

EFFECTIVENESS OF REGULATORY INTERVENTION

The Malaysia Experience



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ISBN: 978-1-942713-16-6
September 2015

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Executive Summary

— This research originated from the relatively common principal–agent conflicts among listed companies in Asian economies such as China, Hong Kong, Japan, South Korea, Malaysia, Singapore, and Thailand. According to Claessens, Djankov, and Lang (2000) and Chen, Firth, Gao, and Rui (2005), these conflicts are partly due to the prevalence of family ownership where the controlling families have strong incentives to extract private benefits¹ at the expense of minority shareholders (Yeung and Huang 2012).

In the midst of this environment, regulatory enforcement has been proposed (Black 2001) as an effective means to protect investors from expropriation activities. It is intuitive that punishing offenders with adequate penalties would send warning signals to would-be offenders that they are being monitored constantly. In the case of milder offenses, however, lawsuits and fines may be too harsh and inappropriate whereas private warnings are too light (Ho, Lee, and Mak 2014) and do not send any warning signal to the marketplace.

This is where the unusual market activity (UMA) query mechanism fits in. First, it highlights suspicious activities, through direct disclosure to the public, that the regulator deems not severe enough to warrant a formal investigation. Second, the UMA query mechanism serves as a platform for listed companies to account for abnormal market pricing and/or volume movement, which is akin to giving listed companies a second chance

to come clean with any undisclosed material information or to reaffirm their original status of unawareness. Third, similar to lawsuits and fines, a UMA query sends warning signals to would-be offenders that regulators are closely monitoring their activities.

Upon receiving a UMA query, listed companies respond in one of four different “styles”:

1. Reply “aware” and disclose material information on the day of the query. We labeled these companies “affirmative respondents” (AR) and grouped them under Disclosure Style Category 1.
2. Reply “unaware” but release material information within the next seven trading days. We labeled these companies “deferred respondents” (DefRes) and grouped them under Disclosure Style Category 2.
3. Reply “unaware” but release material information on the day of the query. We labeled these companies “delayed respondents” (DelRes) and grouped them under Disclosure Style Category 3.
4. Reply “unaware” with no follow-up disclosure of material information. We labeled these companies “negative respondents” (NR) and grouped them under Disclosure Style Category 4.

Against this background, we proceeded to analyze the effectiveness of the UMA query in the context of Bursa Malaysia Securities Berhad (Bursa Securities) from the UMA query mechanism’s inception in January 2007 to July 2014.

¹Examples of such private benefits include trading on insider information and awarding company contracts to vested-interest parties under the guise of arm’s-length transactions.

We chose Malaysia for its pioneer status in the adoption of the UMA query mechanism. Relative to both Indonesia and Singapore, where very similar mechanisms are in place, Malaysia has the longest history in terms of the mechanism's actual operation.

We started by looking at the common intervention measures adopted by regulators. We then turned to the UMA query—a type of market intervention that is currently the subject of fierce debate between its supporters and critics. To allow for better analysis, we also examined the status of the UMA query mechanism within Asia Pacific (APAC), with a special focus on Malaysia.

We examined a total of 206 UMA queries issued by Bursa Securities. Through this intensive qualitative examination of every UMA query issued by Bursa Securities between January 2007 and July 2014, we attempted to gain insights into the following:

1. Is the UMA query mechanism accurate in identifying companies with either yet-to-be-disclosed or soon-to-be-disclosed material information?
2. Is the UMA query mechanism effective in getting investors' attention upon issuance of the query?
3. What specific recommendations would improve the implementation of the UMA query mechanism?

To achieve our objectives, we designed our study to revolve around three levels comprising a total of 10 analyses. Descriptions of the analyses, our findings, and our interpretation of the results follow.

Level 1: Four Overall Analyses of the Dataset

We first looked at the overall picture of how the affected companies have responded to UMA queries, how the number of UMA queries has varied over the years, the time of day in which most queries occurred, and the major causes of what triggered the queries.

In the first analysis, we examined how the affected companies responded to the UMA queries. Our findings indicated that 82% of respondents eventually released some material information within seven trading days after the query. We thus concluded that the UMA query mechanism has been relatively accurate in detecting instances where material information is present but yet to be released as well as instances of soon-to-be-released material information.

In the second analysis, we looked at how the number of UMA query instances has varied throughout the years and observed a gradual increase in the number of abnormal market activities on Bursa Securities. Despite its relative accuracy in detecting instances where material information is present but yet to be released or soon to be released, the UMA query mechanism alone may be insufficient to discourage UMAs from occurring. To achieve that goal, additional complementary intervention or even punitive enforcement measures may be required.

In the third analysis, involving the time of day of the UMA query's release, we observed that the majority of the UMA queries were released during trading hours. Thus, those investors that closely monitor Bursa Securities' online circular may be in a better position to profit or, at a minimum, decrease their losses on the likely price movement following the query compared with those that do not. And given that providing a real-time investor alert system is one of the core objectives of using the UMA mechanism, we are puzzled as to why 49 instances of UMA queries took place during market closures.

In the fourth analysis, we examined the causes of the UMA queries and found that UMA queries concerning price surges took the top spot, garnering 74% (153 instances) of the 206 instances. Price surge is thus the number one cause of UMA queries.

Level 2: Three Segmental Analyses of the Dataset

We then drilled down one level to look at the content categorization of material disclosures that took place within seven trading days after the UMA query. We examined how prices behaved throughout the seven trading days after the query, looking at instances of both price surges and price plunges. Finally, we also looked at the distribution of the material disclosures across the seven trading days after the query.

In the fifth analysis, we examined the content categorization of material disclosures that occurred within seven trading days after the UMA query. We found that insider share transactions accounted for the largest number of instances both overall (36%, or 61 instances) and on a segmental basis—for the DelRes (50%, or 12 instances) and for the DefRes (40%, or 40 instances). For the AR, insider share transactions ranked number two, right behind new order book.

In the sixth analysis, we looked at how prices behaved throughout the seven trading days after the UMA query and found mixed results. First, among the 153 instances of UMA queries concerning price surges, approximately two-thirds of the stocks went through some degree of price correction and remained at a lower price level on the seventh day after the UMA query. This is partial evidence that the UMA query mechanism has functioned effectively as an alternative investor alert system given that during most instances, market participants have considered the UMA query when making investment decisions. In other words, the investors probably have contemplated the UMA query and have become more reluctant to continue buying because they suspect that the upward price movement is artificial.

Second, among the 32 instances of UMA queries concerning price plunges, only around 31% of the stocks went through some degree of price restoration and remained at a higher price level on the seventh day after the UMA query. In terms of functioning as an alternative investor alert system during price plunges, the UMA query mechanism is relatively ineffective.

In the seventh analysis, we looked at the distribution of the material disclosures across the seven trading days after the UMA query. Among the 99 instances of UMA queries under the DefRes category, 93% of the respondents released additional material information on or before the fifth day after the UMA query. The release of additional material information so soon after the query is unlikely to be mere coincidence. The companies involved either felt

pressured by the UMA query to release the information² or intended to release it anyway. The former is evidence of the UMA query mechanism's effectiveness in enforcing the disclosure of material information, whereas the latter provides additional proof of the mechanism's accuracy in pinpointing companies with soon-to-be-released material information.

Level 3: Three Year-by-Year Analyses of the Dataset

We then analyzed how post-UMA query behavior regarding information disclosure has evolved over the years by looking at the distribution of material disclosures with respect to both the day of the release and the percentage of each response style for each year. We also sought to determine whether the dominant type of UMA query trigger has remained the same over time.

In the eighth analysis, we examined the distribution of material disclosures with respect to the day of release and observed a spike in the number of material disclosures on the third and sixth trading days following the UMA query. We observed no other significant shift in the day-of-release pattern over time. Thus, we found no evidence to establish the exact effect of the UMA query mechanism on the delay in material disclosures over time.

In the ninth analysis, we examined the percentage of each response style for each year and found that the DefRes category dominated in all years.

In the tenth analysis, we sought to determine whether the dominant type of UMA query trigger has remained the same over time. We found that with the exception of 2008, UMA queries concerning price surges dominated in every single year.

Conclusions

We reached the following conclusions:

1. The UMA query mechanism has been quite effective at spotting instances of undisclosed or soon-to-be-disclosed additional material information.
2. Given the rise in UMA queries over time, the mechanism alone is not effective in reducing the number of UMAs.
3. Most UMA queries are issued during trading hours.
4. Price surge is the number one cause of UMA queries.
5. The most common category among all additional material disclosures is insider share transactions.

²Under Bursa Securities' listing rules, both insider share transactions and new share issues must be disclosed immediately upon their occurrence. A new order book, however, is not required to be disclosed immediately upon its occurrence, subject to the company's readiness. Therefore, listed companies may take advantage of this leeway. "New order book" refers to any manufacturing contract, order, or project secured by the listed company that is expected to have a significant positive impact on its future revenue.

6. UMA queries are most likely to be noticed by market participants during price surges.
7. UMA queries have been taken relatively seriously by most of the affected companies, given their tendency to release additional material information in the seven trading days after the query.
8. Evidence is mixed regarding improvements in reducing delays in the disclosure of material information.
9. DefRes dominated in all years.
10. Price surge remained the dominant form of UMA query trigger, except in 2008.

In general, the UMA query mechanism is relatively effective at identifying companies with either yet-to-be-disclosed or soon-to-be-disclosed material information. In terms of its acting as an alternative source of information to alert investors to potential market misconduct, however, the evidence is mixed.

Policy Recommendations

We derived a number of policy recommendations from our findings and conclusions:

1. Among 82% of all UMA queries, additional material information was eventually disclosed on the day of the query or within seven trading days thereafter. Among those instances in which disclosure was deferred, 93% of respondents went on to release additional material information by the fifth trading day after the query. Over the first seven months of 2014, there was a spike in the number of material disclosures on the third and sixth trading days after the UMA query. In view of these observations, we conclude that the UMA query mechanism has been relatively accurate in detecting instances of both yet-to-be-released and soon-to-be-released material information.

However, we found no evidence to establish the exact effect of the UMA query mechanism on the delay in material disclosures over time.

For regulators seeking a mechanism that can accurately highlight market movement anomalies as well as pinpoint undisclosed or soon-to-be-disclosed material information for investors, we recommend the adoption of a system that is similar in operation to the UMA query mechanism.

The UMA query mechanism still has room for improvement, however, especially in terms of reducing delays in the disclosure of material information. One possible way to achieve this goal is to provide appropriate training for the independent directors of listed companies and to offer relevant investor education to capital market participants. Arming market participants with more knowledge should make them more aware of their rights, thus forcing companies to be more forthcoming in disclosing material information.

At the same time, the UMA query mechanism needs to be accompanied by stronger enforcement actions before any tangible improvement in market integrity can be achieved. Simply identifying companies experiencing abnormal market activities for

investors—without any follow-up public announcement of an investigation or detailed explanation of what actually happened—will do little to enhance market integrity in the long run.

