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MANDATORY BID RULE: IMPACT OF CONTROL THRESHOLD ON TAKE-OVER PREMIUMS

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This paper looks at the recommendation by the Securities Industry Council to revise the mandatory bid threshold in the Singapore Code on Take-overs and Mergers from the present 25% to a higher level. It is suggested that the price formation process in Singapore be studied and the welfare implications of such changes be considered before embarking on such revisions.

I. INTRODUCTION

ON 1 November 1999, the Securities Industry Council (hereinafter "SIC") released its consultation paper on Revision of the Singapore Code on Take-overs and Mergers.[1] This was in line with the government's recent effort to restructure the regulatory and legal framework of the Singapore financial market with the view of making Singapore a key center for international corporate financial activities. In its report, the SIC made various recommendations, one of which was to allow partial offers subject to safeguards.[2] This suggestion was implemented on 21 November 2000.[3] Another important revision proposed by the SIC was to raise the mandatory

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1 Hereinafter, the SIC's report. A copy of this report can be downloaded from the Monetary Authority of Singapore website at http://www.mas.gov.sg/. After this paper had been written, the SIC issued a second consultation paper proposing additional revisions on 9 May 2001 together with a draft of the revised Code. This can also be viewed and downloaded from the MAS website.

2 Paragraphs 37 – 40 of the SIC's report.

3 Practice Note No. 14.

bid threshold from the present 25% to a higher level. Together with this change, the creeping provision would be revised from the present 3% in 12 months to 1% in 6 months and the reference period would be shortened from 12 months to 6 months. The reason submitted by the SIC was that in Singapore where the public companies were generally tightly-controlled, the present 25% threshold for a mandatory bid was relatively low by international standards and references were made to Hong Kong and Malaysia where the thresholds were higher at 35% and 33% respectively. In addition, the current 25% threshold also served as a hindrance to corporate alliances, where the partner might not want to make a take-over but only desire a substantial stake (larger than 25%) to have a strong voice.[4]

We intend to look at the proposed revisions from another angle: the cost of the take-over, both to the bidder and the target shareholders, if indeed one is made and how these changes to the mandatory bid threshold and its related rules will affect genuine corporate restructuring processes. We present two price models that may result if SIC's suggestions were to be implemented. The ultimate policy question to be asked is that whose benefits are to be protected by the law and whether such changes are in line with the beliefs subscribed by the regulators.

This paper is thus organized as follows. In the next section, we review the body of literature that has prompted us to embark on this research. As the mandatory bid rule has both legal and financial significance, the section is split into two main sub-sections to look at the works that have been conducted in these disciplines. The review is followed by a theory development that seeks to explain the economic implications of the change in the mandatory take-over threshold. A discussion of the welfare implications on parties involved, namely target company and bidder, will be presented next followed by a conclusion of the study.

II. Legal Aspects of the Mandatory Bid Rule

A. Background and Justification

In Singapore, the Singapore Code on Take-overs and Mergers (hereinafter the "Singapore Code") was introduced in 1974, and was first revised in 1979 and again in 1985. The Singapore Code was modelled after its UK counterpart, the London City Code (hereinafter the "City Code") with little variations. In the UK, the mandatory bid rule (Rule 9) was introduced at the same time when the City Code was first enacted in 1968. Although as a non-statutory instrument, the City Code does not have any legal enforceability, players in the securities markets generally abide by the principles and rules laid down in it under the supervision of the City Panel.

[4] Paragraphs 19 – 23 of the SIC's report.

The same regulatory model has been adopted in Singapore, Hong Kong, Malaysia, Australia and other commonwealth countries.

In a nutshell, what happens under the mandatory bid rule is that once a company/individual[5] (hereinafter "the bidder") accumulates a certain stake in a listed company (hereinafter "the target firm"), there will be an obligation on the bidder to offer to all the existing shareholders of the target an opportunity to sell their shares to the bidder. The point at which the obligation to purchase is imposed or when the bidder is forced to make a bid is generally called the control threshold.[6] In addition, the bidder is generally required to make the offer to purchase at minimum the highest price for which it/he has paid for any share in the target firm during a stipulated time period prior to the control threshold being triggered. This period is commonly called the relevance period.[7] The mandatory bid rule is formulated for the protection of the interests of the "minority" or non-controlling shareholders. It stems from a wider principle of equal opportunity.[8] In essence, countries[9] that have adhered to this rule ascribe to the view that control of a company has a value in itself and that the premium attached thereto should be shared by all the shareholders. This control must not be acquired by stealth or discriminatory purchases. The mandatory bid rule thus prevents the minority shareholders from being left in the lurch, because of the exit of all or the vast majority of shareholders. Coupled with the fact that the rule dictates the magnitude of the consideration involved: the highest price the bidder has paid, for any shares of the company, in the months (4, 6 or 12, depending in which jurisdiction

[5] Most jurisdictions have the concept of "concert parties " which refers to individuals or companies who, pursuant to an agreement or understanding (whether formal or informal), co-operate, through the acquisition by any of them of shares in the target company, to obtain or consolidate control of the target company (*eg* for the Singapore Code, see the definition section).

[6] This is not defined in any of the Codes. However, SIC used this term in its report (see, para 22 of the report). In the Hong Kong's Consultation Paper on Review on the Hong Kong Code on Take-overs and Mergers, September 1999, the term "trigger point" was used (see, para b of the Summary).

[7] In this paper, we define the term "reference period" narrowly as the period with which the highest offer price rule is associated. This term does not refer to the period under the so-called "creeping" provision which generally requires a holder(s) between 25% and 50% to make a mandatory offer if he/they acquire a certain percentage of the voting rights within a stipulated period.

[8] See generally, Hopt and Wymeersch (Ed), *European Take-overs - Law and Practice* (London: Butterworths, 1992). For a comprehensive discussion on the various theories underpinning the equal opportunity rule, see Andrews, "The Stockholders' Right to Equal Opportunity in the Sale of Shares" [1965] 78 Harv L Rev 505.

