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Abstract
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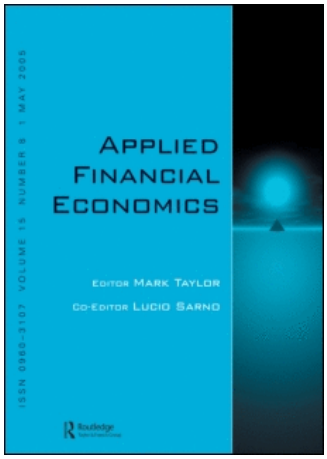

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Short selling restrictions and market completeness: the Malaysian experience

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Short selling restrictions and market completeness: the Malaysian experience

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We examine the market's reaction around a series of events on the Kuala Lumpur Stock Exchange (KLSE) where the Malaysian government removed short selling restrictions on selected stocks and then subsequently reimposed these restrictions. These events provide a unique opportunity to analyse the effects of short selling restrictions on the price formation process in an emerging market. It has been argued that the impact on prices from incorporating negative information via short sales should lead to a correction of the upward bias in prices prevalent under short selling restrictions. This should result in lower prices and observed returns around the announcement of the removal of short selling restrictions. Conversely, it can be argued that the removal of these restrictions helps complete markets, permitting full price discovery. This is particularly important in a market like Malaysia where stock options are not traded. Here the immediate impact of a removal of short selling restrictions would be an upward revision in security prices resulting in positive observed returns. The opposite revaluation effects should hold in the situation when short selling restrictions are reimposed. We find evidence consistent with the explanation that the removal of short selling restrictions results in more complete markets and is valued by market participants, particularly for actively traded stocks.

I. Introduction

It is well known that the ability to short sell securities helps the price formation process by allowing investors to efficiently incorporate negative information into security prices. The ability to short sell is considered desirable because it provides a means to signal to the market the downward price expectations of informed traders. Previous studies on short sales have mainly been conducted on US markets, where researchers have tended to focus on the effects of short selling restrictions and short interest on security prices and returns.[1] Unlike in the US, short selling is generally heavily restricted in most Asian markets.[2]

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[1] See, for example, Jarrow (1980), Figlewski (1981), Diamond and Verrecchia (1987), Figlewski and Webb (1993), Senchack and Starks (1993), and Elfakhani (2000).
[2] For further details, see Charoenrook and Daouk (2005, Table I).

In fact, traders engaging in short selling have been prosecuted by regulators and fined for such activities.[3] In recent years, countries such as Hong Kong, Malaysia, Singapore and Thailand have relaxed (or removed) short selling restrictions either temporarily or permanently.[4] The focus of this paper is on the experience of Malaysia where regulators first removed, and subsequently reimposed, short selling restrictions on equities during 1996–1997. Specifically, in 1996 the Malaysian government introduced legislation permitting short selling to be conducted by approved stockbrokers, but not individual investors. On 27 August 1996, the Securities Commission announced the approval of short selling for 50 stocks. Actual trading with short selling permitted on these stocks commenced on 3 October 1996.[5] However, following the Asian financial crisis the government permanently suspended all short selling on the approved stocks on 28 August 1997.

The initial removal of short selling restrictions and their subsequent reimposition provide a unique opportunity to analyse the effects of these events on the price formation process and the value, if any, attached by the market to traders' ability to short sell. Malaysia's experience is also particularly relevant in the context of the increased volatility in emerging financial markets in recent years. Our findings also have implications for market regulators who are increasingly pursuing policies of liberalizing developing financial markets.

We find that the removal of short selling restrictions on the KLSE permitted fuller price discovery and was valued by the market. The market's reaction was strongest for stocks in which there was substantial trading interest. Thus, our evidence does not support the alternative explanation that short selling restrictions result in upwardly biased prices, which would imply a downward revision in prices, and hence negative observed returns, once these restrictions are removed. We also find that the market viewed the suspension of short selling quite negatively, especially for the relatively actively traded stocks.

Our paper contributes to the previous literature in the following ways. First, to the best of our knowledge, this is the first paper that analyses the effects of short selling restrictions on the price formation process in an emerging market using the event study method.[6] Second, we examine the market's reaction to the removal, and subsequent reimposition, of short selling restrictions and empirically verify whether the empirical evidence is consistent with the upward bias in stock prices explanation or the alternative market completeness explanation offered in the previous literature. Third, Malaysia is the first emerging market to relax short selling restrictions followed by their subsequent reimposition. Evidence on the pricing behaviour presented here can provide an important guide to regulators and investors in other emerging markets considering relaxing short selling restrictions.