2. Close to 67% of the price surges related to UMA queries experienced some degree of correction after the query, but only 31% of the price plunges related to UMA queries experienced some degree of correction. In other words, in slightly more than two-thirds of the instances of price surges related to UMA queries, market participants were likely to have considered the UMA query in making their trading and investment decisions given the price correction after the UMA query. But in less than one-third of the instances of price plunges related to UMA queries did market participants do likewise.

In terms of functioning as an alternative source of information to alert investors to potential market misconduct, the UMA query mechanism has been more successful during price surges than during price plunges.

We therefore recommend that regulators adopt the UMA query mechanism as a way to alert investors to the potential presence of market euphoria if such a semi-paternalistic approach does not conflict with the regulators' style of operation.³

As for potentially unwarranted market pessimism, we recommend that regulators use other regulatory interventions to either complement or replace the UMA query mechanism.

For both potential market euphoria and seemingly unwarranted market pessimism that eventually turns out to be a true reflection of changes in a company's fundamentals, an investigation into the exact process of material information leaks (if any) would be necessary.

3. We recommend that regulators carefully examine the following areas to improve the implementation of the UMA query mechanism:
 - a. In view of the rising number of UMA queries, we recommend that regulators look into the possibility of using an appropriate complementary intervention measure to beef up the UMA query mechanism. These complementary intervention measures could include publicly announcing all follow-up investigation results and audit trails of the relevant corporate events that took place one month before the UMA as well as how things evolved over the six months after the UMA. This action would send a strong message to market participants that the regulator is adamant about rectifying the problem and would give a clear account of what actually happened: Was it just market rumors or were there hidden reasons?
 - b. Given that most UMA queries are issued during trading hours, we recommend that regulators examine the rate of information dispersion after the UMA query has been made public on Bursa Securities' website. This action should shed some light on whether any specific group of traders is benefiting exclusively from this live investor alert system. And if so, additional measures would need to be put in place to disperse the UMA query announcement more efficiently.

³Acting as an alternative market alert mechanism is not one of the traditional roles of a capital market regulator. There is, however, a school of thought that urges regulators in developing economies to take a more paternalistic approach, slowly releasing their "grip" as market participants become more sophisticated over time.

In addition, given Bursa Securities' intention to use the UMA query mechanism as a live investor alert system, we question the rationale of issuing UMA queries after the market has closed instead of during trading hours.

- c. Insider share transactions are the most common reason for most UMA queries, followed by new share issues. We recommend more intensive analyses of both areas to determine whether there are common "hidden" problems within Bursa Securities' trading environment concerning these two disclosure content categories.

In addition, given the sizable number of material disclosures concerning new order books among the AR, we suspect that some listed companies are taking advantage of the disclosure-timing leeway in Bursa Securities' listing rules to delay such announcements.⁴ In view of that likelihood, we recommend more stringent and thorough rules to close this gap.

- d. Unusual price surges have been the main cause of most UMA queries, with the exception of 2008, when very few queries were related to price surges—probably because 2008 was the year of the global financial crisis (GFC). We therefore recommend that more analysis be directed toward understanding the cause, development, and post-UMA query follow-up of UMAs related to price surges.
- e. Finally, we recommend that regulators examine the degree of pre-disclosure information leakage for all instances in the DefRes category given its complete dominance in all years. Although some of these instances might involve material disclosures that are unrelated to the UMA, it would still be worth the effort for regulators to take a closer look at this group given that the bulk of its material disclosures clusters around the day of the UMA query.⁵

4. We think there is a drawback in Bursa Securities' listing requirements in Chapter 9 ("Continuing Disclosure," paragraph 9.11), which makes no specific mention of how soon listed companies must respond to UMA queries. We recommend eliminating this leeway for listed companies by coming up with both a specific deadline for responses and a checklist for how to conduct an in-house investigation to ascertain the causes of UMAs.

⁴Under Bursa Securities' listing rules, a new order book is not required to be disclosed immediately upon its occurrence, subject to the company's readiness. Thus, listed companies may take advantage of this leeway to delay the dissemination of material information.

⁵Specifically, the total amount of material information disclosed within two trading days after the UMA query accounted for 55% (54 instances) of the total number of DefRes responses.

I. Introduction

A striking feature of the GFC was the speed with which market volatility spread throughout global bourses. According to Nissanke (2010), many stock exchanges witnessed their worst price drops in history, with an average magnitude of around 40%.

A fair and orderly trading environment maintains a vibrant and well-functioning securities market. In times of extreme price volatility, therefore, it is important that capital market regulators intervene to restore market order. Regulatory interventions typically come in the form of a break in or limit on market activity. It is hypothesized that through such interventions, additional material information will be disseminated more widely and equally, putting market participants in a better position to reconsider their trading decisions rationally in light of the new information.

With this in mind following the GFC, many bourses began to adopt additional market intervention measures, including trading halts, complete market closures, price limits, circuit breakers, and UMA queries. Whether such measures are effective in enhancing market efficiency and investor protection remains a difficult question to answer (Subrahmanyam 1994).

We began our research by looking at the common intervention measures adopted by regulators. We then turned our attention to the UMA query, a type of market intervention that is currently the subject of fierce debate between its supporters and critics (Yanuarti 2013). To allow for better analysis, we also examined the status of the UMA query mechanism within APAC, with a special focus on Malaysia.

We examined a total of 206 UMA queries issued by Bursa Securities. Through an intensive qualitative examination of every UMA query issued by Bursa Securities between January 2007 and July 2014, we attempted to gain insights into the following:

1. Is the UMA query mechanism accurate in identifying companies with either yet-to-be-disclosed or soon-to-be-disclosed material information?
2. Is the UMA query mechanism effective in getting investors' attention upon issuance of the query?

We then derived a number of policy recommendations from our findings and conclusions.

II. Common Types of Regulatory Intervention

Market intervention measures can be broadly divided into two major categories (Carvajal and Elliott 2009): discretionary and automatic. Discretionary market intervention measures are imposed by the bourse and/or regulator and are normally triggered by the following events:

1. Anticipation of the imminent release of material information
2. Abnormal pricing and/or transaction volume volatility
3. Suspicious insider trading and other manipulative activities
4. Issuers failing to comply with listing standards

Discretionary market intervention measures include trading halt, market closure, unusual market activity (UMA) query, and market alert:

1. *Trading halt* is a widely used method among most bourses to facilitate and enhance the dissemination of additional material information throughout the market. A less common trigger for trading halts is abnormal pricing and/or transaction volume volatility.
2. *Market closure* is a less widely used form of discretionary market intervention that is usually reserved for extreme economic, political, and social turmoil. Market closures occurred during the GFC (in October 2008) in Indonesia, Romania, and Peru. A lesser-known market closure took place at the Stock Exchange of Thailand in May 2010 when a fire broke out on the ground floor of the exchange.
3. *Unusual market activity (UMA) query* is what regulators initiate when there is abnormal pricing and/or transaction volume volatility. Listed companies that are issued UMA queries must respond within a short time whether or not they possess any undisclosed material information. A UMA query is made known to the public on the exchange's official website once it has been officially issued.
4. *Market alert* is what regulators also initiate when there is abnormal pricing and/or transaction volume volatility. A relative of the UMA query, the market alert mechanism is reserved for more severe cases of UMA. A market alert directly cautions investors to be on the lookout for any material development with respect to the targeted company. It also serves as a reminder for investors to continue using the fundamentals of listed companies during their investment assessments instead of relying on other sources of information.

Automatic market intervention measures are imposed in a nondiscretionary manner on the basis of pre-set parameters, which typically include percentage price change and share transaction volume. Automatic market intervention measures include price limits and circuit breakers:

1. *Price limits* are price bands around each stock that consist of both a ceiling and a floor to limit the daily movement of prices within a certain bandwidth. The primary purpose of this mechanism is to minimize extreme volatility in security prices as well as provide a signal to market participants of any potential imbalances in specific stocks. A secondary purpose is to prevent huge trading orders made in error from going through the dealing system. In some jurisdictions, including China and South Korea, trading is halted for a fixed duration once the price limit sets in. In other jurisdictions, including Japan, Malaysia, and Thailand, trading continues even when the price limit sets in but transactions cannot take place beyond the price limit.
2. *Circuit breakers* are used across the entire market to provide market participants an opportunity to sit back and reassess market conditions during steep market corrections. Many countries have a two- or three-tiered circuit breaker system (Harris 1998) in which each tier is triggered by a varying percentage of price decline. The duration of the halt varies for each tier of the circuit breaker system.

III. Relevance of the UMA Query Mechanism within APAC

Principal–agent conflicts are common among listed companies in Asian economies such as China, Hong Kong, Japan, South Korea, Malaysia, Singapore, and Thailand. According to Claessens et al. (2000) and Chen et al. (2005), these conflicts are partly due to the prevalence of family ownership where the controlling families have strong incentives to extract private benefits at the expense of minority shareholders (Yeung and Huang 2012).

A recent example of an embedded conflict of interest at a family-controlled business is the high-profile case of Sun Hung Kai Properties in Hong Kong at the end of 2014, in which the company's former co-chairman was imprisoned after being convicted of bribery. When both external auditing and the corporate governance framework failed to safeguard market integrity, we would expect a regulatory intervention.

According to Black (2001), regulatory enforcement is particularly effective at protecting investors from expropriation activities. In other words, filing lawsuits and imposing large punitive fines on offenders are effective in upholding market integrity. After all, punishing offenders with adequate penalties sends warning signals to would-be offenders that they are being monitored constantly. In the case of milder offenses, however, lawsuits and fines may be too harsh and inappropriate, whereas private warnings are too light and do not send any warning signal to the marketplace.

This is where the UMA query mechanism fits in. First, it highlights suspicious activities, through direct disclosure to the public, that the regulator deems not severe enough to warrant a formal investigation. Second, the UMA query mechanism serves as a platform for listed companies to account for abnormal market pricing and/or volume movement, which is akin to giving listed companies a second chance to come clean with any undisclosed material information or to reaffirm their original status of unawareness. Third, similar to lawsuits and fines, a UMA query sends warning signals to would-be offenders that regulators are closely monitoring their activities.

Against this background, we proceeded to analyze the effectiveness of UMA queries in the context of Bursa Securities from its inception in January 2007 to July 2014.

We chose Malaysia for its pioneer status in the adoption of the UMA query mechanism. Relative to both Indonesia and Singapore, where very similar mechanisms are in place, Malaysia has the longest history in terms of the mechanism's actual operation.

In Malaysia, UMA queries are issued by Bursa Securities to companies whose stock is experiencing unusual price movement and/or trading activity. Under Bursa Securities' listing requirements (Chapter 9, "Continuing Disclosure," paragraph 9.11), affected companies must respond to the UMA query on short notice to explain the reason for the UMA. The listed company must determine whether the UMA is due to

1. information that was recently disclosed,
2. material information that has yet to be disclosed, or
3. market rumors alone.

When the UMA is triggered by a probable leak of material information that has yet to be disclosed, there can be legal consequences for the affected entities and/or individuals. In Malaysia, under Section 188 of the Capital Markets and Services Act of 2007, anyone convicted of insider trading shall be punished by imprisonment for a term not exceeding 10 years and a fine of not less than 1 million Malaysian ringgit (RM).

