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### Managing a Quality Award and Stock Market Reaction: Evidence from Malaysia

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## Abstract

In the wake of the digital age, Malaysian companies need to remain competitive by weaving into their business practices the core elements of the total quality management. The Prime Minister Quality Award (PMQA) is awarded annually since 1990 to encourage private-sector companies to strive for business or organizational excellence. The prestigious award is administered by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU). The success of these programmes should be well received by both investors and managers. Using the event study methodology, the null hypothesis of no abnormal return were tested on two companies since there were only two companies from the entire list of recipient companies from 1990 until 2003 are listed in the *Bursa Malaysia* (previously known as the Kuala Lumpur Stock Exchange). It was found that the announcement of the award did not yield any statistically significant abnormal return to the stock market participants holding or trading the securities concerned. One possible explanation would be that the stock market is efficient in the semi-strong form suggesting that investors have discounted all the benefits that a company could possibly derive from introducing a working quality improvement programme when the company originally initiated the programme and not when the company wins the award. Therefore, winning such an award should not create further value to the stock prices and is already impounded in the stock price the moment the corporate pursuit of the quality award was announced. Both the Jensen's and Treynor's Performance Indexes were used to assess the relative performance of a portfolio containing the recipient companies against that of the market as a whole and against other fund managers. It was found that both of the companies underperformed the market index.

## Introduction

Many firms around the world are beginning to realize the benefits of organizational excellence through quality improvement initiatives and globalization has opened avenues for companies in Malaysia to compete not only within the domestic markets but also in the international platform. To ensure survival and sustain competitive edge, there is a dire need and awareness for managers in Malaysian companies to instill continuous improvements efforts leading to business practices or organizational excellence. Therefore, managers have an important role to play in weaving into business practices the core elements of total quality management programmes with a proven success record. The success of these programmes will create corporate value and this is in line with the traditional objective of maximizing shareholders wealth. Therefore, investors and managers will well receive the idea of a corporate pursuit of a quality award in recognition of the efforts to inculcate the quality culture among the employees as well as customers of the organization.

Since the inception in 1988 and the announcement of the first recipient in 1989, managers in many corporations have either adopted or conducted their own self-assessment against the criteria of the Malcolm Baldrige National Quality Award (MBNQA) established by the United States Congress. The MBNQA, administered by the National Institute of Standards and Technology (NIST), intends to promote the awareness in quality, to recognize achievements in quality by companies in the United States and to publicize successful managerial strategies and practices in quality. Wide coverage of this award is evident in a number of studies, for example, Hendricks and Singhal (1996, 1997, 2001a & 2001b), Przansynski and Tai (1999), Adams, McQueens and Seawright (1999), and Brown (1997), has helped many

countries to model their own award. This is evident in the Prime Minister Quality Award (PMQA) which is administered by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) (See Table 1). The intention of the award is in line with the government's philosophy to 'keep upgrading the quality, efficiency and effectiveness of the Malaysia service in accordance with the national goal.' This award is the most prestigious in its class, and it is divided into three categories, namely, private, public and socioeconomic sectors. The award, normally announced at dinner hosted by the Prime Minister, requires a four-step application review procedure that encompasses a desk and site audit by assessors, short listing and assessment by a panel of judge.

**Table 1** Comparison between PMQA, MBNQA, European Quality Award (EQA), and the Australian Quality Award (AQA)

| PMQA 2000   | MBNQA 2004                              | (EQA) 1999                 | (AQA) 2000                       |
|---|---|----------------------------|----------------------------------|
| Top Management Leadership and Management of Quality | Visionary Leadership                    | Leadership                 | Leadership and Innovation        |
| Customer Focus                                      | Customer-Driven                         | Policy and Strategy        | Strategy and Planning Processes  |
| Human Resource Management                           | Organisational Personal Learning        | People Result              | People Oriented                  |
| Quality Assurance of External Suppliers             | Valuing Employees and Partners' Agility | Partnerships and Resources | Processes, Products and Services |
|   | Focus on the Future                     |                            |                                  |
|   | Managing for Innovation                 |                            |                                  |
| Use of Quality Data and Information                 | Management by Fact                      | Key Performance Result     | Data, Information, and Knowledge |
| Corporate Responsibility                            | Public Responsibility and Citizenship   | Society Result             | Customer and Market Focus        |
| Quality and Operational/Business Result             | Focus on Results and Creating Value     | Customer Result            | Business Result                  |
| Process Management                                  | Systems Perspective                     | Processes                  | Processes, Products and Services |

Proactive managers while realizing the objective of pursuing organizational excellence via infusing quality awareness and initiatives in organizations are lauded, two pertinent issues arise. If the stock market is semi-strong efficient, winning a quality award should not give rise for further price appreciation. Secondly, the perception of investors of the benefits of implementing quality improvement programme against the cost involved in implementing it.