The remainder of this paper is organized as follows. Section II summarizes the previous literature, while Section III outlines the research questions examined. Section IV provides details on the data and method used, Section V presents and discusses the results and Section VI concludes the paper.

II. Previous Literature

As mentioned above, most of the previous research on short selling has been conducted in the US where the focus has been on the effects of short selling restrictions on stock returns and the relationship between changes in short interest and stock returns.[7] While earlier research[8] on the relationship between short interest and excess stock returns did not find a strong and consistent relationship, more recent research does find such a relationship. As Asquith and Meulbroek (1996) note, the power of the tests in earlier studies is weak since their sample selections are not based on the magnitude of short interests. Asquith and Meulbroek (1996) focus on stocks with large short positions and find a strong and consistent relation between short interests and excess returns for NYSE and AMEX listed firms. That is, stocks

[3] For example, in mid-1999 arrest warrants were issued on three Malaysian brokers who were alleged to have engaged in large scale short selling to systematically drive down prices on the KLSE.
[4] For further details on the types of short selling restrictions and changes to these restrictions in these Asian markets see Bris *et al*. (2003).
[5] This date corresponds with the date on which the market was informed as to the specific stocks on which short selling was to be permitted.
[6] Diacogiannis *et al*. (2005) also use the event study method when they examine the valuation effects of an 8% price limit that existed on the Athens Stock Exchange during August 1992 to February 2000. They find that the existence of these price limits resulted in short-term price overreactions once the positive or negative price limits were reached.
[7] For more detailed reviews of the previous literature on short selling see, for example, Singal and Xu (2005).
[8] See, for example, Figlewski (1981), Brent *et al*. (1990), Figlewski and Webb (1993) and Woolridge and Dickinson (1994).

with high levels of short interest perform significantly more poorly than comparable stocks without short positions. Desai *et al*. (2002) examine NASDAQ listed firms and find that stocks that are short sold heavily experience significant negative abnormal returns after controlling for other factors including the market, firm size and the book-to-market ratio. More recently, Asquith *et al*. (2005) confirm these findings for a large and comprehensive sample of firms listed on the NYSE, AMEX and NASDAQ. However, they also find that their results hold mainly for equally weighted portfolios while the magnitude of underperformance is statistically insignificant for value weighted portfolios.

A related area explored by previous researchers is the effect of changes in short interest and new short sales on excess stock returns. These studies focus on why stocks are short sold and explore the costs associated with short selling. For example, Senchack and Starks (1993) find that stocks with unexpected increases in short interest experience significant negative returns, while DeChow *et al*. (2001) find that short sellers establish positions in stocks with low ratios of fundamental values to market prices and then cover their positions when these ratios revert to their long-run mean. Christophe *et al*. (2004) show that NASDAQ listed firms experience abnormally high short selling activity prior to negative post-earnings announcement returns. Using intraday data from the Australian Stock Exchange, Aitken *et al*. (1998) find that stock prices decline very quickly in response to short sales, with the price reaction being more significant for trades taking place close to information sensitive events. Elfakhani (2000) examines whether there is a relationship between firm size, short positions and subsequent stock returns. Similar to the results reported by other researchers, Elfakhani finds that stocks with a high level of short interest subsequently underperform the market. He also finds that, consistent with the liquidity hypothesis, short interest positions on less liquid, overpriced small stocks are more profitable than more liquid, large stocks.[9]

Another strand of the previous literature examines the mitigating effects of put options on short selling restrictions. Short selling in stocks with traded options is less likely to be informative because informed traders can use the lower cost options markets to act on their negative information. Consistent with this argument, Senchack and Starks (1993) and Figlewski and Webb (1993) find that stocks with traded options are less likely to react negatively following announcements of increases in short interest. Chen and Singal (2003) attribute the dissipation of the weekend effect in recent years for large stocks to the migration of short sellers from the stock market to the options market. In the context of our study, we note that the mitigating effects of put options do not apply to the Malaysian market since put options on individual stocks did not exist during our sample period.