[9] The mandatory bid rule is not unique to the English legal system. Several countries in the continental Western Europe have also adopted the practice. See Wymeersch, "The Mandatory Bid: A Critical View" in Hopt and Wymeersch (Ed) *European Take-overs – Law and Practice* (London: Butterworths, 1992) at 351-368.

the take-over takes place)[10] prior to the announcement, the rule ensures that should the minority shareholders decide to get out, they will be able to do so on substantially the same terms as the majority shareholders.[11]

The need for this protection is well articulated and illustrated by several take-over battles. The best case for illustration is the take-over of Whitehead Iron Holdings in the UK in 1963.[12] In this case, one of the bidders had made substantial acquisitions from institutional shareholders by undertaking to pay them the final price, whatever that turned out to be. The small individual shareholders were left out in the process because their shareholdings were deemed insignificant to affect the outcome of the take-over.[13]

On the other hand, arguments have been put forth for the reform of the equal opportunity rule. Opponents[14] to the rule are of the view that there are sufficient legal safeguards in corporate law to protect minority shareholders. For instance, the presence of many highly liquid capital markets and the use of derivative securities and portfolio diversification all help to reduce the risk of the minority shareholders being "trapped in". In addition, with the increase in the number of institutional investors and sophisticated players in the capital markets, it is questionable whether the rationale behind minority shareholders protection still holds true these days.[15] It has also been argued that the equality principle has made corporate take-overs so costly, that potential bidders are put off, and thus severely impeding the market for corporate control.[16] This imbalance in favour of shareholders of target firms is undesirable as it has a serious impact on the efficient workings of the

[10] In Australia, the relevance period is 4 months and in Malaysia and Hong Kong, 6 months. In UK and Singapore, the period is 12 months. Hong Kong is rather peculiar as the length of the relevance period (see Rule 26 together with Rule 14 under the Hong Kong Code, available at http://www.hksfc.org.hk/eng/bills/html/codes_guide/00takeover/intro.htm) differs from that under the "creeping" rule (see, *supra*, note 7). In most jurisdictions, these two periods are the same. Therefore, it is submitted that the SIC erred in stipulating that the reference period in Hong Kong is similar to that in UK, ie 12 months (see para 26 of SIC's report).

[11] See Chandrasegar, *Take-overs and Mergers* (Butterworths Asia, 1995) at 217.

[12] Reported on 9th February 1963, Economist.

[13] For a commentary on the case, see Stamp and Marley, *Accounting Principles and the City Code* (London :Butterworths, 1970).

[14] For instance, see Mannolini, "The Reform of Take-overs Law -- Beyond Simplification" [1996] 14 Company and Securities Law Journal 71; Hutson, "Regulation of Corporate Control in Australia: A Historical Perspective" [1998] 7 Canterbury Law Review 97; Hirsch and Hertig, "Experience in Europe" in Hopt and Wymeersch (Ed) *European Take-overs – Law and Practice* (London: Butterworths, 1992) at 434-8.

[15] Mannolini did a study on the share ownership in Australia and found that individuals' participation in the market had decreased four times in 1993 as compared to 1980. This trend of decreasing individual share ownership is likely to persist globally in light of the booming fund management industry, *Ibid.*

[16] Hutson, *supra*, note 14.

market for corporate control. This is because the protection to shareholders of the target firms may inevitably lead to the protection of inefficient incumbent management of the target firms. Without an efficiently functioning market for corporate control, the efficiency of the industry and the health of the economy may be affected.

Lastly, although this protection may seem equitable for the minority shareholders, it is not so for the majority shareholders. This is because a single block of share holdings should command higher value than a block made up of dispersed share holdings of smaller sizes. To illustrate, an individual or institution holding a single block of 10% shares in a company should have a greater say in the running of the company since he or it has made a greater investment in the company as compared to individuals or institutions who have made lesser investments but in total have a collection of dispersed shareholdings of 10%.[17]

B. Characteristics of the Mandatory Bid Rule

In the jurisdictions that have modified their Codes based on the City Code, apart from the control threshold, the mandatory bid rule also specifies the relevance period, the magnitude and the type of consideration to be offered for mandatory take-overs. In general, any changes made on the control threshold are associated with changes in these other terms. In particular, the relevance period usually is amended in tandem with any change to the control threshold. For example, Malaysia changed the control threshold (from 20% to 30%) and the relevance period (from 12 months to 6 months) concurrently, in 1998. In Singapore, the SIC has recommended that the relevance period be changed to 6 months upon approval to increase the control threshold.

a) The Control Threshold

As mentioned at the earlier part of the paper, the point at which the obligation to purchase is imposed or when the bidder is forced to make a bid is called the control threshold. Despite the fact that the take-over codes in most common law jurisdictions have been adapted from the City Code, there is no uniform control threshold among these countries. In the City Code itself, the control threshold has been changed from a non-numerical based system to a fixed threshold of 30% in 1972. During the non-numerical regime which lasted for four years, the control threshold was ascertained by reference to the ability of a shareholder to significantly influence the affairs of the company and conduct them in accordance to his wishes. The merit in this approach is that it catches transactions that, structurally speaking, would fall outside the parameters of the mandatory bid rule if the control threshold were fixed at a certain percentage. However,

[17] See Hirsch and Hertig, *supra*, note 14 at 434-5.

the difficulty in ascertaining control and the uncertainty arising from the subjective judgments by the City Panel rendered the non-numerical based system to much debate and metrical difficulties.[18] Unfortunately, the rationale for fixing the control threshold at 30 % was unknown.[19] Nevertheless, this objective way of ascertaining control is deemed more desirable as it reduces any ambiguity that may arise with a non-numerical system and allows the extension of the bid rule to all forms of acquisitions, whether on the stock exchange or through private negotiations.

