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REPRESENTATIVE HEURISTICS AND THE AFTERMARKET DYNAMIC OF THE NEW LISTINGS IN MALAYSIA

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Abstract

This paper investigates the influences of representative heuristics and ex-ante factors on the immediate aftermarket dynamics of new issues. The two immediate aftermarket dynamics covered in this study are opening-day-spread and flipping activities. A total of 177 new issue samples listed on the Main Board of Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange) from 1991 to 2008 are used in this study. Results support a positive significant influence of representative heuristics on opening-day-spread. On the other hand, a negative relationship was reported between representative heuristics and flipping activities. Among the ex-ante variables included in the model, market condition was found to have predictive power over immediate aftermarket dynamics.

JEL Classification: G14
Keywords: *Representative heuristics; Aftermarket dynamics, Flipping, Ex-ante factors.*

1. Introduction

Research interest on new issues was generally concentrated on the short-run and long-run anomalies related to their pricing performance over the past four decades. In terms of explaining the anomalous phenomena, the majority of research has adhered to the assumption that the market is rational and hence, anomalies are due to intentional underpricing by the issuers.

However, the study of new issue anomalous phenomena from the behavioural perspective is of significance because the Malaysian market

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has an emerging market status and various studies have documented that the Malaysian market is inefficient (Mat Nor, Lai and Hussin, 2002). Besides that, studies of the impact of behavioural biases on aftermarket dynamics such as flipping activities and opening-day-spread are rarely found.

With the above scenario in mind, this study intends to shed some light on the existing gap by analyzing two new issue aftermarket dynamics i.e. the flipping activities and opening-day spread from the behavioural perspective of representative heuristics. Representative heuristics is a famous behavioural bias which affects investors' judgment under uncertainty. Shiller (2003) defines representative heuristics as a tendency for people to categorise events as typical or representative of a well-known class. This tendency later leads to overstressing the importance of such a categorization and disregarding evidence about the underlying probabilities.

Following Bayley, Lee and Walter (2006), mean initial returns of the three most recently listed new listings are used as proxy of representative heuristics. The aftermarket dynamics investigated are flipping activity which is defined as the immediate sale of new issues when the issue starts trading while opening-day-spread refers to the diverse valuation of investors on new issues on the immediate trading day.

The rest of this paper is organized as follows. Following the introduction, related literature will be discussed in Section 2. Section 3 describes the data and methodology. Section 4 presents the empirical results and analysis. Lastly, Section 5 summarizes the results and concludes the study.

2. Literature Review

Research interest on new issues is generally confined to the pricing performance in the aftermarket. Thus far, the Malaysian new listings market has consistently reported underpricing for the past four decades (Dowson, 1987; Yong, 1991; Isa and Ahmad, 1996; Leong, Vos and Tourani-Rad, 2000 and Ahmad-Zaluki, Campbell and Goodacre, 2007).

On the other hand, ex-ante factors such as operating history, market conditions and underwriter's reputation have been documented by Beatty and Ritter (1986) among others for having predictive power on initial performance. According to Beatty and Ritter (1986) as well as Ritter (1984), ex-ante factors conveyed important information which affects new listing performance. They found that the necessary underpricing is higher for issues of greater uncertainty.

In a related study, Klymaz (1999) contended that, size of the issuing company and market condition influenced the level of underpricing of new listings on the Istanbul Stock Exchange. Meanwhile, Carter and Manaster (1990) claimed that reputation of underwriter can serve as a signal on new listings quality. This is because reputable underwriters screen and favour firms with lower risk, this lead to the conclusion that prestigious underwriters are associated with lower underpricing. Numerous empirical studies have provided support on this theory (see Michaely and Shaw, 1994 and Hughes and Thalor, 1992). These studies posited that new listings issued by reputable underwriter ended up with less underpricing and performed better in the long-run. Nonetheless, Wan-Hussin (2002) found no relationship between underwriters' reputation and underpricing in the Malaysian new listing market.