In reality, most companies issue the standard reply, claiming they were unaware of any new corporate development on the day of the UMA query. Our study shows that in only a handful of instances did the listed companies reveal any detailed information on the day of the query.

Thus, it is difficult to determine the effectiveness of UMA queries simply by looking at how companies have responded to them. The post-UMA query behavior of prices needs to be considered as well. Moreover, with respect to the group of companies that eventually released material information following a UMA query, it is relatively difficult for market participants not to relate the previous UMA to front running and insider trading.

We examined Bursa Securities' experience in using the UMA query mechanism, as one of the many supervisory tools in the regulator's toolkit, to complement existing research and to enhance the effectiveness of financial market regulation.

IV. Purpose of the Research

A UMA query issued to a listed company functions as a signal that the regulator has detected an abnormal market activity. Abnormal market activities include

1. sudden price surges that cannot be fully explained by any publicly available information,
2. sudden price drops that cannot be fully explained by any publicly available information,
3. abnormal trading volume that cannot be fully explained by any publicly available information, and
4. any combination thereof.

Using the UMA query mechanism, regulators attempt to extract undisclosed material information from the company. At a minimum, regulators hope to alert investors to the probable presence of soon-to-be-disclosed material information. The expectation is that through the release and dissemination of this material information, investors will be in a better position to make investment decisions.

Although improvements in the disclosure of material information are desirable, the UMA query also has a side effect: Regardless of whether the queried company eventually releases additional material information, greater volatility in stock prices typically occurs immediately following most UMA queries (Christie, Corwin, and Harris 2002).

Given this background, our first purpose was to examine the accuracy of the UMA query mechanism in identifying companies with either yet-to-be-disclosed or soon-to-be-disclosed material information. This approach provided insights into whether having such additional information truly outweighs the cost of increased price volatility.

Encouraging investors to become more aware of previously undisclosed material information and of imminent material disclosures will enhance the decision-making process during their investment assessments.

In the long run, the UMA query mechanism will have positive implications for market integrity in that the queried companies will be scrutinized more closely by potential investors and will probably be allocated a higher cost of funding. Both outcomes will send a strong message to the rest of the listed companies that there are consequences for companies that cannot properly account for UMAs over the longer term.

But that was only half the job to be done. In order to observe the full impact of the UMA query on market integrity enhancement, we needed to examine how the market behaved both before and after the issuance of the query.

That led to our second purpose: How has the UMA query mechanism functioned as an alternative source of information for investors? Specifically, we were interested in finding out whether the UMA query is effective in getting investors' attention upon its issuance.

Finally, we also attempted to gain insights that could usefully inform our recommendations on ways to improve implementation of the UMA query. To achieve that goal, we carried out a thorough analysis of 206 UMA queries issued by Bursa Securities between January 2007 and July 2014.

V. Description of the Data

Before analyzing the 206 UMA queries issued by Bursa Securities over January 2007–July 2014, we collected publicly available information from Bursa Securities’ listing circulars,⁶ a Bloomberg Terminal, and Yahoo Finance.⁷

We first downloaded the 206 UMA query announcements. We also downloaded, from Bursa Securities’ listing circulars, the corresponding responses from the queried companies and any follow-up material disclosures announced within the subsequent seven trading days.

We examined the UMA queries to determine what triggered them as well as the date and time of each query. We also examined the corresponding responses from the queried companies and any follow-up material disclosures to determine the style of each response.

We categorized the four response styles as follows:

1. Replied “aware” and disclosed material information
2. Replied “unaware” but released material information within the next seven trading days
3. Replied “unaware” but released material information on the day of the query
4. Replied “unaware” with no follow-up disclosure of material information

For those instances of disclosure of material information, we categorized the content of each disclosure.

We then downloaded, from Yahoo Finance, the daily opening, high, low, and closing prices from one month before to one month after the date of each query. We used these data to analyze price behavior both before and after each UMA query. We also downloaded, from a Bloomberg Terminal, market capitalization and industry classification data. We examined a total of 37,904 raw data points.⁸ We then processed all the downloaded raw data to generate an Excel spreadsheet with 9 fields and 206 entries and studied the resulting 1,854 data points.

During the processing of the secondary data, we derived a threshold of $+\/- 5\%$, measured by the magnitude of the unusual price movement of the particular UMA, which we used to categorize post-UMA price behavior. Our rationale for doing so is as follows:

⁶See www.bursamalaysia.com/market/listed-companies/company-announcements/#/?category=LC&sub_category=all&alphabetical=All.

⁷See <https://finance.yahoo.com>.

⁸The 37,904 raw data points comprise 1,030 entries from Bursa Securities’ public domain, 36,256 price entries from Yahoo Finance, and 618 data points from a Bloomberg Terminal.

1. The average daily price fluctuation⁹ of the Kuala Lumpur Stock Exchange Index during the study period¹⁰ was 0.579%.
2. The average market beta of the companies in our study was 1.73 over the same period.
3. Multiplying these two figures (0.579% and 1.73) gives us approximately 1%.
4. This result implies that the daily price fluctuation of an average stock in our study should be around 1% under normal circumstances.
5. In addition, we observed that all the unusual price movements queried by Bursa Securities were above 20%.¹¹
6. We used these two pieces of information to derive a threshold to determine what would be considered a significant price fluctuation (i.e., beyond what is deemed normal).
7. Because a 20% stock price movement is the minimum magnitude of any price-related UMA, we can reasonably expect 5% of any such unusual price movement to be equal to or greater than 1% of that particular stock price ($5\% \text{ of } 20\% = 0.05 \times 20 = 1\%$).

This process thus gave us a value of 5% (taken as a percentage of the unusual price movement) as a significant movement beyond what is deemed normal.

In addition, for purposes of our study, we only considered material information released within seven trading days after the UMA query. We assumed that any disclosure beyond that time would be too distant to be regarded as having been influenced by the UMA query.

To validate this assumption, we began our study with a longer period during preliminary analysis to include all material disclosures within 10 trading days after the UMA query. We observed that more than 90% of the material disclosures occurred within five trading days after the query.

Therefore, we adopted the seven trading days after the UMA query as the threshold period to ensure that it was long enough to cover most material disclosures that were probably influenced by the query. This approach also ensured that it was short enough for most of the material disclosures that were *not* influenced by the query to be filtered out.

Exhibit 1 provides a detailed description of the dataset that we used to conduct our qualitative analysis.

⁹We obtained this figure by taking a simple average of daily price changes after making all the negative entries positive. Because we were interested in the amount of fluctuation regardless of polarity, this additional step was essential to avoid the value-dampening effect of taking a simple average across a mix of positive and negative values.

¹⁰Our study period was from 3 January 2007 to 31 July 2014.

¹¹Almost all price movements that triggered a UMA query experienced a pre-UMA query price change of at least 20% (based on daily closing prices). Although two instances did not rise to that level, when the intra-day price extremes were considered, this 20% criterion still prevailed.

Exhibit 1. Detailed Description of the Processed Dataset

Data Field	Description
Company name	Name of the listed company involved in the UMA query
Style of response to UMA query	<p>Disclosure Style Category 1: affirmative response—companies respond “aware” and release material information to explain the UMA on the day of the query</p> <p>Disclosure Style Category 2: deferred response—companies respond “unaware” on the day of the query but eventually release material information within the next seven trading days</p> <p>Disclosure Style Category 3: delayed response—companies respond “unaware” but release material information on the day of the query</p> <p>Disclosure Style Category 4: negative response—companies respond “unaware” on the day of the query and do not release any material information within the next seven trading days</p>
Day count of disclosure	The day count of disclosure of material information under Disclosure Style Category 2, ranging from one to seven trading days after the query
Year of UMA query	The calendar year of the UMA query
Date of UMA query	The specific date of the UMA query
Time of day of UMA query	<p>Before open: before 8:30</p> <p>Pre-open: 8:30–9:00 and 14:00–14:30</p> <p>Trading hours: 9:00–12:30 and 14:30–16:45</p> <p>Lunch: 12:30–14:00</p> <p>Pre-close: 16:45–16:50</p> <p>Trading at last: 16:50–17:00</p> <p>After close: after 17:00</p>
Content category of disclosure	<p>Board restructuring</p> <p>Change of auditor</p> <p>Change of sponsor</p> <p>Clarification of news from media</p> <p>Normal result release</p> <p>Corporate acquisition</p> <p>Corporate divestment</p> <p>Insider share transaction</p> <p>Listing status compliance</p> <p>Material litigation</p> <p>Media and research report</p> <p>Miscellaneous</p> <p>New order book</p> <p>New share issue</p> <p>Potential fraud and financial difficulty</p> <p>Related-party transaction</p> <p>Share buyback</p> <p>Takeover</p>

(continued)

Exhibit 1. Detailed Description of the Processed Dataset (continued)

Data Field	Description
Type of UMA query trigger	Unusual price surge only Unusual price surge and transaction volume Unusual price drop only Unusual price drop and transaction volume Unusual transaction volume only
Type of post-UMA query price behavior	Case 1a: overcorrection—final price corrects beyond pre-UMA level by more than 5% of the unusual price movement after seven trading days Case 1b: full reversion—final price stabilizes around pre-UMA level $+\/- 5\%$ of the unusual price movement after seven trading days Case 1c: partial correction—final price corrects beyond UMA query level by more than 5% of the unusual price movement but remains more than 5% from the pre-UMA level after seven trading days Case 2: stagnant—final price stabilizes around UMA query level $+\/- 5\%$ of the unusual price movement after seven trading days Case 3a: moving beyond—final price continues beyond UMA query level by more than 5% of unusual price movement after seven trading days without any price correction at the point of the UMA query Case 3b: moving beyond but with a small initial correction—final price continues beyond UMA query level by more than 5% of unusual price movement after seven trading days with a price correction at the point of the UMA query Case 4: no stabilization—final price fails to stabilize after seven trading days

VI. Research Design

Our research design consisted of three levels of dataset analysis: an overall analysis, a segmental analysis, and a year-by-year analysis.

Level 1: Overall Analysis of the Dataset

We first looked at the overall picture of how the affected companies have responded to UMA queries, how the number of UMA queries has varied over the years, the time of day in which most queries occurred, and the major triggers of the queries.

1. *Analyzing the behavior of the respondents when material information is released.* The objective here was to gain a deeper understanding of how companies reacted when issued a UMA query. We accomplished this objective by analyzing the responses from queried companies and segregating the responses into four distinct categories:
 - a. Disclosure Style Category 1: the AR (affirmative respondents) group, comprising companies that responded on the day of the query with material information.¹² Information was considered material if it was logically expected to influence the decision-making process of a typical investor.
 - b. Disclosure Style Category 2: the DefRes (deferred respondents) group, comprising companies that responded “unaware” on the day of the query but eventually released material information within the next seven trading days.¹³
 - c. Disclosure Style Category 3: the DelRes (delayed respondents) group, comprising companies that responded “unaware” and released material information on the day of the query.
 - d. Disclosure Style Category 4: the NR (negative respondents) group, comprising companies that responded “unaware” on the day of the query and did not release any material information within the next seven trading days.¹⁴

We stored the relevant information for this analysis in the “Style of Response to UMA Query” field in our database.