III. Research Questions

While there appears to be no direct test of price reactions to the removal or imposition of short sales restrictions there are several theoretical papers that explain the possible impact of these actions.[10] One explanation for a price effect following the removal of short selling restrictions is that such restrictions can adversely affect the aggregation of information among market participants because of the differential impact of traders with favourable versus unfavourable information (see, for example, Figlewski, 1981). With restrictions on short sales, traders may only take long positions in a security about which their information is favourable, but no position when the information is unfavourable. This implies the existence of an upward bias in security prices if the unfavourable information is unable to be impounded in prices (Miller, 1977). These short selling restrictions are even more binding in a market such as Malaysia where put options on individual stocks are not traded. Thus, the immediate impact of a removal of short selling restrictions would be for this upward bias in security prices to be eliminated resulting in a fall in prices and, hence, negative observed returns on these securities.

On the other hand, Jarrow (1980) shows that the overall effect of short selling restrictions may be more complex if traders disagree on the portfolio risk characteristics of securities subject to the short selling restrictions, implying either an upward or a downward bias in security prices. Diamond and Verrecchia (1987) model the effect of short selling restrictions on the distribution and speed of adjustment of security prices to private information. They show that while short selling restrictions can influence the rate of dissemination of private information to the market, such restrictions may not lead to biased prices because investor expectations

[9] The liquidity hypothesis suggests that since large stocks are easier to short sell investors would require higher return premiums to short sell less liquid, overpriced small stocks than large stocks.
[10] For a survey of the theoretical models on short sales and their effect on stock returns see Rubinstein (2004).

already incorporate these trading restrictions. This is consistent with the idea that removal of short selling restrictions helps complete the market, permitting full price discovery. In this case, the immediate impact of a removal of short selling restrictions would be an upward revision in security prices and positive observed returns.

The opposite market revaluation effects should hold in the situation when short selling restrictions are reimposed, which occurred on 28 August 1997 on the KLSE. Thus, consistent with Figlewski (1981), among others, the reimposition of short selling restrictions would result in traders only being able to take long positions in a security about which their information is favourable, but no position when the information is unfavourable implying an upward bias in security prices. Consequently, the immediate effect of the reimposition of short selling restrictions would be for stock prices to be biased upwards and positive observed returns around the announcement day. Conversely, if the presence of short selling allows for full price discovery and market completeness the immediate effect of the reimposition of short selling restrictions would be a downward revision in stock prices and, hence, negative observed returns around the announcement day.

To summarize, the main research questions addressed in this are paper as follows.

(1) How is the removal of short selling restrictions viewed in an emerging equity market like Malaysia? We examine whether the market's reaction to the removal of short selling restrictions is consistent with Figlewski (1981) where the upward bias in security prices is removed resulting in a short-term negative reaction around the announcement day. Conversely, a positive market reaction would be consistent with the explanation that the ability to short sell securities enhances market completeness and is valued by the market, especially since put options on individual stocks are not traded in this market.
(2) How does the market view the reimposition of short selling restrictions? If short selling enhances market completeness then the immediate effect of a reimposition of short selling restrictions will be a downward revision in stock prices and, hence, negative observed returns on the announcement day.
(3) Is the market's reaction different for the relatively more actively traded stocks compared to the relatively less actively traded stocks? It is possible that the market's reaction to the removal of short selling restrictions and their subsequent reimposition may be different for firms that are relatively more liquid and actively traded.

Based on the description of events in Malaysia above, we examine the market revaluation effects around three specific dates: (a) when the announcement removing short selling restrictions was made to the market on 27 August 1996; (b) when the approved stocks began trading with no short selling restrictions on 3 October 1996; and (c) when short selling was suspended on 28 August 1997.[11] In addition, conversations with stockbrokers revealed that of the 50 stocks approved for short selling, nine stocks were relatively more actively traded and had considerably more short selling activity during this time period. Thus, our analysis focuses on the full sample of 50 stocks approved for short selling, as well as the sub-samples of nine relatively actively traded stocks and the 41 relatively inactively traded stocks.