Apart from the factors influencing new listings discussed above, researchers from the behavioural finance paradigm such as Shefrin and Statman (1993) and Shiller (2003), postulated that behavioural bias such as representative heuristics also influence the decision process of the stock market investors. According to Tversky and Kahneman (1974) who introduced the representative heuristics concept:

> *Representativeness is an assessment of the degree of correspondence between a sample and a population, an instance and a category, an act and an actor, or more generally between an outcome and a model. (Tversky and Kahneman, 1983, pp 295-296).*

Besides, Tversky and Kahneman (1983) also suggested that the most common method to demonstrate how a variable influences a judgment is to establish a correlation between that particular variable and the judgment. Later, in a related article, Tverskey and Kahneman (1996), clarified further that intuitive predictions or judgments under uncertainty are often based on the relation of similarity or representativeness between the evidence and possible outcomes. In other words, representative heuristics lead people to overestimate the probability and frequency of events that come easily to mind as they are more accessible in memory.

Stracca (2004) called this phenomenon an act to mis-perceive the laws of probability. He further posited that systematic heuristics can lead to blunders that plague economic agents. An example is price, which is often considered 'normal' and 'equilibrium' by agents who might also have no idea of 'fair' price always turns out to be inaccurate in future price developments.

In the stock market, representative heuristics can be a judgment bias or stereotype that can lead investors to judge a stock as a winner or loser and a market as bull or bear based on what has happened in the past few

sequences without valuing the statistical probability of the outcome of these sequences. Furthermore, it could also lead investors to be more optimistic due to past gains and more pessimistic due to past losses. Shefrin and Statman (1993) contended that investors' tendency to overweight recent performance may be explained by the representative heuristics. Nevertheless, since this is a relatively new concept in finance, not much research has been carried out in this area.

There is no doubt that using representative heuristics allows individuals to make 'quick' decisions as it involves ease of recall and cognitive shortcuts. However, making decisions using heuristics can be dangerous because not all information relevant to the decision is carefully considered. Of course 'correct decisions' are made in some cases but it can also result in common mistakes known as fallacies.

On the other hand, there has been an increasing interest in studying investors' aftermarket trading dynamics such as flipping activities, particularly in the United States. The behaviour of flipping new listings in the immediate aftermarket for a quick gain has provided liquidity to the new listings' initial aftermarket trading activity. However, excessive flipping is discouraged as it is detrimental to the performance of the new listings. In the US, price stabilization activities are used by underwriters to mitigate the downward price pressure due to flipping, particularly in weak offerings. Among the stabilizing activities used are Green Shoe options and penalty bids (Ritter and Welch, 2002; Aggarwal, 2000; Fishe, 2002; Krigman, Shaw and Womack, 1999; Aggrawal, 2003).

In a related study on the impact of representative heuristics on flipping activities in Australia, Bayley, Lee and Walter (2006) used the equally-weighted underpricing for the most recent new listings prior to the issuance of the firm's prospectus date as a proxy of representative heuristics. They reported a positive relationship between investors' decisions to flip and the performances of the equally-weighted average of the most recent new listings for both institutional and individual investors. A similar study by Krigman, Shaw and Womack (1999) contended that flipping activity is predictable. Furthermore, larger deals generally recorded a higher flipping activity while initial return is negatively associated with flipping.

3. Data and Methodology

Samples for this study comprised 177 new listings listed on the Main Board of Bursa Malaysia between 1991 and 2008. Only samples with all the requisite information available were selected for analysis. The aftermarket dynamics examined in this study are flipping activities and opening-day spread. Flipping activities are represented by flipping ratio. It is defined as the percentage of opening day trading volume divided by

the number of shares offered on the first trading day (Miller and Reily, 1987 and Aggarwal, 2003). On the other hand, opening-day spread is defined as the difference between day high and day low on the first trading day.

To capture the influence of representative heuristics on the immediate aftermarket dynamics of new listings in Malaysia, following Bayley, Lee and Walter (2006), the average equally-weighted underpricing for the three most recent new issues listed prior to the firm's listing date is used as proxy for representative heuristics (RH). Since investors' judgments on new listings' valuation can be associated with performance of the most recently offered new listings, therefore, this study hypothesizes a positive relationship between RH and the level of immediate aftermarket activities. Meanwhile, as discussed earlier, literature indicates that ex-ante factors can pose a significant impact on aftermarket performance; hence, these factors were included as control variables in the models.