In order to gauge the degree to which the UMA query mechanism was successful in spotting companies with soon-to-be-disclosed material information, we used a proxy measure—represented by the AR, DefRes, and DelRes groups, in which UMA queries were followed by the disclosure of material information. We computed this measure as the number of occurrences relative to the total number of price-triggered UMA queries.

¹²The material information cited by the queried companies as the reason for the UMA may or may not be the underlying reason. It merely reflects the opinion of the respondents.

¹³It is possible that the material information released within the seven trading days after the query might not be related to the UMA at all. In other words, the timing proximity might be a mere coincidence, and the queried company might have intended to release the information anyway, with or without the UMA query.

¹⁴It is possible that the queried companies did not possess any material information in the first place. In other words, we cannot interpret the absence of a material information disclosure as an intention to withhold information.

To gauge the degree to which the UMA query mechanism was unsuccessful in spotting companies with soon-to-be-disclosed material information, we used the data from the NR group as a proxy measure. As before, we computed this measure as the number of occurrences relative to the total number of price-triggered UMA queries.

By comparing the two percentages, we hoped to reach a conclusion on whether the benefit for investors of identifying companies with soon-to-be-disclosed material information truly outweighs the cost of greater price volatility, given that both are inevitable outcomes of the UMA query mechanism.

2. *Analyzing the fluctuations in the number of UMA queries over time.* Our purpose here was to understand how the number of UMA queries has changed over time. Assuming the same set of trigger criteria over the entire study period, we hypothesized that a rise in the number of UMA queries over time would reflect a greater need for additional regulatory interventions.¹⁵

The data for this analysis came from the UMA queries over 2007–2014, stored in the “Year of UMA Query” field.

3. *Analyzing the timing distribution of the UMA queries.* By analyzing the timing distribution of the UMA queries, we sought to determine the amount of time available for investors to retrieve and digest the content of UMA queries.

We stored the relevant data for this analysis in the “Time Period of UMA Query” field in our database, categorizing the UMA queries into seven mutually exclusive time segments on the day of release:

- a. Before market open: before 8:30, when the market is closed.
- b. Pre-open: during the morning session of 8:30–09:00 and during the afternoon session of 14:00–14:30, when participants can observe changes in market depth even though trading is temporarily suspended.
- c. Trading hours: the normal trading hours, which are split into two segments—the morning session of 9:00–12:30 and the afternoon session of 14:30–16:45.
- d. Lunch: 12:30–14:00, when trading is temporarily suspended.
- e. Pre-close: 16:45–16:50, when orders are still being accepted and automatically updated in the order book but do not immediately give rise to trades. A theoretical closing price (TCP) is dynamically calculated on the basis of all orders entered during this time span. Only TCP orders are eventually matched and give rise to trades.
- f. Trading at last: 16:50–17:00, which is the last opportunity to close a position at a fixed price. If no TCP was generated during the pre-close period, the daily closing price will be the last known traded price.

¹⁵Additional regulatory interventions could include escalating the UMA query to a market alert, more-thorough investigations to shed more light on the real reasons behind UMAs, temporary trade suspensions when necessary to facilitate background investigations, and filing lawsuits against individuals who have displayed a strong tendency to be entangled in multiple instances of UMAs (based on circumstantial evidence).

- g. After close: after 17:00, when the market is closed.

We hypothesized that if the majority of UMA queries were released during trading hours, investors who closely monitor Bursa Securities' listing circulars would be in a better position to profit or, at a minimum, lower their losses on the likely price movement following the query compared with those who do not. This hypothesis may have practical implications for the effectiveness of the UMA query mechanism in functioning as an alternative source of information to alert investors to potential market misconduct.

4. *Analyzing the causes of UMA queries.* Because UMA queries can be triggered by price surges, price plunges, abnormal transaction volumes, or some combination thereof, we sought to determine the most common trigger (if any) of UMA queries. We grouped the causes of UMA queries into the following categories:
 - a. Price surge only
 - b. Price surge with abnormal transaction volume
 - c. Price plunge only
 - d. Price plunge with abnormal transaction volume
 - e. Abnormal transaction volume only

We stored this information in the "Type of UMA Query Trigger" field in our database.

Level 2: Segmental Analysis of the Dataset

We then drilled down one level to look at the content categorization of material disclosures that took place within seven trading days after the UMA query. We examined how prices behaved throughout the seven trading days after the query, looking for instances of both price surges and price plunges. Finally, we also looked at the distribution of the material disclosures across the seven trading days after the query.

1. *Content categorization of the material information.* Our objective here was to categorize the information disclosed by the companies to enable a more granular analysis of the data. Of the 206 UMA queries, 18% of the responses (37) fell under Disclosure Style Category 4. The companies in this group, which we labeled the negative respondents, replied that they were unaware of any material information and did not disclose any material information within the seven trading days after the UMA query. We grouped the remaining 169 responses into the content categories shown in **Exhibit 2**.

With this categorization exercise, we hoped to determine the most common content categories for material information disclosures, which might point us to the root causes of the UMAs.¹⁶

¹⁶The material disclosures in our study may or may not be related to or triggered by any UMA query. Nevertheless, given the disclosures' timing proximity to UMA queries, it would be useful to examine the weights among the various content categories.

Exhibit 2. Content Categories of Disclosed Material Information

Board restructuring	Media and research report
Change of auditor	Miscellaneous
Change of sponsor	New order book
Clarification of news from media	New share issue
Corporate acquisition	Normal result release
Corporate divestment	Potential fraud and financial difficulty
Insider share transaction	Related-party transaction
Listing status compliance	Share buyback
Material litigation	Takeover

We conducted a similar analysis at the segmental level for

- a. Disclosure Style Category 1 (AR),
- b. Disclosure Style Category 2 (DefRes), and
- c. Disclosure Style Category 3 (DelRes).

2. *Analysis of post-UMA query price movement.* By observing how prices behaved after UMA queries, we sought to understand the influence of the UMA query on market behavior. For this purpose, we categorized post-UMA price movement into six “cases,” allowing for both price surges and price plunges. The relevant field in our database was “Type of Post-UMA Query Price Action.”

For price surges, the six groups were as follows:

Case 1a: Price fell back lower than pre-UMA level. Final price dropped beyond pre-UMA level by more than 5% of initial price surge after seven trading days.

Case 1b: Price fell back to pre-UMA level. Final price stabilized around pre-UMA level \pm 5% of initial price surge after seven trading days.

Case 1c: Price corrected but did not quite reach pre-UMA level. Final price dropped beyond UMA query level by more than 5% of initial price surge but remained higher than pre-UMA level by more than 5% of initial price surge after seven trading days.

Case 2: Status quo. Final price stabilized around UMA query level \pm 5% of initial price surge after seven trading days.

Case 3a: Price rose to a higher level. Final price rose beyond UMA query level by more than 5% of initial price surge after seven trading days without any price correction at the point of the UMA query.

Case 3b: Price corrected slightly before rising to a higher level. Final price rose beyond UMA query level by more than 5% of initial price surge after seven trading days.

For price plunges, the six groups were as follows:

Case 1a: Price rose back higher than pre-UMA level. Final price rose beyond pre-UMA level by more than 5% of initial price drop after seven trading days.

Case 1b: Price rose back to pre-UMA level. Final price stabilized around pre-UMA level $+\/- 5\%$ of initial price drop after seven trading days.

Case 1c: Price corrected but did not quite reach pre-UMA level. Final price rose beyond UMA query level by more than 5% of initial price drop but remained lower than pre-UMA level by more than 5% of initial price drop after seven trading days.

Case 2: Status quo. Final price stabilized around UMA query level $+\/- 5\%$ of initial price drop after seven trading days.

Case 3a: Price dropped to a lower level. Final price dropped beyond UMA query level by more than 5% of initial price drop after seven trading days without any price correction at the point of the UMA query.

Case 3b: Price corrected slightly before dropping to a lower level. Final price dropped beyond UMA query level by more than 5% of initial price drop after seven trading days.

With this categorization exercise, we hoped to determine the percentage weights of instances of a price correction, a price stabilization, or a continuation of price momentum after the UMA query.

Instances of post-UMA query price corrections (Cases 1a, 1b, and 1c) reflect market participants' dampened sentiments regarding pre-UMA query market price surges or plunges.

Instances of post-UMA query price stabilizations (Case 2) probably reflect a change in market participants' sentiments to a more conservative stance. In other words, investors have reconsidered their convictions on the basis of the UMA query, which explains the drop in price momentum.

Instances where the market largely ignored the UMA query and continued its upward or downward movement (Cases 3a and 3b) may reflect market participants' strong belief in certain market rumors and/or undisclosed material information concerning the queried company's prospects.

In terms of the UMA query's function as an alternative source of information to alert investors to potential market misconduct, we interpreted the first two scenarios¹⁷ as indicating that investors are taking note of the UMA query and reacting to it and interpreted the third scenario as indicating that investors are choosing to ignore the UMA query.

¹⁷Given that prices actually corrected after the UMA query, the first scenario provides stronger evidence than the second scenario that investors are considering the messages sent by the UMA query.

3. *Day of disclosure of material information under DefRes.* For this analysis, we classified the 99 disclosures under Disclosure Style Category 2 on the basis of the day of disclosure. Using data from the “Day of Additional Disclosure” field in our database, we sought to find out which days were most active for the disclosure of additional material information. Material information released closer to the day of the UMA query is likely to be influenced by the UMA query to a larger extent than information released later. This measure can provide evidence on how seriously the listed companies are taking UMA queries.

Level 3: Year-by-Year Analysis of the Dataset

We then analyzed how post-UMA query behavior regarding information disclosure has evolved over the years by looking at the distribution of material disclosures with respect to both the day of the release and the percentage of each response style for each year. We also sought to determine whether the dominant type of UMA query trigger has remained the same over time.

1. *Yearly distribution of disclosures with respect to day of disclosure under Disclosure Style Category 2.* By mapping the day of disclosure to the year of disclosure, we attempted to determine whether the delay in material information disclosures has improved or worsened over time.
2. *Yearly distribution of disclosures with respect to style of response.* In this analysis, we examined the changes in the proportions of the four response styles over time. We calculated the percentage breakdown of the number of responses under each style (Disclosure Style Categories 1, 2, 3, and 4) for each year. We also plotted the number of responses for each disclosure style over time. The first process enabled us to monitor any shift in the disclosure styles over time, while the second process highlighted any changes in the number of responses under each of the four disclosure styles.
3. *Yearly distribution of UMA queries with respect to triggers.* In this analysis, we sought to examine the changes in the proportions of the various triggers of UMA queries over time. First, we attempted to look for the most common type of trigger (if any), observing how the absolute number of instances for each type of trigger varied over time. Second, we calculated the absolute number of instances for each type of trigger for each year.

In doing so, we hoped to gain insight into any shifts in the types of triggers over time. In other words, the characteristics of a capital market dominated by price-plunge UMAs should differ from those of a capital market dominated by price-surge UMAs. And different market characteristics would imply that varying underlying dynamics are driving the UMAs.