IV. Data and Method

Data on individual stocks and the proxy for the market portfolio, the Kuala Lumpur Composite Index (KLCI), are obtained from the SCANs file of the KLSE. We use the standard event study method (see, for example, Brown and Warner, 1985) to measure the market's reaction to the announcement of the removal of short selling restrictions, and their subsequent reimposition. The market model parameters are estimated over days -240 to -21 relative to the day on which the removal of short selling restrictions was announced to the market, which is defined as day 0. To take into account the possibility of non-synchronous trading, we estimate the market model parameters using the Scholes and Williams (1977) procedure. The focus of our analysis is over the announcement period of days $(-1, 0)$ and days $(-1, +1)$, and we test the hypothesis that the average abnormal and cumulative abnormal returns over these days equal zero.[12] To examine the market's reaction before and after the removal of short selling

[11] We examine the market's reaction around 3 October 1996 to verify whether there are any residual effects on stock prices once trading without short selling restrictions commenced.
[12] Although we know the days on which specific announcements were made we include the days before and after the announcement day to capture any possible market reaction prior to, and immediately following the announcement day.

restrictions we also compute the average cumulative abnormal return over various windows during days (−15, +15) relative to the announcement date. To verify whether outliers may be affecting our results we use a non-parametric sign test, which examines whether the proportion of positive abnormal returns is statistically different from the abnormal returns during the estimation period.

We use the same estimation period for computing the abnormal returns around the day short selling was initiated on approved stocks, which occurred on 3 October 1996, as well as around the day when short selling was suspended, which occurred on 28 August 1997. That is, for both these events we use the same market model parameters estimated over days (−240, −21) relative to the *announcement* day, which was 27 August 1996.

V. Results and Discussion

Announcement of removal of short selling restrictions

Table 1 shows the cumulative abnormal returns (CARs) earned by the full sample of firms that were approved for short selling on 27 August 1996, and sub-samples of nine relatively actively and 41 relatively inactively traded firms. For the full sample, we observe significant CARs over the days leading up to and including the announcement day. The mean (median) CARs over days (−10, 0) are +1.3% (+1.9%), with the mean CARs being statistically significant at the 5% level (Panel A). Over days (−10, +10), the mean (median) CARs are +2.2% (+2.8%), with the mean CARs being significant at the 5% level. The sign test indicates that these abnormal returns are not driven by outliers. The mean CARs over the announcement period of days (−1, 0) or days (−1, +1) are not statistically significantly different from zero. We note, however, that these firms do earn a mean abnormal return of +0.3% on day −1 (not shown), which is statistically significant at the 5% level.

For the sub-sample of the nine actively traded stocks we observe mean (median) CARs over days (−10, 0) of +2.6% (+2.3%), with the mean CARs being statistically significant at the 5% level (Panel B). Over days (−10, +10), the mean (median) CARs are +6.1% (+4.4%) with the mean CAR being significant at the 5% level. Seven of the nine stocks earn positive average abnormal returns over these days. Although the CARs over the announcement period of days (−1, 0) or days (−1, +1) are not statistically significant, we find that the mean abnormal returns on day −1 (not shown) of +1.2% is statistically significant at the 1% level.

Table 1. Summary of cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the initial announcement day (27 August 1996)

Event days	Cumulative average abnormal return (%)	Median cumulative abnormal return (%)	*t*-Statistic	Positive : negative	*Z*-statistic for generalized sign test
Panel A: Cumulative abnormal returns for full sample					
(−1, 0)	0.02	0.09	0.41	27 : 23	0.73
(0, +1)	−0.32	−0.01	−0.97	24 : 26	−0.12
(−1, +1)	−0.02	−0.10	0.32	24 : 26	−0.12
(−10, +10)	2.24	2.78	2.77***	35 : 15	2.99***
(−10, 0)	1.31	1.88	2.40**	32 : 18	2.15**
(0, +10)	0.65	0.35	1.35	29 : 21	1.30
Panel B: Cumulative abnormal returns for the actively traded sub-sample					
(−1, 0)	0.58	−0.17	1.12	4 : 5	−0.15
(0, +1)	−1.06	−0.01	−1.03	4 : 5	−0.15
(−1, +1)	0.14	0.69	0.45	5 : 4	0.52
(−10, +10)	6.12	4.40	2.53**	7 : 2	1.85*
(−10, 0)	2.63	2.27	2.14**	7 : 2	1.85*
(0, +10)	2.86	0.35	1.56	6 : 3	1.18
Panel C: Cumulative abnormal returns for the inactively traded sub-sample					
(−1, 0)	−0.09	0.10	−0.23	23 : 18	0.88
(0, +1)	−0.16	−0.01	−0.49	20 : 21	−0.06
(−1, +1)	−0.06	−0.15	0.08	19 : 22	−0.37
(−10, +10)	1.38	2.00	1.72*	28 : 13	2.44**
(−10, 0)	1.02	1.88	1.61	25 : 16	1.50
(0, +10)	0.17	0.34	0.34	23 : 18	0.88

Notes: *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. All *t*-tests are two-tailed tests.