The main purpose of this paper is to investigate the announcement of the winning companies on stock performance using the event study methodology. There are only two companies from the entire list of past participants from 1990 to 2003 listed in *Bursa Malaysia* (previously known as Kuala Lumpur Stock Exchange) (See Table 2). It was found that both of these companies did not exhibit statistically significant abnormal return in the announcement window. Essentially, this would imply that the market is efficient in the semi-strong form as the announcement of the winning companies does not have any information content. Another possible explanation would be that winning the award simply did not matter financially to the organization and the information is considered to be rather trivial.

**Table 2** Recipients of the Prime Minister Quality Award

| Year | Recipients   | Remark*  |
|------|--|----------|
| 1990 | Intel Technology Sdn. Bhd. – Bayan Lepas           | Excluded |
| 1991 | Motorola Malaysia Sdn. Bhd. – P.J.                 | Excluded |
| 1992 | Matsushita Industrial Corporation Sdn. Bhd. – P.J. | Included |
| 1993 | SGS Thompson Micro Electronics Sdn. Bhd. – Muar    | Excluded |
| 1994 | Siemens Semiconductor Sdn. Bhd. – Penang           | Excluded |
| 1995 | Project Lebuhraya Utara Selatan Bhd. (PLUS) – K.L. | Excluded |
| 1996 | Selectron Technology Sdn. Bhd. – Prai              | Excluded |
| 1997 | Shangri-La Hotel Kuala Lumpur – K.L.               | Included |
| 1998 | Subang Jaya Medical Centre Sdn. Bhd. – P.J.        | Excluded |
| 1999 | Asean Bintulu Fertilizer Sdn. Bhd. – P.J.          | Excluded |
| 2000 | Intel Technology Sdn. Bhd. – Bayan Lepas           | Excluded |
| 2001 | Samsung SDI (M) Sdn. Bhd. – Seremban               | Excluded |
| 2002 | Infineon Technologies (M) Sdn. Bhd.                | Excluded |
| 2003 | Subang Jaya Medical Centre Sdn. Bhd. – P.J.        | Excluded |

\* Company was excluded from the event study because not listed on the Bursa Malaysia (ex KLSE) Main Board on the day of announcement.

## Literature Review

To examine the impact of information contained in the announcement of winning the PMQA on the performance of stock price, consider the following dividend discount model commonly used by finance managers to value the intrinsic value of the stock price and widely accepted in the corporate finance literature.

$$P_t = \sum_{i=1}^{\infty} \frac{E(D_{t+p} | \Omega_t)}{1 + r_{t+p}}$$

where  $P_t$  is the intrinsic value of the stock price at time  $t$ ,  $E(\bullet | \Omega_t)$  represents the mathematical expectation operator conditional upon the available information set during time  $t$  while  $D_{t+p}$  is the amount of dividend paid at time  $t + p$  and  $r_{t+p}$  is the stochastic discount rate for cash flows that occur at time  $t + p$ . It is contended that this model would predict a change in the fundamental price of the stock if economic information pertaining to the company influences the expected future stream of dividends or the discount rate or both.

If the stock analysts are convinced that a positive difference in the change in the perception of quality can increase the expected future cash flows (dividends) and/or lower the discount rates conditional to the information set available at time  $t$ ,  $\Omega_t$ , that

incorporates all publicly available information investors would have on the company and its economic environment, the unanticipated news of winning some national quality award, previously unknown to the investors, should almost instantaneously bring about a change in the stock price of the company, given that the stock price is efficient.

Docking and Downen (1999) found that a single ISO 9000 registration would generate an approximately 0.9% gain in the market value in lesser known firm. However, findings by Adams, McQueen and Seawright (1999) suggest that winning a quality award may have limited influence on stock prices because it just does not matter. In their study, they found that some of the Board of Overseers of the MBNQA indicated that the award may not matter financially after all. This would imply that efforts put in by managers in trying to win the award has no implication for either a corporate recipient's future cash flow earnings or for its risk-adjusted discount rate.

It is vital for managers to create a long sustainable and working quality improvement programme that can lead to better productivity and increased internal and external customer satisfaction. In turn, this will decrease the cost and price of goods and services and will further lead to the viability of the company and command a greater market share. Nonetheless, according to Hendricks and Singhal (1996), only customers and not award winning giving organizations have the expertise and final say in judging the quality of products and services provided by the firm. Resources spent by managers on the cause of winning a quality award when it is in fact a non-event may eventually lead to price decline. Sometimes, excessive attention in terms of marginal cost of resource allocations in implementing a quality improvement programme exceeds beyond the marginal benefits shareholders may receive from it may actually decrease the value of the shareholders' assets. (Adam, McQueen & Seawright, 1999).