VII. Interpretation of the Results

In this section, we present our interpretation of the results of our overall analysis, segmental analysis, and year-by-year analysis.

Overall Analysis

1. *Material information release behavior.* As shown in **Table 1**, DefRes, at 48% (99 responses), accounted for the majority of responses, whereas AR came in second, at 22% (46 responses). Together with the 12% (24 responses) of DelRes, a total of 169 queried companies eventually released material information, accounting for 82% of the entire population of respondents.

We therefore conclude that the UMA query mechanism has been relatively accurate and useful in detecting instances of both yet-to-be-released and soon-to-be-released material information.¹⁸

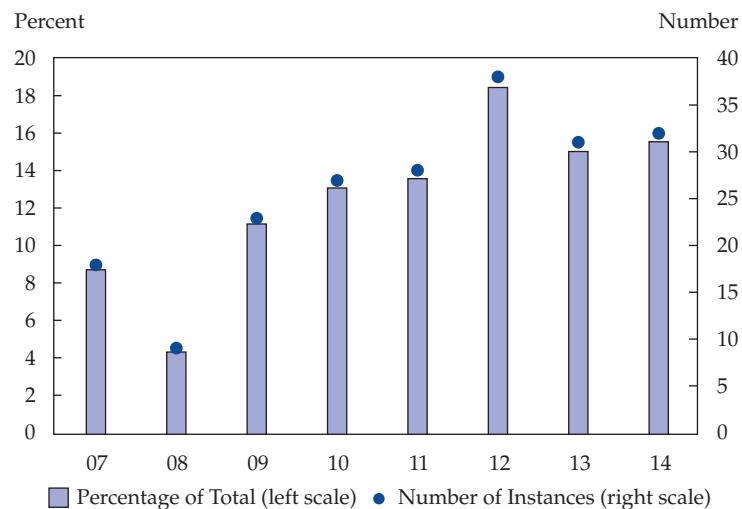
2. *Yearly distribution of UMA queries.* Of the 206 UMA queries issued by Bursa Securities between January 2007 and July 2014, around 50% were issued from 2012 to July 2014. As can be seen in **Figure 1**, there was a gradual increase in the number of UMA queries over time. From a low of 9 queries in 2008, the number of queries rose to 23, 27, 28, and a peak of 38 in 2009, 2010, 2011, and 2012, respectively. There was a slight drop to 31 in 2013, but the upward momentum was sustained in 2014, when 32 queries were issued by the end of July.¹⁹

Table 1. Numerical and Percentage Breakdown of Disclosure Styles

Disclosure Style	No. of Responses	% of Total
Category 1: Affirmative respondents (AR)	46	22.3
Category 2: Deferred respondents (DefRes)	99	48.1
Category 3: Delayed respondents (DelRes)	24	11.7
Category 4: Negative respondents (NR)	37	18.0

¹⁸Even though only 22% of the respondents (AR) replied “aware” with additional material information, this low percentage of positive responses cannot be taken as a failure of the UMA query mechanism in extracting information from queried companies. It is possible that most of the queried companies were genuinely unaware of any additional material information. But we also cannot interpret the 82% of respondents that released material information on the day of the query or within the next seven trading days as an indication of the UMA query mechanism’s success in extracting information from queried companies, because the eventual release of additional material information might not be a direct result of the UMA query. We can only objectively test for the accuracy of the UMA query mechanism in highlighting listed companies with soon-to-be-released material information.

¹⁹Our data cutoff was 1 August 2014, so we did not include any data point later than 31 July 2014. According to the latest information from Bursa Securities, 51 UMA queries were issued in 2014. Part of the reason for this rise in the number of UMA queries from 2013 to 2014 is the rise in equity market volatility, both domestically and globally.

Figure 1. Yearly Distribution of UMA Queries

Note: The year 2014 covers only the first seven months.

The rising trend in the number of UMA queries reflected a gradual increase in the number of abnormal market activities on Bursa Securities. Hence, despite the fact that the UMA query has been in place for more than seven years, there is a lack of evidence of the effectiveness of the UMA query mechanism in encouraging listed companies to do a better job of dealing with market rumors and/or handling material information disclosures over time.

3. *Distribution of UMA queries across release times.* In terms of the release times of UMA queries, more than 50% (113) were released during trading hours (**Figure 2**). Another 24% (49) were issued after market closure. That the bulk of the queries were released during trading hours is a strong indication of Bursa Securities' intent to use the UMA query mechanism as a real-time investor alert system.

Therefore, investors who closely monitor Bursa Securities' listing circulars would probably be in a better position to react to the likely price movement following the UMA query compared with those who do not.

4. *Causes of UMA queries.* As shown in **Figure 3**, close to 50% (98) of the UMA queries were related to a price surge with abnormal transaction volume, whereas 27% (55) were related to a price surge only. Together, they account for about 74% of the queries, suggesting that market price surges have been the main issue that Bursa Securities has been trying to address.²⁰

²⁰In our analysis, daily market return seems to have been fully accounted for by the UMA query mechanism in that even after factoring in market return volatility, all price-related UMAs' magnitudes have exceeded 18.5% of the share price, using either intra-day or end-of-day pricing data.

Figure 2. Distribution of UMA Queries across Release Times

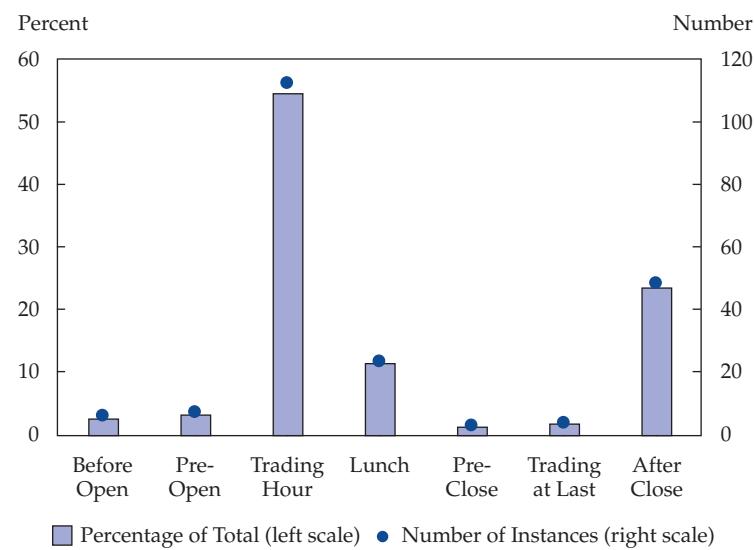
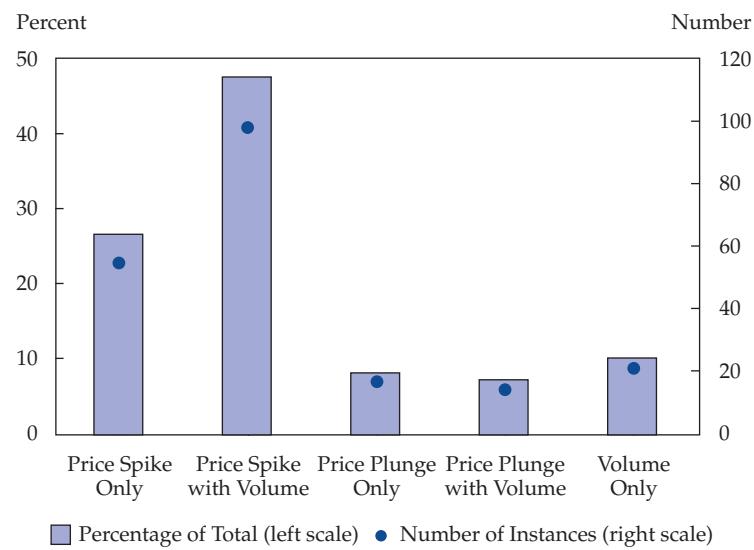
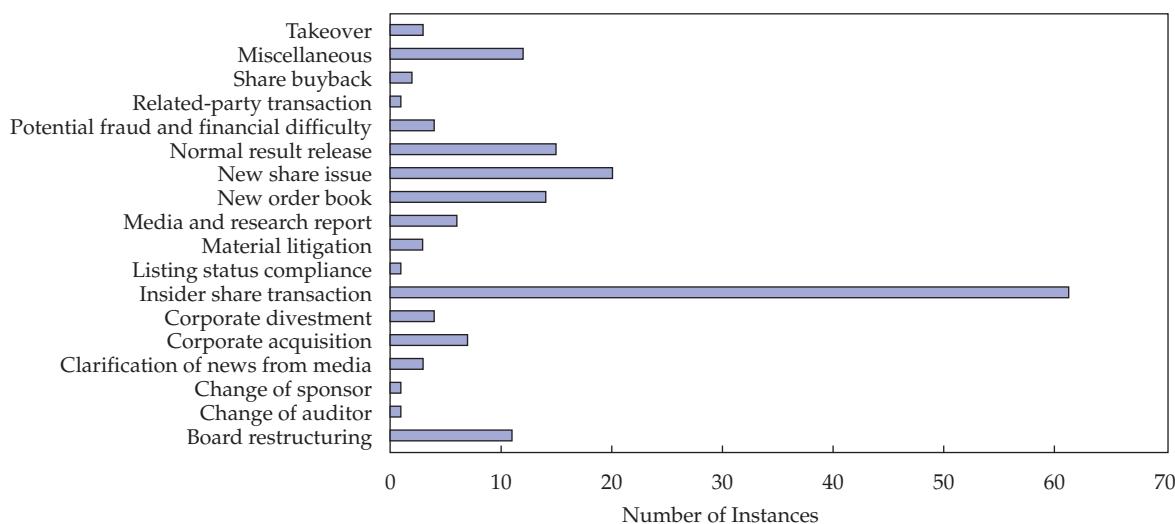


Figure 3. Causes of UMA Queries



Segmental Analysis

1. *Distribution of content categories of material information disclosures.* For the 206 UMA queries, 18% (37) of the responses belonged to Disclosure Style Category 4 (the NR group, with no follow-up of material information disclosure within the seven trading days after the UMA query). For the remaining 169 responses, the distribution of material information disclosures across the various content categories can be seen in **Figure 4**.

Figure 4. Distribution of Content Categories of Material Information Disclosures

As can be observed from Figure 4, insider share transaction²¹ was the most dominant content category, followed by new share issue. Material information disclosures in the insider share transaction category include share purchase and/or disposal by top management, directors, and major shareholders. All the insider share transactions in our study had to be disclosed immediately upon their occurrence.

For Disclosure Style Category 1—the 46 AR companies that responded affirmatively to the UMA query and released additional material information on the day of the query—the distribution across the various content categories is illustrated in **Figure 5**.

Material information about new order books²² and insider share transactions together accounted for 43.5% (20) of the responses. Given that a new order book is generally regarded as a positive development, the queried company would be expected to disclose this information as soon as possible. We therefore question the underlying reason for not doing so.

For Disclosure Style Category 2—the 99 DefRes companies that responded “unaware” to the UMA query but went on to release additional material information within the next seven trading days—the distribution across the various content categories is shown in **Figure 6**.