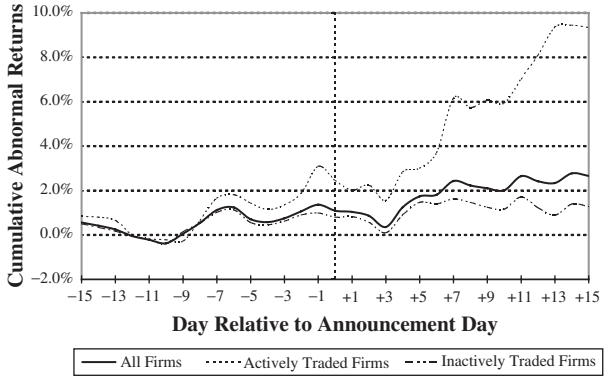

Fig. 1. Cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the initial announcement day

For the sub-sample of relatively inactively traded firms, our results generally indicate no positive market reaction over the announcement period, or over days around the announcement day (Panel C).

Figure 1 summarizes the CARs over days (−15, +15) for the full sample and the sub-samples of relatively actively and inactively traded firms. An interesting feature of this graph is the clear indication that the main beneficiary of the removal of short selling restrictions are the stocks which have a substantial trading interest once trading with short selling commenced. The upward market revaluation continues beyond day +10 and is clearly persistent and statistically significant.

Overall, this evidence is consistent with the explanation that the removal of short selling restrictions helps complete the market, permitting fuller price discovery and is valued by the market. The market's reaction is strongest for stocks in which there is substantial trading interest, which is not surprising because these firms have the most to gain from prices reflecting all information fully and instantaneously. In addition, this evidence does not support the contention that short selling restrictions result in upwardly biased prices implying a downward revision in prices once these restrictions are removed.

Commencement of trading with short selling

We next examine the market's reaction around 3 October 1996, which is the day when trading with short selling commenced on the approved stocks. We perform this analysis because it can be argued that there may be some residual market reaction around this day if market participants are uncertain as to whether the previously announced removal on short selling restrictions will, in fact, be implemented.

Table 2 shows the cumulative abnormal returns earned around 3 October 1996. Our results indicate that there is very little market reaction for the full sample (Panel A) or the sub-samples of relatively actively and inactively traded firms (Panels B and C, respectively). We do note that the nine relatively actively traded firms earn a mean abnormal return of +0.6%, which is moderately significant at the 10% level. However, the general lack of a market reaction around this day implies that there was very little uncertainty associated with the initial announcement.

Figure 2 summarizes the CARs over days (−15, +15) for the full sample and the sub-samples of the relatively actively and inactively traded firms. We note that the mean CARs for the actively traded firms continue to be higher than the mean CARs for the inactively traded firms. This observation is not surprising because there is an overlap between the period following the announcement of the removal of short selling restrictions and the period preceding the commencement of trading with short selling permitted.

Suspension of short selling

Table 3 shows the cumulative abnormal returns earned around 28 August 1997, the day when short selling on the approved stocks was suspended. In order to avoid other confounding events, we dropped two firms from the analysis because these firms were actively involved in acquisition activities during this time.[13]

The mean (median) CARs over days $(-10, 0)$ are −3.6% (−1.7%), with the mean CARs being statistically significant at the 5% level (Panel A). Over days $(-10, +10)$, the mean (median) CARs are +1.7% (+0.9%), but the mean CARs are not statistically significantly different from zero. However, the mean CARs over the announcement period of days $(-1, 0)$ or days $(-1, +1)$ are −5.2% and −5.5%, respectively, and are both statistically significant at the 1% level.[14] The sign test indicates that these negative abnormal returns are not driven by outliers. For the sub-sample of the seven remaining actively traded stocks we observe mean (median) CARs over days $(-10, 0)$ of −5.9% (−2.0%), with the mean CARs being statistically significant at the

[13] We also redid our earlier analysis after excluding these two firms from the full sample and the results are not materially different.

