we find a positive impact on both stock prices (MCAR) and volume as measured by MDVA. However, whereas the price impact is gradual, with significant increases post 30 and 60 days, the volume effect appears to be immediate though temporary. Trading volume is significantly higher only in the +10 day window.

Deletions on the other hand had a negative impact on both stock returns/prices and trading volume. However, whereas the timing was mixed in the case of inclusions, with prices reacting later but volume immediately, in the case of deletions, we see a delayed impact in both prices and trading volume. Our sample of 21 deletions had significantly lower volumes and negative MCAR only in the 60 day window. The shorter term windows has means that were consistent ⁶ but not statistically significant.

That inclusions result in positive MCARs whereas exclusions in negative ones is to be expected. Inclusion into the SAC list is “official” endorsement that the stock is indeed halal. Such an endorsement automatically expands the range of potential investors for the stock. All Islamic mutual funds, Treasury departments of Islamic Institutions and individual Muslim investors now become potential investors of the stock as a result of its qualification as a halal stock. Deletions on the other hand should have the opposite effect. All Islamic investment money would avoid the stock and existing Muslim holders, sell the stock. Given reduced demand, the impact on price is negative.

⁶ Lower trading volume and negative MCAR

While this is consistent, the price impact to both inclusions and deletions is delayed; i.e price adjustment is not immediate. At first glance, this may appear to be a surprising result; particularly in the context of deletions. A stock deemed non-halal would be expected to be immediately sold. We believe the delayed impact on prices for both inclusions and deletions has to do with gradual portfolio rebalancing. In the case of newly included stocks, portfolio rebalancing need not be immediate if there already exists a sufficiently large universe of eligible investable stocks. This is indeed the case in Malaysia. Even our earliest event date, May 1998⁷ had 476 available halal stocks, approximately 70 % of all Malaysian stocks. Given that fund managers could be sufficiently well diversified with the existing stocks there is no need for quick inclusion of additional stocks.

That stocks deemed non-halal and deleted are not subject to immediate price pressure may appear surprising. However, in the light of the SAC's ruling on the matter, gradual portfolio rebalancing is logical. The SAC advises that Islamic funds and investors can continue holding a deleted stock until they can recover at least its original cost or breakeven on the investment. In other words, immediate sale of a deleted stock is not necessary.

⁷ see; Table 1

Section 6 : Conclusion

This paper examined the impact of the Malaysian Syariah Advisory Council's (SAC) decision on stock eligibility. Specifically, we addressed four questions related to returns and trading volume of stocks in relation to the SAC's decision to add or delete a stock to their list of halal stocks. Overall, our findings suggest that inclusions experience a positive impact while deletions negative. Our sample of 39 inclusions experienced positive MCAR and increased trading volume. The price impact however was delayed with significant positive MCARs in the 30 and 60 day periods following announcement. The impact on trading volume appears immediate but short lived. Stocks deleted from SAC the list, experienced negative MCAR and reduced trading volume. These were however statistically significant only in the 60 day window post announcement.

In terms of previous research, our findings appear most consistent with the *Information hypothesis*. Though in conventional terms, the *Information hypothesis* argues that inclusion into a index “*certifies the quality of the company and thus entails a price increase*”, in our context inclusion implies certification as halal. Thus, a even more powerful endorsement. Even though the price impact implies portfolio rebalancing by Islamic funds, the *Price Pressure Hypothesis* predicts a more immediate and temporary price reaction than what our results show.

In addition to the three commonly cited hypotheses; *Price-Pressure*, *Liquidity* and *Information hypotheses*, Schleifer (1986) proposes another possible explanation; *Market Segmentation*. This argues that certain types of investors are only interested in stocks included in an index such as the S & P 500. As such , inclusion would attract these

investors and result in price and volume increases. Though the Market Segmentation argument has not had much attention in the conventional index research, we believe it makes a strong case where Islamic investing and halal stocks are concerned. By definition, Islamic funds and strictly islamic individual investors would only be interested in stocks included in the halal list. This would imply positive price and volume reaction to inclusion and a negative price/volume reaction to a deletion. An implication broadly consistent with our findings.

Islamic funds in Malaysia, despite very impressive recent growth remain a small niche. Relative to overall market capitalisation the total Net Asset Value of the 13 available Islamic funds is less than 5 %. This of course ignores individual Muslim investors who may be reliant on the SAC list for their investment decisions. The possibility of non-muslim investors using the halal list to identify “*ethical stocks*” cannot be excluded. Thus further research over a longer time span should be useful.

One final implication of our findings from a stock issuing company viewpoint is that, it may be worthwhile for a company to get its stock on the SAC list, and ensure it remains there.