Again, both insider share transaction and new share issue took the top two spots, accounting for 40.4% (40) and 14.1% (14) of the responses, respectively. The number of responses

²¹Under Bursa Securities’ listing rules, both insider share transactions and new share issues must be disclosed immediately upon their occurrence. Note, however, that both such events in our study may be unrelated to their particular UMA query. We included them because of their timing proximity to the UMA queries.

²²“New order book” refers to a manufacturing contract, order, or project secured by the listed company that is expected to have a significant positive impact on its future revenue. Under Bursa Securities’ listing rules, a new order book is not required to be disclosed immediately upon its occurrence, subject to the company’s readiness. Therefore, listed companies may take advantage of this leeway provided by Bursa Securities’ listing rules to delay the dissemination of material information, possibly even beyond the seven trading days after the UMA query.

Figure 5. Distribution of Content Categories for Disclosure Style Category 1 (AR)

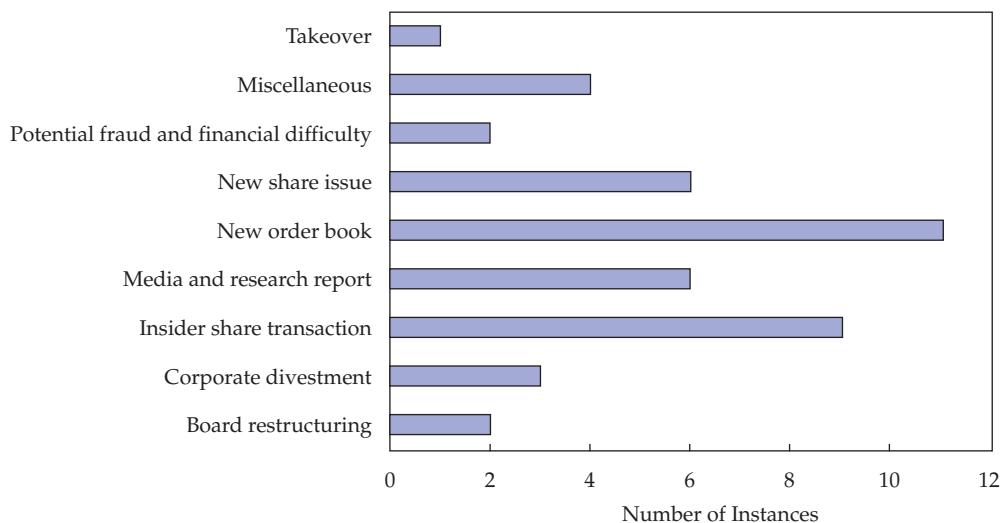
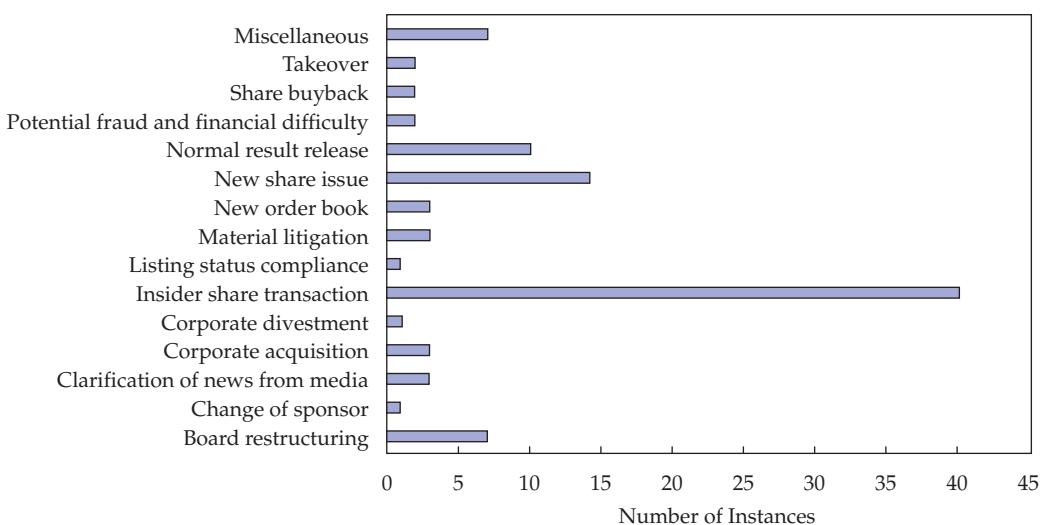


Figure 6. Distribution of Content Categories for Disclosure Style Category 2 (DefRes)



under the insider share transaction category represents slightly less than two-thirds of all the responses related to insider share transaction. In other words, most of the insider share transaction-related UMA queries are accounted for within DefRes.

Even though we could not fully attribute the UMA to an insider share transaction or a new share issue, the timing proximity between the UMA and the two events led us to ponder whether there was any leak of an intended insider share transaction or new share issue prior to their occurrence.

For Disclosure Style Category 3—the 24 DelRes companies that responded “unaware” to the UMA query but went on to release additional material information on the day of the query—the distribution across the various content categories is depicted in **Figure 7**. Once again, insider share transaction continues to dominate, with a 50% (12 responses) share.

2. *Post-UMA query price movement analysis.* For the 153 price-surge-related UMA queries, the post-query price movement distribution is shown in **Table 2**.

As can be seen in Table 2 and **Figure 8**, 66% (101) of the price-surge-related UMA queries saw some degree of post-query price correction. This finding implies that the majority of market participants during price-surge-related UMA queries have probably considered the embedded alert signals and reacted accordingly.

Figure 7. Distribution of Content Categories for Disclosure Style Category 3 (DelRes)

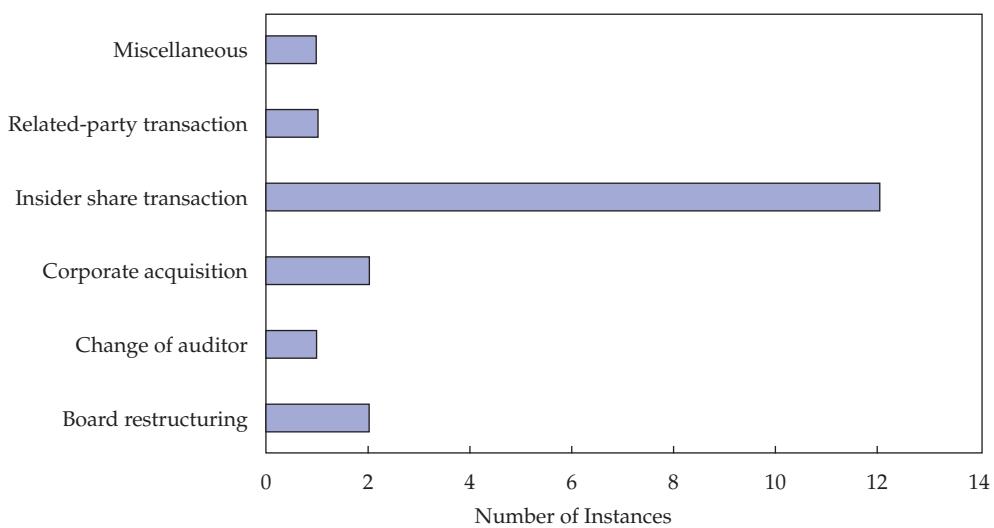
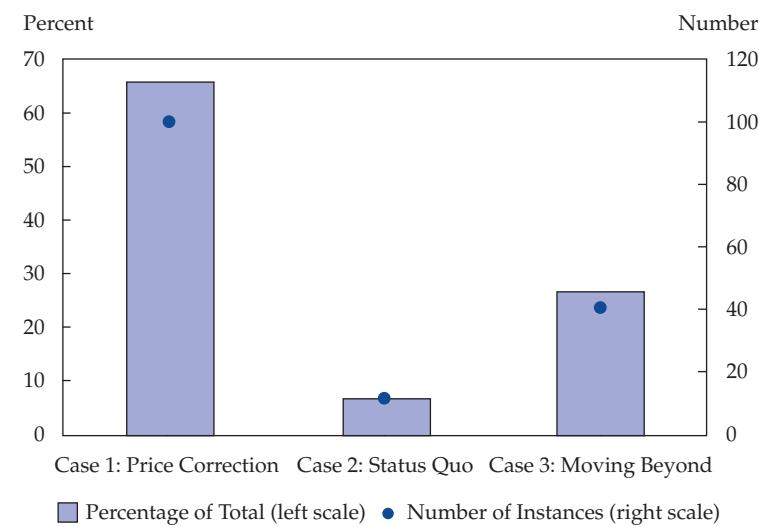


Table 2. Price Movement Distribution after Price-Surge-Related UMA Query

Category	No. of Queries	% of Total
Case 1: Price correction	1a	15.0
	1b	4.6
	1c	46.4
Case 2: Status quo	11	7.2
Case 3: Moving beyond	25	16.3
	16	10.5

Figure 8. Price Movement Distribution after Price-Surge-Related UMA Query (Aggregated)



This finding is partial evidence that the UMA query mechanism has functioned effectively as an alternative investor alert system during price-surge-related queries.²³ In other words, investors have probably contemplated the UMA query and become more reluctant to continue buying because they suspect that the upward price movement is artificial.

For the 32 price-plunge-related UMA queries, the post-query price movement distribution is shown in **Table 3**.

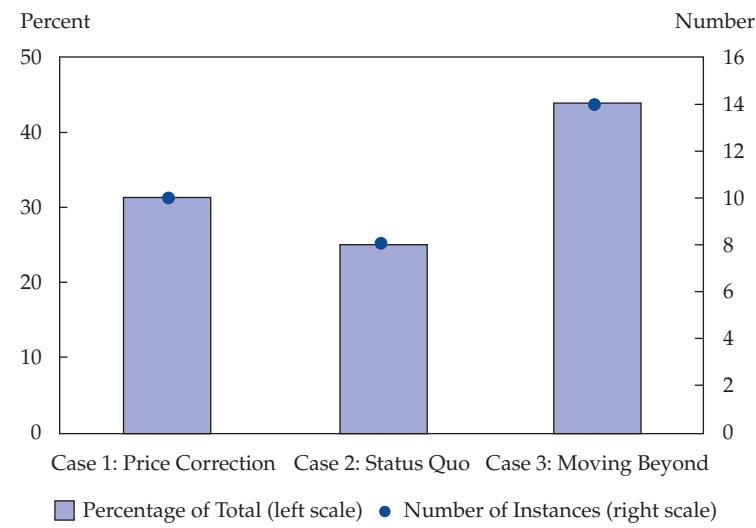
As shown in **Figure 9**, during 43.8% (14) of the UMA queries, market participants ignored the query and continued to drive prices to a lower level. During 25% (8) of the queries,

Table 3. Price Movement Distribution after Price-Plunge-Related UMA Query

Category	No. of Queries	% of Total
Case 1: Price correction	1a	2
	1b	1
	1c	7
Case 2: Status quo		8
Case 3: Moving beyond	3a	11
	3b	3

²³There is no concrete evidence to indicate that all price-surge UMAs and price-plunge UMAs are the result of market euphoria and unwarranted market pessimism, respectively. We are merely attempting to examine how market participants have reacted to UMA queries. More specifically, we are gauging whether market participants are seriously considering the UMA query or completely ignoring it in making their trading and investment decisions.