[14] We note that the average abnormal returns on days –1 and +1 are not significantly different from zero.

Table 2. Summary of cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the day trading with short selling commenced (3 October 1996)

Event days	Cumulative average abnormal return (%)	Median cumulative abnormal return (%)	*t*-statistic	Positive : negative	*Z*-statistic for generalized sign test
Panel A: Cumulative abnormal returns for full sample					
(−1, 0)	−0.10	−0.70	0.07	17 : 33	−2.10**
(0, +1)	0.05	0.17	0.20	26 : 24	0.45
(−1, +1)	−0.05	−0.35	0.11	20 : 30	−1.25
(−10, +10)	−1.04	−2.20	−0.82	18 : 32	−1.82*
(−10, 0)	−0.38	−1.44	−0.22	16 : 34	−2.38**
(0, +10)	−0.65	−0.91	−1.09	18 : 32	−1.82*
Panel B: Cumulative abnormal returns for the actively traded sub-sample					
(−1, 0)	1.48	−0.64	1.25	4 : 5	−0.15
(0, +1)	0.66	0.65	0.85	5 : 4	0.52
(−1, +1)	1.50	0.35	1.07	5 : 4	0.52
(−10, +10)	1.97	0.78	1.09	6 : 3	1.18
(−10, 0)	2.59	0.66	1.26	5 : 4	0.52
(0, +10)	0.03	0.23	1.30	5 : 4	0.52
Panel C: Cumulative abnormal returns for the inactively traded sub-sample					
(−1, 0)	−0.45	−0.77	−0.63	13 : 28	−2.25**
(0, +1)	−0.08	0.15	−0.08	21 : 20	0.25
(−1, +1)	−0.39	−0.48	−0.51	15 : 26	−1.62
(−10, +10)	−1.91	−2.57	−2.08**	12 : 29	−2.56**
(−10, 0)	−1.04	−1.71	−1.21	11 : 30	−2.87***
(0, +10)	−1.01	−1.41	−1.51	13 : 28	−2.25**

Notes: *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. All *t*-tests are two-tailed tests.

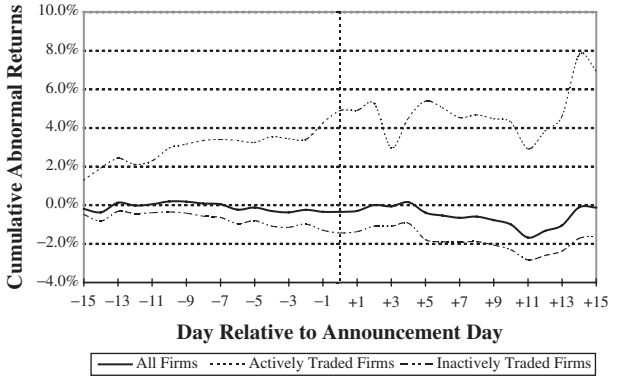

Fig. 2. Cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the day trading with short selling started

10% level (Panel B). Over days (−10, +10), the mean (median) CARs are −7.5% (−7.8%) with the mean CARs being significant at the 5% level. Five of the seven stocks earn negative mean abnormal returns over these days although the sign test does not indicate statistical significance. The CARs over the announcement period of days (−1, 0) and days (−1, +1) are −7.8% and −9.7%, respectively, but these are not statistically significant due to the relatively small sample of seven firms. However, the average abnormal return on day 0 is −6.6%, which is significant at the 10% level. For the sub-sample of the relatively inactively traded firms, the CARs over the announcement period of days (−1, 0) and days (−1, +1) are both −4.8% and are both statistically significant at the 5% level, and better (Panel C).[15] Twenty-nine of the 41 firms experience negative mean CARs over days (−1, 0).

Figure 3 shows the trends in the cumulative abnormal returns over days (−15, +15) around the day short selling was suspended on the approved stocks. Clearly, the market views the suspension of short selling negatively. The substantial and permanent negative revaluation experienced by the relatively actively traded firms is economically significant although not statistically so because of the small sample size. Interestingly, while the relatively less actively traded stocks also experience a negative revaluation on the announcement day there is a subsequent positive revaluation by the market as observed by the statistically significant positive CARs over days (−10, +10) (Panel C). However, only 25 of the 41 firms experience positive CARs over this period and the sign test is not significantly different from zero.