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TABLE A2

**Price Effect For All Additions (39 Stocks)
(Parametric Z test)**

| Window Period | MCAR | Z Value | Significant (sig/Insignificant (insig)) | | Remarks |
|---------------|---------|---------|---|--------|--|
| | | | At 5% | At 10% | |
| - 60 days | 2.5183 | 0.7557 | Insig | Insig | No abnormal return |
| + 60 days | 14.5861 | 10.7986 | Sig | Sig | Price increase, higher MCAR post announce. |
| - 30 days | -0.2820 | -0.1128 | Insig | Insig | No abnormal return |
| + 30 days | 7.3606 | 10.9704 | Sig | Sig | Price increase, higher MCAR post announce. |
| - 10 days | 0.0832 | 0.0680 | Insig | Insig | No abnormal return |
| + 10 days | -0.7470 | -0.4974 | Insig | Insig | No abnormal return |

Table A3

**Price Effect For All Additions
(Non Para; Wilcoxon Z-Test)**

| Window Period | Wilcoxon Z- Value | Asymp. Sig. (Prob) | Remarks |
|---------------|-------------------|--------------------|-------------------------------|
| ± 60 days | -5.941 | .000** | MCAR higher post announcement |
| ± 30 days | -4.288 | .000** | MCAR higher post announcement |
| ± 10 days | -.357 | .721 | No dif. in MCAR |

** Sig. at both 5% and 10%

TABLE A4

**Price Effect For All Deletions (21 Stocks)
(Parametric Z test)**

| Window Period | MCAR | Z | Significant (sig/Insignificant (insig)) | | Remarks |
|---------------|---------|---------|---|--------|--|
| | | | At 5% | At 10% | |
| - 60 days | 2.3008 | 2.6977 | Sig | Sig | Price increase, positive returns |
| + 60 days | -1.6309 | -2.8901 | Sig | Sig | Price decrease negative MCAR post announce |
| - 30 days | 0.9269 | 0.7331 | Insig | Insig | No abnormal return |
| + 30 days | -0.6794 | -1.6231 | Insig | Insig | No abnormal return |
| - 10 days | 0.6010 | 0.4406 | Insig | Insig | No abnormal return |
| + 10 days | -0.2427 | -0.6397 | Insig | Insig | No abnormal return |

**Table A5
Price Effect For All Deletions
(Non Para; Wilcoxon Z-Test)**

| Window Period | Wilcoxon Z- Value | Asymp. Sig. (Prob) | Remarks |
|---------------|-------------------|--------------------|------------------------------|
| ± 60 days | -3.180 | .001** | MCAR lower post announcement |
| ± 30 days | -1.224 | .221 | No. dif. in MCAR |
| ± 10 days | -.866 | .386 | No dif. in MCAR |

** Sig. at both 5% and 10%

Table A6
Volume Effect For All Inclusions (39 stocks)
(Parametric Z – test)

| Window Period | Mean Daily Agg. Volume | Z | Significant (sig)/Insignificant (insig) | | Remarks |
|---------------|------------------------|---------|---|--------|--------------------------------------|
| | | | At 5% | At 10% | |
| - 60 days | 175251.54 | | | | |
| + 60 days | 178235.09 | | | | |
| ± 60 days | | -0.1880 | Insig | Insig | No Change in volume |
| -30 days | 142031.71 | | | | |
| +30 days | 152984.53 | | | | |
| ± 30 days | | -0.9440 | Insig | Insig | No Change in volume |
| -10 days | 131714.36 | | | | |
| +10 days | 197122.31 | | | | |
| ± 10 days | | -5.4489 | Sig | Sig | Increase in volume post announcement |

Table A7
Volume Effect For All Additions
(Non Para; Wilcoxon Z-Test)

| Window Period | Wilcoxon Z- Value | Asymp. Sig. (Prob) | Remarks |
|---------------|-------------------|--------------------|----------------------------------|
| ± 60 days | -.464 | .643 | No. dif. in volume |
| ± 30 days | -.689 | .491 | No. dif. in volume |
| ± 10 days | -2.191 | .028** | Increase in volume post announce |

** Sig. at both 5% and 10%

Table A8
Volume Effect For All Deletions
(Parametric Z – test)

| Window Period | Mean Daily Agg. Volume | Z | Significant (sig)/Insignificant (insig) | | Remarks |
|---------------|------------------------|--------|---|--------|----------------------------|
| | | | At 5% | At 10% | |
| - 60 days | 1033373.55 | | | | |
| + 60 days | 746411.41 | | | | |
| ± 60 days | | 3.8507 | Sig | Sig | Volume lower post announce |
| -30 days | 814609.48 | | | | |
| +30 days | 72587.40 | | | | |
| ± 30 days | | 1.2669 | Insig | Insig | No change in volume |
| -10 days | 1009173.66 | | | | |
| +10 days | 901197.45 | | | | |
| ± 10 days | | 1.1622 | Insig | Insig | No change in volume |

Table A9
Volume Effect For All Deletions
(Non Para; Wilcoxon Z-Test)

| Window Period | Wilcoxon Z- Value | Asymp. Sig. (Prob) | Remarks |
|---------------|-------------------|--------------------|----------------------------|
| ± 60 days | -3.813 | .000** | Volume lower post announce |
| ± 30 days | -.668 | .504 | No change in volume |
| ± 10 days | -.051 | .959 | No change in volume |

** Sig. at both 5% and 10%