Figure 9. Price Movement Distribution after Price-Plunge-Related UMA Query (aggregated)



market participants pulled back from the selling avalanche and adopted a wait-and-see approach. For the remaining 31.3% (10 queries), market participants became rejuvenated after digesting the embedded signals in the query and pushed prices up and beyond the pre-UMA query level.

We therefore conclude that in terms of functioning as an alternative investor alert system during price-plunge-related queries, the UMA query mechanism is relatively ineffective.

3. *Day of disclosure distribution for Disclosure Style Category 2.* This group includes companies that responded “unaware” on the day of the UMA query but later released material information within the next seven trading days. The day of disclosure distribution for this group is illustrated in **Figure 10**.

Throughout the seven and a half years, there was only one instance of information being released on the seventh day. Most of the disclosures of material information occurred on the first day or second day. The number of disclosures on these two days comes to around 55% (54) of the total number of DefRes disclosures.

This relative clustering of material information disclosures around the day of the UMA query lends support to the intuition that the UMA query mechanism has compelled the disclosure of information with relative success. We interpret this finding as indicating that UMA queries are being taken relatively seriously by most of the queried companies.

Year-by-Year Analysis

1. *Yearly distribution of day of disclosure.* As can be seen in **Figure 11**, during 2007 and 2008, none of the material information disclosures occurred later than the fourth trading day after the UMA query. Most additional material information was released within two

Figure 10. Day of Disclosure Distribution for Disclosure Style Category 2

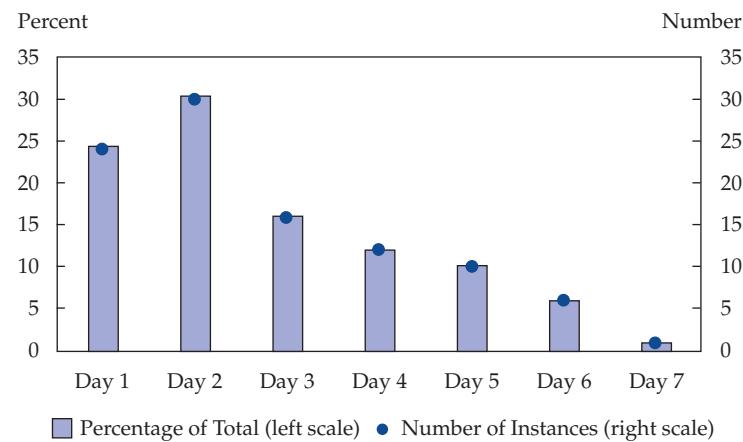
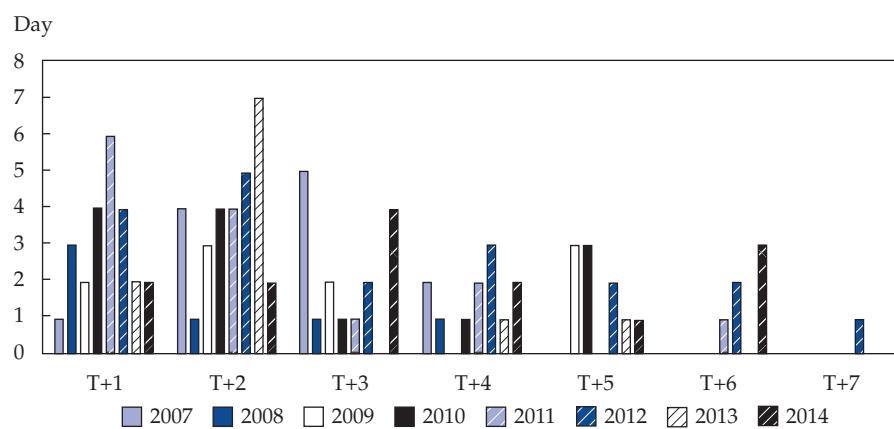


Figure 11. Yearly Distribution of Day of Disclosure

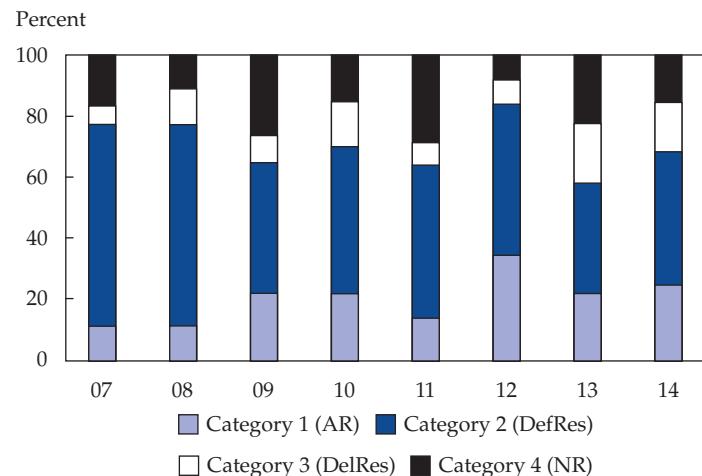


trading days after the query. Information disclosure on the seventh trading day was rare—it occurred only once (in 2012) over the entire study period.

During the first seven months of 2014, however, there was a spike in the number of material disclosures on the third and sixth trading day after the UMA query. But given the relatively small number of disclosures for each year, any year-for-year comparative analysis would incur a high degree of outlier risk. Thus, there is a lack of evidence to establish the exact effect of the UMA query mechanism on the delay in material disclosures over time.

2. *Yearly percentage distribution of four disclosure style categories.* Consistent with our overall analysis, a majority of the companies in every year (as seen in **Figure 12**) responded “unaware” on the day of the UMA query but eventually released additional material information within one to seven trading days after the query. In other words, the DefRes responses dominated in all years.

Figure 12. Yearly Percentage Distribution of Four Disclosure Style Categories



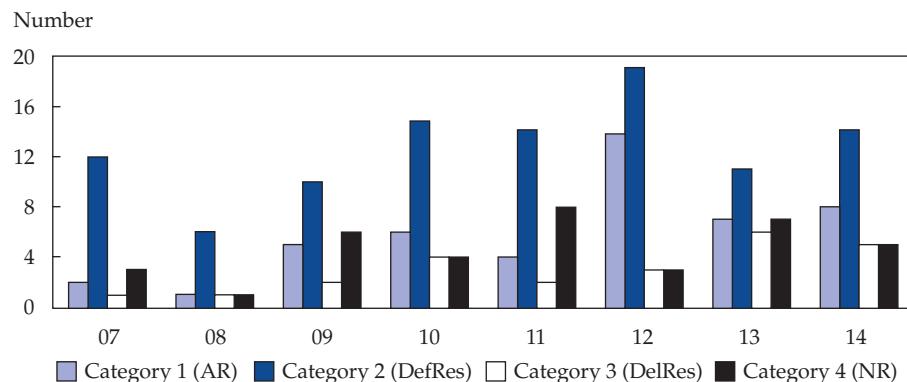
Note: The year 2014 covers only the first seven months.

Over time (see **Figure 13**), there was some volatility in the number of responses in the AR and DefRes groups. The number of yearly responses in both categories hit a peak in 2012 before dropping off in 2013. As for DelRes and NR, the number of responses remained relatively stable at fewer than eight in each year.

3. *Yearly distribution of UMA queries with respect to triggers.* With the exception of 2008, the majority of UMA queries were triggered by a price surge, with the distribution shown in **Figure 14**.

More precisely, the majority of UMA queries were triggered by a combination of price surge and transaction volume, with the distribution shown in **Figure 15**.

Figure 13. Yearly Distribution of Number of Responses across Four Disclosure Style Categories



Note: The year 2014 covers only the first seven months.

Figure 14. Yearly Distribution of UMA Queries across Three Categories of Triggers

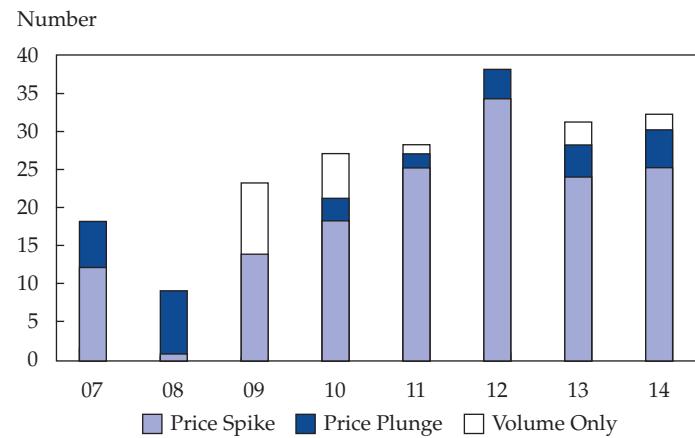
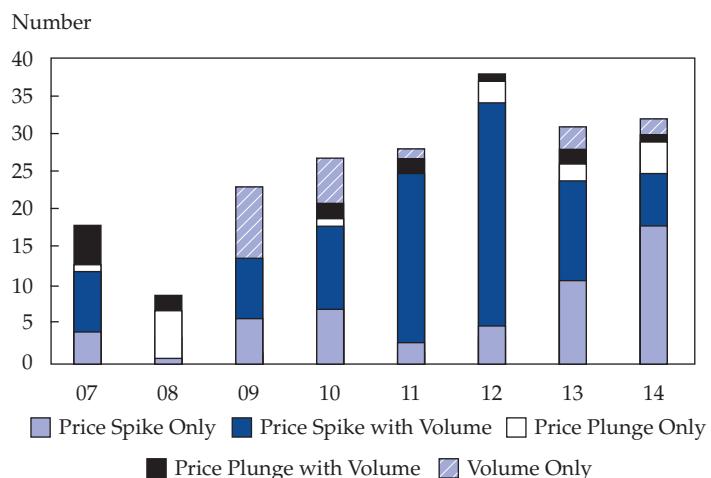


Figure 15. Yearly Distribution of UMA Queries across Five Categories of Triggers



VIII. Conclusion and Policy Recommendations

In terms of its accuracy in identifying companies with either yet-to-be-disclosed or soon-to-be-disclosed material information, the UMA query mechanism is relatively effective. In terms of acting as an alternative source of information to alert investors to potential market misconduct, however, the evidence is mixed. Our detailed conclusions and recommendations follow.

1. *The UMA query mechanism has been quite effective at spotting companies with undisclosed or soon-to-be-disclosed material information.* Even though only 22% of the companies responded with material information on the day of the UMA query, a majority of the rest—48%, which accounted for nearly half the respondents—consisted of companies that responded “unaware” but went on to release additional material information within the next seven trading days after the query.

Additionally, another 12% of the respondents responded “unaware” but went on to release information on the day of the query. Thus, the total percentage of companies that eventually released material information was 82%.

We therefore conclude that the UMA query mechanism has been relatively accurate in detecting companies with either yet-to-be-released or soon-to-be-released material information.