[15] We note that the average abnormal returns on days –1 and +1 are not significantly different from zero, while the average abnormal return on day 0 is –5.0% and is significant at the 1% level.

Table 3. Summary of cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the day short selling was suspended (28 August 1997)

Event days	Cumulative average abnormal return (%)	Median cumulative abnormal return (%)	*t*-statistic	Positive : negative	*Z*-statistic for generalized sign test
Panel A: Cumulative abnormal returns for full sample					
(−1, 0)	−5.22	−2.65	−3.35***	14 : 34	−2.73***
(0, +1)	−5.55	−2.65	−3.18***	17 : 31	−1.86*
(−1, +1)	−5.54	−2.31	−2.84***	20 : 28	−0.99
(−10, +10)	1.71	0.87	1.23	27 : 21	1.03
(−10, 0)	−3.57	−1.73	−1.98**	20 : 28	−0.99
(0, +10)	0.05	2.01	0.36	28 : 20	1.32
Panel B: Cumulative abnormal returns for the actively traded sub-sample					
(−1, 0)	−7.77	−4.11	−1.52	2 : 5	−0.98
(0, +1)	−8.43	−8.52	−1.54	2 : 5	−0.98
(−1, +1)	−9.65	−7.55	−1.58	3 : 4	−0.22
(−10, +10)	−7.53	−7.79	−2.37**	2 : 5	−0.98
(−10, 0)	−5.85	−2.01	−1.76*	2 : 5	−0.98
(0, +10)	−8.23	−9.57	−2.51**	2 : 5	−0.98
Panel C: Cumulative abnormal returns for the inactively traded sub-sample					
(−1, 0)	−4.79	−2.55	−2.95***	12 : 29	−2.56**
(0, +1)	−5.06	−2.50	−2.76***	15 : 26	−1.62
(−1, +1)	−4.83	−2.17	−2.37**	17 : 24	−1.00
(−10, +10)	3.29	2.81	2.05**	25 : 16	1.50
(−10, 0)	−3.18	−1.45	−1.52	18 : 23	−0.68
(0, +10)	1.47	3.06	1.26	26 : 15	1.82*

Notes: *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. All *t*-tests are two-tailed tests.

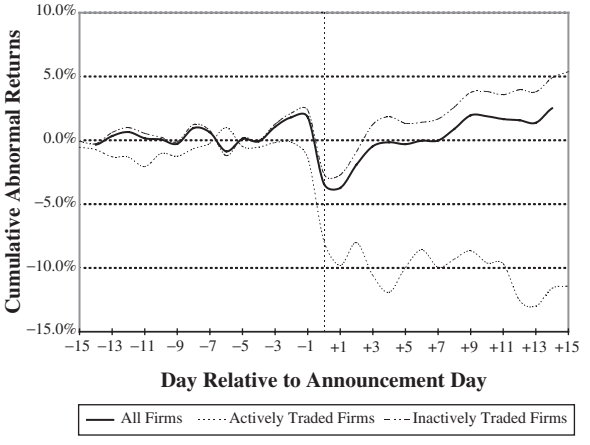

Fig. 3. Cumulative abnormal returns earned by the full sample and actively and inactively traded sub-samples of firms approved for short sales – analysis around the day short selling was suspended

VI. Summary and Conclusions

We examine the market's reactions around the removal and subsequent reimposition of short selling restrictions on selected stocks listed on the Kuala Lumpur Stock Exchange during 1996–1997. To the best of our knowledge, this is the first paper to analyse the effects of short selling restrictions on the price formation process in an emerging market. It has been argued that the removal of short selling restrictions should lead to a correction of the upward bias in prices with investors now being able to incorporate their negative information in these prices. This, in turn, should result in lower observed returns around the announcement of the removal of short selling restrictions. Conversely, it can be argued that the removal of short selling restrictions helps complete the market, permitting full price discovery. The immediate effect of this is the observation of a positive market reaction when the removal of short selling restrictions is announced.

We find strong evidence consistent with the explanation that the removal of short selling restrictions helps complete markets and is valued by market participants, particularly for actively traded stocks. The reimposition of these restrictions leads to the opposite effect of a persistent decline in prices and observed returns. We suggest that the regulatory action of relaxing restrictions promotes fuller incorporation of information into prices whereas continued restrictions are seen by the market as not promoting efficient price formation to information arrival.