Despite the change in the City Code in 1972, the drafters of the Hong Kong Code chose to retain the non-numerical based control threshold when the Code was drafted in 1975. Hong Kong only changed its control threshold to 35% in 1981, after six years of controversy surrounding the interpretation of the non-numerical control threshold.[20] On the other hand, the Australian Code and the Singapore Code adopted the definite control threshold right from the enactment of the Codes and the threshold for both Codes was fixed at 20%. In Singapore, the control threshold was revised once in 1985 from 20% to the present 25%. Under the proposed revised Code issued by the SIC in May 2001, the threshold is altered upwards to 30%. The direct legal implication of this upward shift is that a shareholder who can amass more than 25% voting rights (but below the new control threshold) in a company need no longer be forced by law to make a bid for the entire shareholding. Under most common law jurisdictions, including Singapore, a block of 25% or above voting rights is sufficient to prevent the passing of a special resolution in the company. In Singapore, where public companies are tightly controlled, although it is true that a shareholding below 30% may not confer effective control,[21] it certainly constitutes negative control.[22]

b) The Relevance Period

The duration for the relevance period is important because the mandatory bid rule under the jurisdictions discussed, requires the bidder to make the offer at minimum the highest price, for which the bidder has paid for any shares in the target firm within the relevance period. This is to ensure that the sharing of the control premiums is available to all shareholders.[23] However, there is no standard duration for the relevance

[18] Chandrasegar, *Corporate Take-overs in the United Kingdom, Singapore and Hong Kong* (Singapore: Longman Singapore Publishers Pte Ltd, 1989).

[19] Hopt and Wymeersch , *supra*, note 8.

[20] *Supra*, note 10.

[21] SIC's report, para 20.

[22] See Farrar, Furey and Hannigan, *Farrar's Company Law* (London: Butterworths, 3rd Edition, 1991) at p 579. See also, *Clemens* v *Clemens Bros Ltd* [1976] 2 All ER 268, a case that clearly demonstrated the power of this negative control.

[23] Lee and Farrar, *Take-overs: Institutional Investors and the Modernisation of Corporate Laws* (Auckland: Oxford University Press, 1993) at 192-202.

period. The City Code and the Singapore Code specify the relevance period to be 12 months prior to the offer, while the Hong Kong Code stipulates the relevance period to be 6 months.[24] For the situation in Hong Kong, the former Deputy Commissioner for Securities and Commodities Trading in Hong Kong Derek Murphy suggested that the deviation from the City Code was due to the greater incidence of family controlled public companies, or narrower concentration of share ownership in the Hong Kong market. He argued that the vast number of block holders (shareholders who have more than 5% of the shares of a company) made the length of the relevance period inconsequential in Hong Kong, as potential bidders are likely to trigger the mandatory bid rule upon acquisition of shares from these block holders.[25] However, Murphy's argument may not be sufficient to explain the situation in Australia, where the relevance period is 4 months despite the fact that the Australian market does not exhibit high concentration of share ownership.

The duration of the relevance period in the four jurisdictions is likely to change in the future. With no standard relevance period, draftsmen from the various jurisdictions have in the past been changing the duration of the relevance period, with no apparent justification. For example, Malaysia changed the relevance period from 12 to 6 months in 1998, and in Singapore, the SIC argued that the 12 months period is too long, considering the current volatile share prices and fast changing economic situations. It considered that this provision could work against shareholders of the target firms by preventing an offer at a good premium to the prevailing market price (but below the highest price paid by the offeror in the last 12 months) from being made.[26] Therefore, a relevance period of 6 months has been proposed.

To have a better assessment of the implications arising from any alternation to the quantitative elements of the mandatory bid rule, we submit that it is insufficient to benchmark the rule to that of other jurisdictions without first considering the financial consequences of such revision. The next section reviews the major works done in the past to look at the financial aspects of the mandatory bid rule. With these theoretical backgrounds, we will attempt to develop a simple model to provide a framework to analyse the welfare implications of a change in the mandatory take-over threshold in the subsequent section.

[24] Rule 26 read with Rule 14 of the Hong Kong Code.

[25] Murphy, *A Guide to the Hong Kong Code on Take-overs and Mergers: a Specially Commissioned Report* (London: Longman Professional, 1988) at 23.

[26] Paragraphs 27-28 of the SIC's report.

III. Financial Aspects of the Mandatory Bid Rule

Numerous studies have documented the significant wealth created by take-over and merger activities by analysing the cumulative abnormal returns (CAR) accruing to the shareholders of the target firms surrounding the event. The evidence is generally consistent over time and in different markets.[27] Most of the studies found that shareholders of the target firms enjoyed substantial and statistically significant abnormal returns upon the announcement of take-over bids, regardless of the eventual outcomes of the offers. The returns to the target shareholders are affected by many factors, such as payment methods,[28] rival bidders,[29] toehold strategies,[30] take-over laws,[31] and large block acquisitions.[32]

Table 1 gives a summary of the gains from take-over for target firms as documented by some researchers.

[27] For instance, for discussions on the US market, see Bradley, Desai and Kim, "Synergistic Gains from Corporate Acquisitions and their Division Between the Stockholders of Target and Acquiring Firms", (1988) 21 Journal of Financial Economics 3, and Jensen and Ruback, "The Market for corporate control: The Scientific Evidence" (1983) 11 Journal of Financial Economics 5; for UK, see Franks and Harris, "Shareholder Wealth Effects of Corporate Take-overs: The UK Experience 1955-85" (1989) 23 Journal of Financial Economics 225, Firth, "Take-overs, Shareholder Returns and the Theory of the Firm", (1980) Quarterly Journal of Economics 235, and Franks, Broyles and Hecht, "An Industry Study of the Profitability of Mergers in the U.K." (1977) 32 Journal of Finance 1513; and for Singapore, see Koh and Lee, "Risks and Returns of Acquiring and Acquired Firms in Singapore: An Empirical Analysis" (1987) 5 Asia Pacific Journal of Management 157.