2. *Given the rising trend of UMA queries over time, the mechanism alone is ineffective at reducing the number of UMAs.* Over time, there was a gradual increase in the number of abnormal market activities on Bursa Securities. Despite its relative accuracy in detecting companies with yet-to-be-released or soon-to-be-released material information, the UMA query mechanism alone may not be sufficient to discourage UMAs from occurring. To achieve that goal, additional complementary intervention or even punitive enforcement measures might be required.
3. *Most UMA queries are issued during trading hours.* Given that the majority of the UMA queries in our study were released during trading hours, it is possible that those investors who closely monitor Bursa Securities’ listing circulars would be in a better position to profit or, at a minimum, decrease their losses on the likely price movement following the query compared with those who do not.

It would perhaps be useful to examine the rate of information dispersion after the UMA query has been made public on Bursa Securities’ website. Doing so would enable regulators to observe whether any specific group of traders was benefiting exclusively from this live investor alert system.

Given that providing a real-time investor alert system is one of the core objectives of using the UMA query mechanism, we are puzzled as to why 49 UMA queries took place during market closure.

4. *Price surge is the number one cause of UMA queries.* With 74% (153) of the queries triggered by price surges, we conclude that this issue is the main concern behind most UMA queries.
5. *Insider share transactions are a common issue.* Of the 169 queries that eventually saw the release of additional material information, 61 of the disclosures concerned insider share transactions. We found that insider share transactions accounted for the largest number of instances both overall (36%, or 61 instances) and on a segmental basis—for the DelRes (50%, or 12 instances) and for the DefRes (40%, or 40 instances). For the AR, insider share transactions ranked number two, right behind new order book. Such results are by no means coincidental, and it would be interesting to see whether the regulator has launched any follow-up investigation to address these issues.
6. *UMA queries are better heard by market participants during market price surges.* Among the 153 price-surge-related UMA queries, approximately two-thirds saw some degree of price correction and remained at a lower price level by the seventh day after the query. This is partial evidence that the UMA query mechanism has functioned effectively as an alternative investor alert system given that market participants seem to have considered the UMA query when making investment decisions during price-surge UMAs.²⁴ In other words, investors have probably contemplated the UMA query and become more reluctant to continue buying because they suspect the upward price movement is artificial.

Among the 32 price-plunge-related UMA queries, only around 31% saw some degree of price restoration and remained at a higher price level by the seventh day after the query. At the other end, 44% continued to drop until reaching a lower price level by the seventh day after the query. We therefore conclude that in terms of functioning as an alternative investor alert system during price-plunge UMAs, the UMA query mechanism is relatively ineffective.

7. *UMA queries have been taken relatively seriously by most of the queried companies given their tendency to release material information within the next seven trading days after the query.* Among the 99 UMA queries issued to the DefRes group, 93% (92) of the companies released additional material information on or before the fifth day after the query. Such close timing proximity of the material information release to the UMA queries is unlikely to be mere coincidence. The companies involved either felt pressured by the UMA query to release the information or intended to release it anyway. The former is testimony to the UMA query mechanism's effectiveness in enforcing better market information disclosure, and the latter provides additional proof of the mechanism's accuracy in pinpointing companies with soon-to-be-released material information.
8. *Evidence is mixed on improvement over time in terms of delay in material disclosures after the UMA query.* Moving on to our yearly analysis, most of the additional material information disclosures from the DefRes group occurred within five trading days after the query. Except during the first seven months of 2014, when there was a spike in the number of material disclosures on the third and sixth trading day after the query, we did not observe any significant shift in the day of disclosure pattern over time. Thus, there is a lack of

²⁴There is no concrete evidence to indicate that all price-surge UMAs and price-plunge UMAs are the result of market euphoria and unwarranted market pessimism, respectively. We are merely attempting to examine how market participants have reacted to UMA queries. More specifically, we are gauging whether market participants have seriously considered the UMA query or completely ignored it in making their trading and investment decisions.

evidence to establish the exact effect of the UMA query mechanism on the delay in material disclosures over time.

9. *DefRes dominated in all years.* DefRes's dominance as the most common type of disclosure style persisted over the entire study period. In addition, together with the AR group, DefRes experienced more volatility in the number of responses over time. Regulators would probably gain some insights through additional analysis of the listed companies after every UMA query.²⁵
10. *Price surges were the dominant UMA query trigger, except in 2008.* Finally, with the exception of 2008, price-surge-related UMA queries dominated in every single year. With regard to 2008, the most probable explanation is that 2008 was the year of the GFC. Nevertheless, it would still be interesting to examine whether other aspects of the capital market environment caused price-surge-related UMAs to be almost nonexistent during that year.

Policy Recommendations

1. In 82% of all UMA queries, additional material information was disclosed on the day of the query or within seven trading days after the query. And among those instances in which disclosure was deferred, 93% of respondents went on to release information by the fifth trading day after the UMA query.

There was, however, a spike in the number of material disclosures during the third and sixth trading day after the UMA query during the first seven months of 2014. In view of these observations, we conclude that the UMA query mechanism has been relatively accurate in detecting companies with yet-to-be-released or soon-to-be-released material information.

Over time, however, there is a lack of evidence to establish the exact effect of the UMA query mechanism on the delay in material disclosures.

For regulators seeking a mechanism that can accurately highlight market movement anomalies as well as pinpoint undisclosed or soon-to-be-disclosed material information for investors, we would recommend the adoption of a system similar to the UMA query mechanism.

However, the UMA query mechanism still has room for improvement, especially in terms of reducing delays in the disclosure of material information. One possible way to achieve this goal is to provide appropriate training for the independent directors of listed companies and to conduct relevant investor education for capital market participants. Arming market participants with more knowledge should make them more aware of their rights, thus forcing companies to be more forthcoming in disclosing material information.

The UMA query mechanism also needs to be accompanied by stronger enforcement actions before any tangible improvement in market integrity can be achieved. Simply identifying companies experiencing abnormal market activities for investors—without any follow-up public announcement of an investigation or detailed explanation of what actually happened—will have little effect on enhancing market integrity in the long run.

²⁵Examples of additional analysis include creating an audit trail of all corporate announcements starting from one month before the UMA query until six months after the query and trying to establish any potential links between the equity trading accounts involved in the UMA and the senior management of the particular listed companies.

- Close to 67% of the price-surge-related UMA queries experienced some degree of correction after the query. But only 31% of the price-plunge-related UMA queries had the same experience. In other words, in slightly more than two-thirds of the price-surge-related UMA queries, market participants likely considered the UMA query when making their trading and investment decisions, given that prices corrected at the point of the query. However, less than one-third of the price-plunge-related UMA queries saw market participants doing likewise.

In terms of functioning as an alternative source of information to alert investors to potential market misconduct, the UMA query mechanism has been relatively successful during price surges but less so during price plunges.

We therefore recommend that regulators adopt the UMA query mechanism as a way to alert investors to the potential presence of market euphoria if adopting such a semi-paternalistic approach does not conflict with the regulators' style of operation.²⁶

As for potentially unwarranted market pessimism, we recommend that regulators use other regulatory interventions to either complement or replace the UMA query mechanism.

And for both potential market euphoria and seemingly unwarranted market pessimism that eventually turns out to be a true reflection of changes in a company's fundamentals, an investigation into the exact process of material information leaks (if any) would be necessary.

- We recommend that regulators look into the following areas to improve the implementation of the UMA query mechanism:
 - In view of the rising trend in the number of UMA queries, we recommend that regulators look into the possibility of creating an appropriate complementary intervention measure to beef up the UMA query mechanism. These complementary intervention measures could include publicly announcing all follow-up investigation results and audit trails of the relevant corporate events that took place one month before the UMA as well as how things evolved over the six months after the UMA. This action would send a strong message to market participants that the regulator is adamant about rectifying the problem and would give a clear account of what actually happened: Was it just market rumors, or were there hidden reasons?
 - Given that most UMA queries are issued during trading hours, we recommend that regulators examine the rate of information dispersion after the UMA query has been made public on Bursa Securities' website. This action should shed some light on whether any specific group of traders is benefiting exclusively from this live investor alert system. If so, additional measures would need to be put in place to disperse the UMA query announcement more efficiently.

In addition, given Bursa Securities' intention to use the UMA query mechanism as a live investor alert system, we question the rationale of issuing UMA queries after the market has closed instead of during trading hours.

²⁶Acting as an alternative market alert mechanism is not one of the traditional roles of a capital market regulator. There is, however, a school of thought that urges regulators in developing economies to take a more paternalistic approach, slowly releasing their "grip" as market participants become more sophisticated over time.

- c. Insider share transactions are the most common reason for most UMA queries, followed by new share issues. We recommend more intensive analyses of both areas to determine whether there are common “hidden” problems within Bursa Securities’ trading environment concerning these two disclosure content categories.

In addition, given the sizable number of material disclosures concerning new order books among the AR, we suspect that some listed companies are taking advantage of the disclosure-timing leeway in Bursa Securities’ listing rules to delay such announcements.²⁷ In view of that likelihood, we recommend more stringent and thorough rules to close this gap.

- d. Unusual price surges have been the main cause of most UMA queries, with the exception of 2008, when very few queries were related to price surges—probably because 2008 was the year of the GFC. We therefore recommend that more analysis be directed toward understanding the cause, development, and post-UMA query follow-up of UMAs related to price surges.
- e. Finally, we recommend that regulators examine the degree of pre-disclosure information leakage for all instances in the DefRes category, given its complete dominance in all years. Although some of these instances might involve material disclosures that are unrelated to the UMA, it would still be worth the effort for regulators to take a closer look at this group, given that the bulk of its material disclosures clusters around the day of the UMA query.²⁸

4. We think there is a drawback in Bursa Securities’ listing requirements in Chapter 9 (“Continuing Disclosure,” paragraph 9.11), which makes no specific mention of how soon listed companies must respond to UMA queries. We recommend eliminating this leeway for listed companies by coming up with both a specific deadline for responses and a checklist for how to conduct an in-house investigation to ascertain the causes of UMAs.

²⁷Under Bursa Securities’ listing rules, a new order book is not required to be disclosed immediately upon its occurrence, subject to the company’s readiness. Listed companies may take advantage of this leeway provided by Bursa Securities’ listing rules to delay the dissemination of material information.

²⁸Specifically, the total amount of material information disclosed within two trading days after the UMA query accounted for 55% (54 instances) of the total number of DefRes responses.

Appendix. List of Abbreviations

The following list contains acronyms, initialisms, and other abbreviations for various terms used throughout the paper.

APAC: Asia Pacific

AR: affirmative respondents

Bursa Securities: Bursa Malaysia Securities Bhd

DefRes: deferred respondents

DelRes: delayed respondents

GFC: global financial crisis

NR: negative respondents

RM: Malaysian ringgit

TCP: theoretical closing price

UMA: unusual market activity

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We are thankful for the helpful comments received from various reviewers. We also thank fellow CFA Institute colleagues as well as the Standards and Advocacy Communications and Publications teams. We are grateful to the Securities Commission of Malaysia for its valuable comments and feedback, which greatly helped to improve an earlier version of this paper.

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ISBN 978-1-942713-16-6



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