Arguing from a cultural perspective, Goh, Low, Tsui and Xie (2003) discovered that cultural resistance to increased participation by the company's employees, customers and stakeholders in the process of implementing the quality improvement programmes may not invoke much enthusiasm among stakeholders to justify for statistically significant abnormal returns in the stock price of the company. They also argued that quality improvement programmes are meant to reduce cost and increase productivity and require a prolonged period of time to successfully implement and therefore would not conceivably have any reaction on stock performance or produce only at best a marginal reaction.

In the finance literature, Fama (1965) argued that stock prices in an efficient market would fully reflect all relevant and available information, implying that stock market participants have discounted all the benefits that a company would derive from introducing a working quality improvement programme when the company initiated the programme and not when the company wins a quality award. Therefore, winning such an award should not create anymore value to the stock price and in fact, any stock price reaction during the announcement of the company winning the award could suggest that the stock market is likely to be inefficient. This behaviour would help explain the diminishing stock price response across time.

Subsequently, stock analysts who are aware of the positive nature of relationship between quality improvement programmes and stock prices would have incentives to collect information on quality and incorporate it in the stock price in the shortest amount of time possible (Adams, McQueen & Seawright, 1999). But such information is not readily available and, therefore, makes it almost impossible for these stock analysts to make an accurate assessment of the benefits from implementing the

quality improvement programmes, let alone the stock market participants getting access to them. In this respect, investors will choose to wait until there is evidence to suggest that quality improvement programmes have had positive impact on cash flow earnings (Hendricks & Singhal, 2001a).

## *Methodology and Discussion of Findings*

The event study methodology as applied to measure the stock price effect to the information content of the announcement of quality awards. It is a popular statistical research design that allows for isolation of the component of price change accompanying firm-specific events such as the announcement of PMQA. The data used in this study consists of share prices of companies winning the PMQA. From its launch in 1990 until 2003, there were 13 winning companies with Subang Medical Centre Sdn. Bhd. having won the award twice (See Table 2). All companies but two were dropped since none of them were listed in the *Bursa Malaysia* when the announcement were made and many of these companies were multinational companies listed in their respective home countries. The two remaining companies are Matsushita Industrial Corporation Sdn. Bhd., situated in Petaling Jaya, and the Shangri-La Hotel Kuala Lumpur, located in Kuala Lumpur.

Daily data of both the winning companies and the *Bursa Malaysia* Composite Index (BMCI) were used to compute the daily return of the companies and the market return. The daily returns were compounded continuously following Henderson (1990):

$$r_{it} = \ln(1 + R_{it}) = \ln \left( \frac{P_{it}}{P_{i,t-1}} \right)$$

where  $t$  is the time period,  $r_{it}$  is the daily continuously compounded return for company  $i$  of period  $t$ .  $R_{it}$  is the return of the company  $i$ , of period  $t$ ,  $P_{it}$  is the closing price of company  $i$  of period  $t$ , and  $P_{i,t-1}$  is the closing price of company  $i$ , of the previous period.

Next, the abnormal returns were calculated using the most commonly used single-index model following Fama, Fisher, Jensen and Roll (1969). The residual return is the difference between the actual return and the estimated return generated by the market model. The time line in this study consists of 176 days divided into two subperiods (See Figure 1), namely the estimation period and the event period. The estimation period covers a span of 150 days, from 170 to 21 days prior to the announcement. The event period is defined to include 20 days before through 5 days after the public announcement following Przasnyski and Tai (2002).

The residuals,  $\epsilon_{it}$ , during the event period,  $t$ , for each company,  $i$ , are tabulated as follows:

$$\epsilon_{it} = r_{it} - E(r_{it}/\beta_{it})$$

where  $r_{it}$  is the actual return on company  $i$  in period  $t$  and  $E(r_{it}/\beta_{it})$  which is the return on company  $i$  given the company's beta (beta is a measure of risk in terms of the sensitivity of a company's return relative to the market's return). Subsequently, the statistical significance of abnormal return is tested against a null hypothesis that the true abnormal return at  $t$  is zero, i.e.  $H_0: U_{it} = 0$ . The null hypothesis suggests that

there was no abnormal return on the event day implying that the announcement of the PMQA winner did not lead to changes in the stock price of the winning company.