[28] Franks, Harris and Mayer, "Means of Payment in Take-overs: Results for the United Kingdom and United States" in Aueback (ed.), *Corporate Take-overs: Causes and Consequences* (University of Chicago Press, 1988), and Eckbo and Langohr, "Information Disclosure, Method of Payment and Take-over Premiums" (1989) 24 Journal of Financial Economics 363.

[29] Ravid and Spiegel, "Toehold strategies, take-over laws and rival bidders" (1999) 23 Journal of Banking & Finance 1219.

[30] Ravid and Spiegel, *ibid*, and Bradley, Desai and Kim, *supra* note 27.

[31] Ravid and Spiegel, *ibid*.

[32] Mikkelson and Ruback, "An Empirical Analysis of Interfirm Equity Investment Process" (1985) 14 Journal of Financial Economics 523; Choi, "Toehold Acquisitions, Shareholder Wealth and the Market for Corporate Control" (1991) 26 Journal of Financial and Quantitative Analysis 391; Shleifer and Vishny, "Shareholders and Corporate Control" (1986) 94 Journal of Political Economy 461; and Grossman and Hart, "Take-overs bids, The Free-Rider Problem and the theory of the Corporation" (1980) 11 Bell Journal of Economics 42.

Table 1 Summary of Empirical Evidence on Returns to Shareholders of Target Firms

Panel A – Studies on the US Market

	Bradley, Desai and Kim (1988)	Asquith (1983)	Langetieg (1978)	Dodd and Ruback (1977)	Mandelker (1974)
Country	USA	USA	USA	USA	USA
Period	1963-1984	1962-76	1929-77	1958-76	1941-62
Sample size	236	196	149	136	252
Period of Returns	One month* before the take-over	One month before the take-over	Six months before the take-over	One month before the take-over	Seven months before the take-over
CAR results	24.57%	6.2%	10.78%	20.58%	14.0%

Panel B – Studies on other Markets

	Draper and Paudyal (1999)	Firth (1980)	Walter (1984)	Koh and Lee (1988)
Country	UK	UK	Australia	Singapore
Period	1988-1996	1969-75	1964-74	1973-84
Sample size	581	87	112	31
Period of Returns	One month* before the take-over	One month before the take-over	One month before the take-over	One month before the take-over
CAR results	11.08%	28%	13.5%	7.6%

* 20 trading days instead of one calendar month.
CAR – Cumulative abnormal returns

Thus, the mandatory bid rule consists of two institutional features that may significantly affect the returns to the target shareholders vis-à-vis the bidder's shareholders. With regards to the relevance period, there are at this point in time no empirical nor theoretical studies which suggest that the length of the relevance period will affect the returns to these two groups of shareholders. The relevance period has been part of the mandatory rule for the reason of ensuring a level playing field and thus it is more for the purpose of equity and fairness. On the other hand, the control threshold creates a maximum limit in which a bidder can hold before it is obligated to

launch a mandatory take-over.[33] Any sizable holding of the shares in a target company before the bidder crosses the control threshold is called the toehold.[34] The use of toehold as part of the acquisition strategies has been scrutinised by various theoretical and empirical studies as to its effect on wealth creation and transference between the shareholders of bidder and target companies. To relate toehold to the mandatory bid rule, toehold can be viewed as the stake held by a potential bidder before crossing the control threshold and hence the maximum toehold is one share less than the control threshold. However, it should be noted that toehold build-up cannot be conducted in stealth, due to the stringent disclosure rules.

A number of finance and economic researchers[35] have studied the relationship between toehold and the bid premium. Some of these works show that one major source of gains for the bidder in a take-over venture comes from the pre-tender acquisition or the build-up in the toehold.[36] Building on the seminal theoretical work by Grossman and Hart (1980) on the free-rider problem in a take-over scenario,[37] models have been built to suggest that a larger toehold reduces the price a bidder will have to pay for the target company.[38] This finding is consistent with the proposition concerning the behaviour of a monopolistic informed trader who would exploit his proprietary information to buy up as many shares in the market as possible before the trader faces a statutory constraint.[39] Similarly, a higher toehold will increase the probability of a subsequent bid as well as that of a successful take-over.

On the other hand, a contrary model has been proposed by allowing the toehold to be endogenously determined by the bidder.[40] Under this framework, it has been found that the size of the toehold is positively related to the value of the synergistic benefits and also that higher initial

[33] Interestingly, the U.S. does not have a mandatory threshold. Take-over offers, or tender offers as it is known in the U.S, will have to comply with the rules set out in Regulation 14D promulgated under the Securities Exchange Act of 1934. This regulation and other relevant U.S. legislations can be viewed and downloaded from a website called the Securities Lawyer's Deskbook maintained by the Centre for Corporate Law, University of Cincinnati College of Law, http://www. law.uc.edu/CCL/sldtoc.html.

[34] Bulow, Huang and Klempler define a toehold as the substantial stake held by a potential bidder before making a bid for the target firms, see Bulow, Huang and Klemperer, "Toeholds and take-overs", (1999) 107(3) Journal of Political Economy 427.

[35] For instance, see Shleifer and Vishny, *supra*, note 32, Hirshleifer and Titman, "Share Tendering Strategies and the Success of Hostile Take-over Bids," (1990) 98 Journal of Political Economy 295, Chowdhry and Jegadeesh, "Pre-tender offer share acquisition strategy in take-overs" (1994) 29(1) Journal of Financial and Quantitative Analysis 117, Ravid and Spiegel, *supra,* note 29, and Bulow, Huang and Klemperer, *supra*, note 34.

[36] Grossman and Hart, *supra*, note 32, and Shleifer and Vishny, *supra*, note 32.

[37] *Ibid*.