The mathematical expressions of Model 1 and Model 2 are presented below:

$$ODS = \alpha + \beta_1 LOGMktCon - \beta_2 LOGSizeOff - \beta_3 UR + \beta_4 RH + \beta_5 Pre\text{-}Crisis\ Dummy + \beta_6 Post\text{-}Crisis\ Dummy + \varepsilon \quad (1)$$

$$FR = \alpha + \beta_1 LOGMktCon - \beta_2 LOGSizeOff - \beta_3 UR + \beta_4 RH + \beta_5 Pre\text{-}Crisis\ Dummy + \beta_6 Post\text{-}Crisis\ Dummy + \varepsilon \quad (2)$$

Whereby:

ODS	=	Opening-day-spread.
FR	=	Flipping ratio.
LOGMktCon	=	Market Condition. It is calculated as the average market index return over one week prior to the listing date.
LOG SizeOff	=	Size of Offer. It is measured as the total number of shares floated in a new issue multiplied by the subscription price. A log-transformation is applied on this variable due to its positive skewness (Kautia, 2004).
RH	=	Representative Heuristics. Measured as the equally-weighted underpricing for the three most recent new issues listed prior to the firm's listing date (Bayley, Lee and Walter, 2006)
UR Dummy	=	Quality of the lead underwriter. UR Dummy equals '1' for a prestigious underwriter and '0' otherwise, in accordance with The Central Bank of Malaysia's rating.
Pre-crisis dummy	=	the period before the commencement of the Asian financial crisis in June 1997. Pre-crisis

	dummy equals to '1' if new listings were listed before 1 June, 1997, otherwise equals to '0'.
Post-crisis dummy=	the period after the Asian financial crisis starting October, 1998. Post crisis dummy equals '1' if new listings were listed after 30 September, 1998, otherwise it equals to '0'.

Model (1) examines the predictive power of representative heuristics on the decision process of assigning opening-day-spread in the immediate aftermarket while Model (2) investigates the impact of representative heuristics on flipping activity. A positive relationship is expected for RH and immediate aftermarket dynamics as investors can be driven to be more optimistic due to recent gains and more pessimistic due to past losses. Optimism will lead to higher speculation and tendency to flip for quick profit and vice-versa. Additionally, optimism also leads to higher valuation and consequently a higher spread on the opening day. For the ex-ante factors, variables with higher uncertainty usually resulted in more diverse opinions and hence, lead to a higher aftermarket dynamics and vice versa.

Hierarchical regression analysis was used for analysis. This method allows the variables to be entered in blocks. This procedure isolates the interactions effects if a simultaneous regression is performed. The R-square change indicates whether the predictor of interest improve the general prediction power of the models (Raudenbush and Bryk, 2002).

Besides the normality of error terms assumption, four other assumptions namely, linearity, homoskedasticity, no autocorrelation (independence of the error term) and no multicollinearity between independent variables need to be fulfilled before the regression analysis was initiated.

4. Empirical Results and Analysis

Hierarchical multiple regression analysis was performed on the models proposed. Empirical results on the impact of representative heuristics on flipping activities and opening-day-spread are exhibited in Table 1 and 2 respectively.

Referring to Table 1, the model reports an F value of 18.780 which was significant at the 95% confidence interval. In addition, the reported R-square change of 0.020 was also significant at the 5% level. This result implies that representative heuristics has a significant positive impact on investors' decisions in assigning a price to the new listings on the opening day; a higher recent performance is associated to a higher opening-day-spread.

On the other hand, among the ex-ante variables included in this model, market condition was found to be significantly related to opening-day-spread in a positive direction. This showed that investors became braver to assign a higher value to new listing in the immediate aftermarket when the market is performing well. However, investors were found to be cautious in their valuation after the financial crisis. This is supported by the results in Table 1 which showed a negative relationship between the post-crisis dummy and the opening-day-spread. Finally, the finding of no significant relationship between underwriter's reputation and opening-day-spread is consistent with that of Wan-Hussin (2002) which documented an insignificant relationship between underwriter's reputation and opening day dynamics in the Malaysia stock market.