Under the assumption that only market portfolio affects risk, two methods are used to assess the relative performance of a portfolio, namely the Treynor's Index and the Jensen's Index. These measures assume that other assets are held as a mutual fund. If investors who are interested to compare the performance of their stock against the market, both Treynor's and Jensen's Indexes are relevant and if investors are interested to compare the performance of their stock against that of other fund managers, the Jensen's Index is most appropriate. The measures are given as:

$$\text{Treynor's Index} = \frac{r_{it} - r_{ft}}{\beta_i}$$

$$\text{Jensen's Index} = (r_{it} - r_{ft}) - [\beta_i (r_{m,t} - r_{ft})]$$

where  $r_{it}$  is the return of winning company  $i$  at time  $t$ ,  $r_{ft}$  is the return on a risk-free asset (Treasury bills) at time  $t$ ,  $r_{m,t}$  is the return on a market portfolio (BMCI) at time  $t$  and  $\beta_i$  is the estimated systematic portion of the risk of the  $i$ th winning company.

**Table 3** Beta Values, Treynor's and Jensen's Performance Indexes

| Recipient Companies                         | Beta   | Jensen  | Treynor | t-Statistic |
|---|--------|---------|---------|-------------|
| Matsushita Industrial Corporation Sdn. Bhd. | 0.3394 | -0.0658 | -0.2705 | 0.0008      |
| BMCI  | 1      | Nil     | -0.0919 | Nil         |
| Shangri-La Hotel Kuala Lumpur               | 0.7138 | 0.0601  | -0.0119 | -0.0047     |
| BMCI  | 1      | Nil     | -0.0656 | Nil         |

The results in Table 3 suggest that the values of beta estimated using the Ordinary Least Squares (OLS) is less than one implying that these stocks are defensive stocks. A defensive stock is defined as one that has fluctuations in its return less than the fluctuations in the market returns. One possible explanation would be the fact that these two companies do not vary much with the local conditions but changing international geopolitical and economic forces. The calculated  $t$ -statistics were not statistically significant at both the 5% and 1% level of significance and therefore the null hypothesis could not be rejected. This implies that there is no statistically significant abnormal return during the announcement period. It was also found that these two companies underperformed the market index during the announcement using both the Treynor's and Jensen's Performance Indexes. This could be due to the fact that stock analysts expected these world class companies to maintain a high level of quality in its product and services and winning the PMQA is accordance with analyst expectations. Further investment in winning the PMQA to impress the business community is rather futile as investors disagreed with the extra costs involved in winning the award. The marginal benefits derived from winning the PMQA did not justify the marginal costs involved in winning the award. Therefore, investors viewed this negatively. Another possible explanation would be the fact that the market is efficient in the semi-strong form. This argument would suggest that stock market participants have in fact discounted the information right from the outset of the implementation of quality improvement programme in the company. It is believed that the investors were not ignorant of the benefits that the company could derive from programme and the eventual outcome would be winning the PMQA.

## Conclusion

Overall, this paper attempted to examine the impact of the announcement of winning the PMQA on the *Bursa Malaysia* stock market performance of its recipient companies. The event study methodology was applied to conduct this study. Only two companies were listed on the *Bursa Malaysia* from the entire population list of the recipients of the PMQA. The parametric *t*-test was used and the hypothesis of no abnormal return could not be rejected at both the 5% and 1% level of significance. There are numerous reasons or possible explanations as to why there is no announcement effect on the stock market of the recipient companies. One of the possible explanations is that the stock market is semi-strong efficient with respect to the information content of the announcement of the recipients of the prestigious award. Therefore, stock market participants could have discounted all the possible financial and non-financial benefits that a company could possibly derive from introducing a working quality improvement programme. As such, winning a quality award should not enhance the corporate value of the stock price as this piece of information is already impounded in the stock price the instance the corporate pursuit of the quality award was announced. Another possible reason could be that investors do not view this as information relevant to the organization and hence, will not have any implication on the stock price. To evaluate the stock performance of the stocks, both Jensen's and Treynor's Performance Indexes revealed that these recipient companies were underperforming the market index. Therefore, an additional investment into quality improvement programmes is not needed and at best, wastage among the Malaysian recipient companies of the prestigious PMQA. It would perhaps be better if more resources be spent on educating the stock market participants on the possible benefits that they can derive from an effective quality programme implemented in companies than actually winning the quality award.



## **Biographical Information**

Jeremy Cheah is an Assistant Professor of Finance at the Nottingham University Business School in the Malaysia Campus. He is currently investigating the linkages between quality management initiatives and the financial performance of the companies as well as the stock market reaction and one of his papers was accepted for publication by the Total Quality Management and Business Excellence journal.

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