[38] Shleifer and Vishny, *supra*, note 32, and Hirshleifer and Titman, *supra*, note 35.

[39] Kyle, "Continuous Auctions and Insider Trading" (1985) 53(6) Econometrica 1315.

[40] Chowdhry and Jegadeesh, *supra*, note 35.

shareholding will be associated with higher probability of tender offer success. Supporters of this model found that owning a toehold 'can help a bidder to win an auction, and win very cheaply.'[41] This is because a bidder who owns a toehold has an incentive to bid more aggressively since every bid represents a signal of what the bidder is willing to sell for the toehold that it owns.

Finally, Ravid and Spiegel approached the issue of a toehold very differently.[42] They modelled the optimal toehold a bidder should have in its acquisition strategy. They found that in an environment where there is no rival bidder, no toehold will be purchased. In the presence of rival bidders, toehold has three major functions: first, it discourages a rival bidder from entering the auction. Secondly, even if the toehold does not discourage the entrance of a rival bidder, it provides some form of insurance in the event when the bidder loses the auction. Thirdly, the larger the toehold, the more the second bidder will be forced to pay for the target.

Some of the results from the theoretical studies were supported by mixed empirical studies.[43] Thus, there are significant uncertainties as to whether toehold does or does not increase the bid premium and more significantly, who will be the main beneficiary in the event that the control threshold is raised. In the next section, we attempt to construct an economic model to answer the above two questions.

IV. THEORY DEVELOPMENT

Shleifer and Vishney[44] and Chowdhry and Jegadeesh[45] provided conflicting models concerning the impact of a toehold on the total cost of acquisition. The authors realise that there are significant institutional differences between the take-over practises in the US and Singapore that cast doubts on the generalizability of the US models and results in the Singapore context.[46] For example, the Singapore take-over code allows

[41] Bulow, Huang and Klemperer, *supra*, note 34.

[42] Ravid and Spiegel, *supra,* note 29.

[43] For example, Walkling found that the chance of winning a take-over battle increases with the toehold (see Walkling, "Predicting Tender Offer Success: A Logistic Analysis" (1985) 2(4) Journal of Financial and Quantitative Analysis 461) although Sudarsanam did not find any evidence that bid premium or bid success is significantly influenced by toehold (see Sudarsanam, *The Essence of Mergers and Acquisitions* (London: Prentice Hall, 1995). Surprisingly, Bradley, Desai and Kim, *supra*, note 27, and Jennings and Mazzeo, "Competing bids, target management resistance and the structure of take-over bids" (1993) 6 Review of Financial Studies 883 provided evidence that more than 50% of the bidders in the samples do not purchase any toehold before making a tender offer.

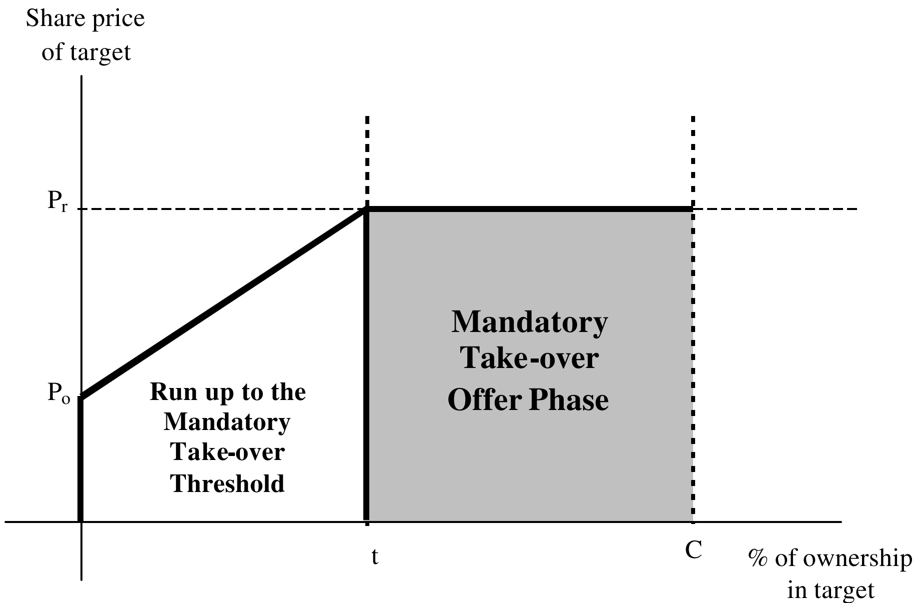
[44] *Supra*, note 32.

[45] *Supra*, note 35.

[46] We want to thank an anonymous referee for raising this to our attention in the earlier draft of this paper.

partial take-over only under strict rules[47] and provides for mandatory take-over of the target. These give the minority shareholders significant amount of protection as they will not be locked out of the take-over and the cost for waiting is much lower. Such protection will be reflected in the price of the shares. Given the unique differences between the US and Singapore, the following discussion seeks to develop a simple mathematical model to relate the impact of toehold on the cost of acquisition in a country like Singapore where the control threshold serves as fixed upper ceiling before a bidder is forced to make a bid. Figure 1 provides the framework for the analysis of the price paid for the acquisition given the price formation process before a bidder reaches the control threshold.[48] For simplicity, we would assume that the toehold is the maximum amount a bidder can buy into a company without triggering the mandatory take-over provisions.

Figure 1 The Acquisition Framework



[47] In Singapore, offers for less than 100% of the equity share capital of a target are generally undesirable and SIC's approval must be obtained in advance. For an offer for less than 25% of the equity share capital of the target, which in any case is below the present mandatory control threshold, consent will normally be granted. For offers for between 25% and 50% of the equity share capital of the target, consent will not be granted. For offers for between 50% and 100% of the equity share capital, SIC's consent will only be granted if certain conditions are fulfilled. See *supra*, notes 2 and 3.

[48] We make the simplistic assumption that bidder has zero shareholdings of the target when it decides to make a strategic take-over bid for the target company.