Table 1
Results of Cross-Sectional Regressions of Representative Heuristics and Opening Day Spread

Variable	**Dependent Variable: Opening-day-spread**			
	Step 1		**Step 2**	
Independent variables	*β*	*t-stat*	*β*	*t-stat*
LOG Market condition	0.651	3.477**	0.370	1.695
LOG Size of offer	0.070	1.505	0.064	1.404
Underwriter's reputation Dummy	-0.034	-0.544	-0.011	-0.178
Pre-Crisis Dummy	0.141	0.090	0.073	0.783
Post-Crisis Dummy	-0.227	-2.408**	-0.190	-2.016**
Representative Heuristics			0.145	2.396**
F value	20.811**		18.780**	
R^2	0.378		0.399	
Adjusted R^2	0.360		0.377	
R Square Change	0.378**		0.020**	

**Significant at 5% level.

Table 2 presents findings of the cross-sectional regressions analysis of Model (2). Results from the hierarchical regression analysis showed that the model is significant at the 5% level with F value equals to 4.023. Moreover, findings also indicated that the R-square change is significant at the 5% significance level. Hence, this study concludes that representative heuristic is a significant predictor of the flipping activities. Nonetheless, contrary to the result of Baylay, Lee and Walter (2006), this study documented a negative relationship between representative heuristics and flipping activities. The reason could be investors are more inclined to hold onto their new listings temporarily hoping that the value of these new listings would be higher since the returns of the recent new listings were optimistic and vice-versa. Among the control variables included in the model, only LOG market condition was found to have a significant impact on the flipping activity.

Table 2
Results of Cross-Sectional Regressions of Representative Heuristics and Flipping Ratio

Variable	**Dependent Variable: Flipping Ratio**			
	Step 1		**Step 2**	
Independent variables	*β*	*t-stat*	*β*	*t-stat*
LOG Market condition	0.293	3.239**	0.425	4.023**
LOG Size of offer	-0.005	-0.235	- 0.003	- 0.122
Underwriter's reputation Dummy	0.007	0.239	- 0.004	- 0.119
Pre-Crisis Dummy	0.001	0.024	0.033	0.736
Post-Crisis Dummy	0.020	0.445	0.003	0.060
Representative Heuristics			-0.068	-2.339**
F value	2.709**		3.229**	
R^2	0.073		0.102	
Adjusted R^2	0.046		0.071	
R square Change	0.073**		0.029**	

**Significant at 5% level.

5. Summary and Conclusion

This study examines explanatory power of the proxy of representative heuristics on the aftermarket dynamics - flipping activity and opening-day-spread of the Malaysian new listings. A total of 177 samples extracted from new issues listed on the Main Board of Bursa Malaysia from 1991 to 2008 are used for analysis.

Cross-sectional analysis of the impact of representative heuristics on aftermarket dynamics showed that immediate aftermarket dynamics were significantly affected by representative heuristics. A significant positive relationship was found between representative heuristics and opening-day-spread. However, evidence of a negative influence of representative heuristics on flipping activity was discovered. These results implied that a higher average return of the three most recent new listings has resulted in more diverse opinions on subsequent new listing valuation. On the other hand, investors' decision on whether to flip a new listing was negatively related to recent new listing performance. Since all the listings on the Main Board are blue chips, therefore, this result could implied that investors are motivated to keep the new listings subscribed in the immediate aftermarket hoping that these new listings will perform better in the near future because of optimism due to past gain and vice-versa. Meanwhile, flipping decision was found to be positively affected by market condition. This could be due to a better market condition tends to encourage more speculation and thus flipping activities.

In conclusion, findings show that on top of the explanations based on the neo-classical finance paradigm which assumes that investors are rational, this study has provided empirical evidence that behavioural bias such as representative heuristics is able to explain new listings aftermarket dynamics. As contended by DeBonbt and Thaler (1985), over-optimism due to past winners and over-pessimism due to past losers could affect the decision process of the investors and subsequently deviate price from fundamental levels.

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