In conclusion, we believe that the evidence on the pricing behaviour provided in this study on Malaysia's experience with the initial relaxation,

and subsequent reimposition, of short selling restrictions provides an important guide to regulators and investors in other emerging markets considering relaxing short selling restrictions. Based on our findings, we argue that it is in the interest of emerging markets to foster full disclosure of price-relevant information by removing, or relaxing, short selling restrictions.

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References

Aitken, M. J., Frino, A., McCorry, M. S. and Swan, P. L. (1998) Short sales are almost instantaneously bad news: evidence from the Australian Stock Exchange, *Journal of Finance*, **53**, 2205–23.

Asquith, P. and Meulbroek, L. (1996) An empirical investigation of short interest, MIT Working Paper.

Asquith, P., Pathak, P. A. and Ritter, J. R. (2005) Short interest, institutional ownership, and stock returns, *Journal of Financial Economics*, **78**, 243–76.

Bris, A., Goetzmann, W. N. and Zhu, N. (2003) Short sales in global perspective, Yale ICF Working Paper 04-01.

Brent, A., Morse, D. and Stice, K. (1990) Short interest: explanations and tests, *Journal of Financial and Quantitative Analysis*, **2**, 273–89.

Brown, S. J. and Warner, J. B. (1985) Using stock returns: the case of event studies, *Journal of Financial Economics*, **14**, 3–31.

Charoenrook, A. and Daouk, H. (2005) A study of market-wide short-selling restrictions, Vanderbilt University Working Paper.

Chen, H. and Singal, V. (2003) Role of speculative short sales in price formation: the case of the weekend effect, *Journal of Finance*, **58**, 685–705.

Christophe, S., Ferri, M. and Angel, J. (2004) Short-selling prior to earnings announcements, *Journal of Finance*, **59**, 1845–75.

DeChow, P., Hutton, A., Meulbroek, L. and Sloan, R. (2001) Short sellers, fundamental analysis, and stock returns, *Journal of Financial Economics*, **61**, 77–106.

Desai, H., Thiagarajan, S. R., Ramesh, K. and Balachandran, B. V. (2002) An investigation of the informational role of short interest in the NASDAQ market, *Journal of Finance*, **57**, 2263–87.

Diacogiannis, G. P., Patsalis, N., Tsangarakis, N. V. and Tsiritakis, E. D. (2005) Price limits and overreaction in the Athens Stock Exchange, *Applied Financial Economics*, **15**, 53–61.

Diamond, D. W. and Verrecchia, R. E. (1987) Constraints on short-selling and asset price adjustment to private information, *Journal of Financial Economics*, **18**, 277–311.

Elfakhani, S. (2000) Short positions, size effect, and the liquidity hypothesis: implications for stock performance, *Applied Financial Economics*, **10**, 105–16.

Figlewski, S. (1981) The information effects of restrictions on short sales: some empirical evidence, *Journal of Financial and Quantitative Analysis*, **16**, 464–76.

Figlewski, S. and Webb, G. P. (1993) Options, short sales, and market completeness, *Journal of Finance*, **48**, 761–77.

Jarrow, R. (1980) Heterogenous expectations, restrictions on short sales, and equilibrium asset prices, *Journal of Finance*, **35**, 1105–14.

Miller, E. M. (1977) Risk, uncertainty, and divergence of opinion, *Journal of Finance*, **32**, 1151–68.

Rubinstein, M. (2004) Great moments in financial economics: III. Short-sales and stock prices, *Journal of Investment Management*, **2**, 16–31.

Scholes, M. and Williams, J. (1977) Estimating betas from non-synchronous data, *Journal of Financial Economics*, **5**, 309–27.

Senchack, A. J. and Starks, L. T. (1993) Short sale restrictions and market reaction to short-interest announcements, *Journal of Financial and Quantitative Analysis*, **28**, 177–94.

Singal, V. and Xu, L. (2005) Do short sellers know more? Evidence from a natural experiment, Virginia Tech Working Paper.

Woolridge, J. R. and Dickinson, A. (1994) Short selling and common stock prices, *Financial Analysis Journal*, **50**, 20–28.