P_r - Reservation price of the bidder
P_o - Current share price of the target
t - Maximum holding of the bidder before it must launch a mandatory take-over
C - Percentage holding of the bidder that allows it control of the target

Given the acquisition framework in Figure 1, the cost to be paid by the bidder to control the target is given by:

$$\text{Cost to Bidder} = \frac{1}{2}(t \quad h)(P_r + P_o) + (C \quad t)(P_r) + AOC \qquad (1)$$

where t is the mandatory threshold, h is the initial shareholding of the bidder, P_r is the reservation price[49] of the bidder, P_o is the current share price of the bidder, C is the percentage shareholding that the bidder desires to own in order to control the target firm and AOC is the administrative and other costs.

Assuming a simple case where the reservation price is independent of the toehold and the bidder has zero initial shareholding in the target firm (h=0). Given this assumption, the cost to the bidder can be expressed in the following equation derived from (1):

$$\text{Cost to Bidder} = t \; \frac{P_o \quad P_r}{2} \div + C * P_r + AOC \qquad (1a)$$

Equation (1a) clearly shows that the cost to the bidder is a negative function of the toehold (t) since $\frac{P_o \quad P_r}{2} \div < 0$. This seems intuitive, as bidder would desire to establish a large toehold in order to launch a successful and cost effective take-over of a target.[50]

On the other hand, if we assume a price formation process as described by Ravid and Spiegel[51] for the upward sloping equilibrium price curve which is a function of the toehold as represented in equation (2):

49 Reservation price in this instance means the true market value of the target firm's share in the hands of the bidder (i.e. inclusive of the synergistic benefits from the merger).

50 Grossman and Hart, *supra*, note 32, Shleifer and Vishny, *supra*, note 32, and Hirshleifer and Titman, *supra*, note 35.

51 *Supra*, note 29. See also Stultz, "Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control" (1988) 20 Journal of Financial Economics 25, and Stultz, Walkling, and Song, "The Distribution of Target Ownership and the Division of Gains in Successful Take-overs" (1990) Journal of Finance 817.

$$P^{*} \quad = \quad P_o + kt \quad (2)$$

Given this price formation process, the cost to the bidder is as follows:

$$\text{Cost} \quad = \quad P_o \, (c \quad h) \, t \; \frac{kt}{2} \div + t \;\; Ck \;\; \frac{hk}{2} \div + AOC \qquad (3)$$

(see Appendix A for the proof)

The cost to the bidder now becomes a positive function of the toehold and the proof is shown in Appendix A. This means that a shift upwards in the mandatory take-over threshold will benefit the minority shareholders because they will get a higher price for their shares in the take-over.

This provides a contrasting theoretical result as found in Shleifer and Vishny,[52] where a higher toehold reduces the take-over premium, but provide support for the model by Chowdhry and Jegadeesh,[53] which suggests that a large toehold should increase the take-over premium. Therefore, the relationship between the size of the toehold (which is determined by the threshold of the mandatory take-over provisions) and the premium paid by the bidder depends on the assumption underlining the price formation process leading up to the establishment of the toehold, *ceteris paribas.* Next, we consider the welfare implication of the above theory in the context of Singapore where there is a recommendation for the increase in the control threshold. We specifically examine whose welfare would be most significantly affected given the possible price formation process existing in the Singapore market.

V. WELFARE IMPLICATIONS OF CHANGES IN TAKE-OVER THRESHOLD

There are two possible scenarios concerning the share price formation process of the target company as it relates to a take-over exercise.

Reservation Price is Independent of Toehold

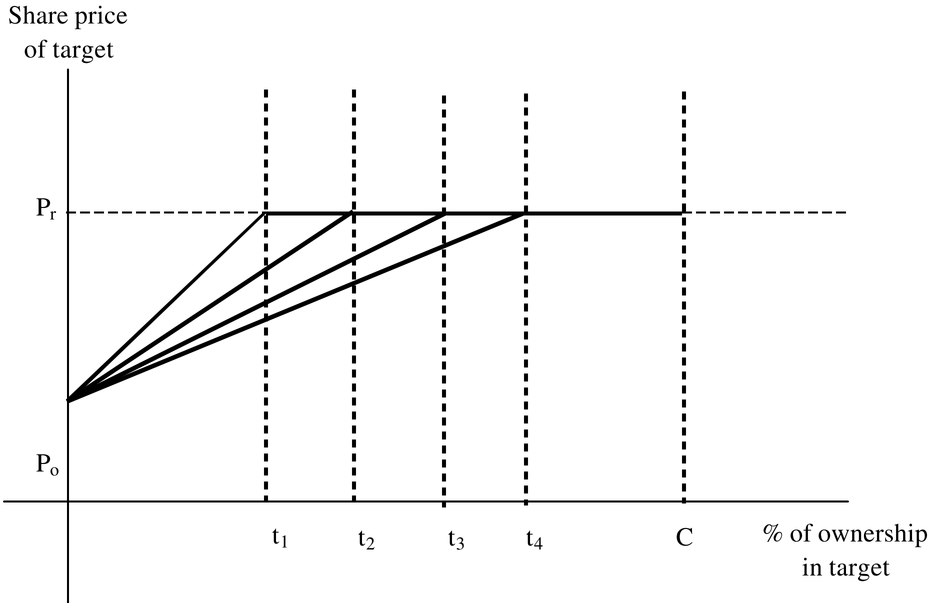
In this first scenario, the share price of the target company converges to the reservation price of the bidder regardless of the control threshold (i.e. toehold in this study). The argument for this price formation process is that the bidder will not bid more than the reservation price and given a relatively efficient market, the true value of the target to the bidder will be discovered by the market and thus regardless of what the toehold is, the share price will converge towards the reservation price and not go beyond it before the

[52] *Supra*, note 32.

[53] *Supra*, note 35.

bidder launches a mandatory take-over. Figure 2 summaries this first scenario in terms of the different thresholds and the given price formation process.

Figure 2 Reservation Price Independent of Toehold



P_r - Reservation price of the bidder
P_o - Current share price of the target
t_i - Maximum holding of the bidder before it must launch a mandatory take-over
C - Percentage holding of the bidder that allows it control of the target

Clearly in this case, the cost of the acquisition reduces as the toehold increases. The welfare implications of this scenario is that those shareholders who sold their target shares before the company launches a mandatory take-over will suffer a welfare loss and this increases as the mandatory take-over threshold is increased. Under this condition, a change in the legislation by increasing the threshold will only benefit the bidders and thus make take-over less costly. In addition, it can also be seen that the welfare of those target shareholders who hold out and only sell their shares in the mandatory take-over offer period achieves the reservation price. Although they are better off than those target shareholders who sold their shares during the run up to the toehold, they are indifferent to the change in the mandatory take-over threshold (*ie* they obtain the same reservation

price, P_r). This is the main argument behind the suggestion to change the control threshold in the SIC's report in making take-over less costly in the market. In the event where there are inadequate disclosure laws concerning sizeable acquisition, a bidder can by stealth achieve a significantly cheap but large toehold before it launches the mandatory take-over if the threshold is increased. [54] Thus from a social welfare perspective, the winners are the bidders while the losers are generally the target shareholders especially those who are less informed and who sold their shares during the run-up phase.

The analysis is incomplete without considering the case where the bidder can launch a voluntary take-over anytime before it reaches the mandatory threshold limit.[55] There are two major conditions that need to be considered that will have significant impact on the bid price. The two conditions are the presence of competing bidder(s) and the market participants' ability to discover the true reservation price of the bidder. In the presence of competing bidder(s), the voluntary offer price will reflect the reservation price, otherwise competing bidders will be drawn into the bidding. With respect to the market partcipants' ability to discover the true reservation price, where the market is efficient, it would suggest that the offer price will immediately converge towards the reservation price otherwise the probability of success of the take-over will be very low. The presence of any of the above two conditions would mean that a voluntary take-over (below the control threshold) will always be more costly. This means that the bidder did not choose to use the stealth approach in acquiring the necessary "cheaper shares" before it triggers the mandatory take-over. Thus a voluntary take-over would be a dominated strategy which will not be used by the bidder. Therefore, it is not a consideration in a change in the control threshold.

The Reservation Price is a Function of the Toehold

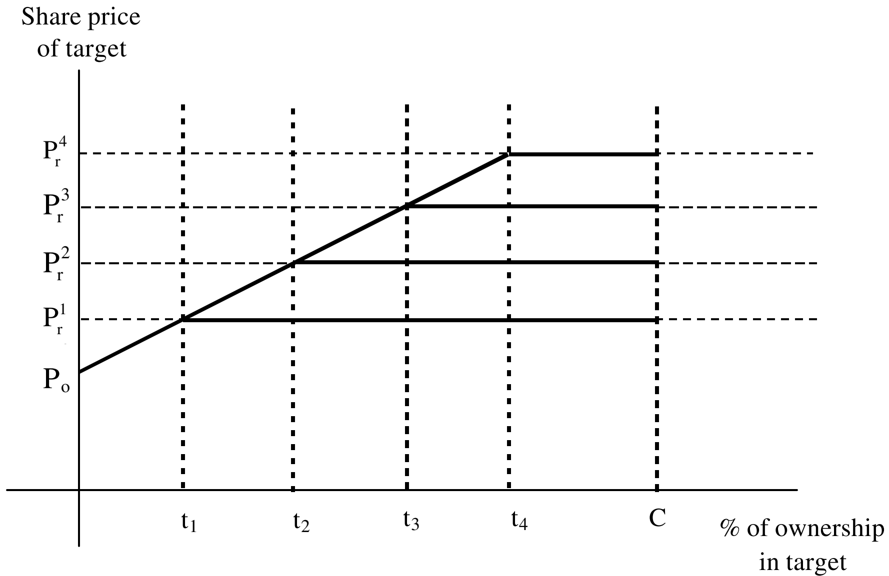
The second scenario is that the price formation process is significantly affected by the size of the toehold because of the interaction of supply and

[54] In Singapore, the problem is alleviated somewhat by the existing disclosure laws that require a holder of 5% or more of the nominal amount of all the voting shares in a company, or a substantial shareholder, to notify any change in his interests in the company within two days of the change, see Division 4 of Part IV of the Companies Act. For a listed company, once it has received a notification of a change in shareholding from a substantial shareholder, it is obliged under the Chapter 9 of the SGX Listing Manual to make immediate announcements to the SGX for public release, see clause 901(4) of the Listing Manual.

[55] We want to thank the anonymous referee for bringing this to our attention with respect to an earlier draft of this paper and the need to address this very important issue.

demand.[56] As the toehold increases, the number of shares available in the market for the bidder reduces and as such, the bidder has to pay a much higher price for these shares. This argument is credible if we assume that there is an information asymmetry in the sense that the market could not discover the reservation price of the bidder and thus could not demand the reservation price. In addition, Grossman and Hart[57] and Shleifer and Vishny[58] have provided the argument that the bulk of the gains to a bidder lie in the pre-tendering acquisition. The gains from the pre-tendering acquisition can be used to "subsidise" a more aggressive bid as the threshold increases. Figure 3 summaries the second scenario where the final bid price is a linear function of the size of the mandatory threshold.

Figure 3 The Reservation Price is Function of the Toehold



P_r^j - Bid price of the bidder given mandatory take-over threshold j.

P_o - Current share price of the target

t_i - Maximum holding of the bidder before it must launch a mandatory take-over

C - Percentage holding of the bidder that allows it control of the target

56 This is the view held by researchers such as Ravid and Spiegel, *supra*, note 29, Stultz, *supra*, note 51, and Stultz, Walkling, and Song, *supra*, note 51.

57 *Supra*, note 32.

58 *Supra*, note 32.

Figure 3 clearly shows that premium paid by the bidder is significantly increased by the increase in the mandatory take-over threshold. In addition, target shareholders who sold their shares only in the mandatory take-over phase will be much better off when the mandatory take-over threshold is increased. On the other hand, shareholders of target companies who sold their shares in the lead up to the toehold are not necessarily made worse off as the mandatory take-over threshold is increased. From a welfare perspective, the shareholders of the target firm are never made worse off if the mandatory take-over threshold is increased. The bidders are necessarily made worse off in this scenario.

Again, the analysis is incomplete without considering the impact of a voluntary take-over before a company reaches the threshold. Consistent with scenario two, if the reservation price is a function of the threshold when the take-over bid is launched, it would suggest that the bidder is always better off launching the take-over as soon as possible. This will be the most cost effective strategy of the bidder but subjected to two major considerations. The first consideration is the probability of a successful bid given the very low toehold that it has acquired before the launch of the voluntary take-over. The second major consideration is the presence of competing bidder(s). The presence of competing bidder(s) may prevent the company from launching a voluntary bid at a low price. Thus the competition can drive the cost up significantly and the bidder can lose the advantage of a lower cost of take-over by launching a voluntary take-over. Under this analysis, the change in the control threshold may not have much significant or implication on the voluntary take-over.

Therefore, in the above analyses of the economic impact of the change in the mandatory bid rule, especially with respect to the change in the control threshold, the price formation process is most crucial. The price formation process is a function of the efficiency of the market and the presence of competing bidder(s). If the market is efficient, stealth warehousing of target firm's shares would be minimised and the reservation price of target firm will be discovered in a very efficient and expeditious manner. This being the case, a change in the control threshold would not encourage nor discourage take-overs. Neither will the welfare of the shareholders of the target firm or the bidders be significantly affected. On the other hand, if the market efficiency is questionable and the market takes time to converge to the reservation price, then depending on the degree of information asymmetry or the market's ability to discover the true reservation price, the welfare of the different groups of shareholders, target firms and bidders, would be differently affected as discussed in scenarios one and two above. The use of voluntary take-over may further complicate the analysis.

VI. CONCLUSION

It is well known that legislation and judges' decisions rule from the grave even though they may be antiquated. Yet, in a modern and progressive society with an ever-changing business environment, legislation has to keep up with changes in the business climate and conditions. The Singapore take-over code was framed decades ago and also in a very different business environment. The protections offered by the code may have long outlasted its usefulness. In addition, there may be a need to rebalance the protection offered by the code against the need for business expediency and risk taking. The recent consultation paper on a proposed change in the mandatory take-over provisions, especially with regards to the control threshold, provides a fertile ground to re-examine the intersection of law with the economic well-being of the various parties to the take-over.

The recommendation to increase the control threshold will benefit the bidder if the reservation price or the final take-over price during the mandatory offer phrase is independent of the control threshold. This will result in lower premium paid for the target. Under this circumstance, target shareholders who sold their shares in the lead up to the mandatory threshold will suffer significant welfare losses while those shareholders who only sold their shares in the mandatory phase is indifferent if the control threshold is increased.

On the other hand, if the share price formation process is dependent on the control threshold, then any increases in the control threshold will penalise the bidders because they will now have to pay a higher premium. For target shareholders who sold their shares during the run up to the control threshold, it is ambiguous as to whether they will gain from the increase in the mandatory threshold. For target shareholders who only sell their shares in the mandatory offer period only, they will gain from any increases in the control threshold.

Having so said, it is submitted that a caveat should be put on our analysis. The two models are developed based on two alternative assumptions that either the presence of competing bidder(s) or the efficiency of the market will drive any voluntary take-over offer price up to reflect the reservation price. The absence of these two factors would mean that a sincere bidder will always choose to make a voluntary take-over offer rather than to wait to trigger the control threshold as the cost in the former situation will be relatively lower.

Nevertheless, before there is any change in the take-over code concerning the control threshold, there should be substantial understanding of the share price formation process leading up to the mandatory take-over phase. Otherwise, the change can make take-over much more costly and stifle the market for corporate take-over. On the other hand, the welfare of the target shareholders may be compromised in making take-over less costly and easy to carry out.

APPENDIX A

$$\text{Cost to the bidder} = \frac{1}{2}(t \quad h)(P^* + P_o) + (C \quad t)(P^*) + AOC \tag{A1}$$

$$P^* = P_o + kt \tag{A2}$$

Substituting (A2) into (A1):

$$\text{Cost} = \frac{1}{2}(t \quad h)(P_o + kt + P_o) + (C \quad t)(P_o + kt) + AOC$$

$$= \frac{1}{2}(t \quad h)(2P_o + kt) + (C \quad t)(P_o + kt) + AOC$$

$$= tP_o + \frac{kt^2}{2} \quad hP_o \quad \frac{hkt}{2} + CP_o + Ckt \quad tP_o \quad kt^2 + AOC$$

$$= \quad \frac{kt^2}{2} \quad hP_o \quad \frac{hkt}{2} + CP_o + Ckt + AOC$$

$$= P_o(C \quad h) \quad t \quad \frac{kt}{2} \div + t \;\; Ck \quad \frac{hk}{2} \div + AOC \tag{A3}$$

To show that cost is a positive function of toehold (t) and assuming that the initia l shareholding is zero (h = 0), we need to show the following::

$$Ck > \quad \frac{kt}{2} \div$$

$$C > \frac{t}{2} \tag{A4}$$

In order for the mandatory take-over provisions to be effective, the control threshold can never be greater than the percentage shareholding requires to control the target firm (ie. C > t). This being the case, clearly equation (A4) must hold and cost to the bidder is a positive function of the toehold.