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# Cross-listings, signalling and free cash flow: An examination of the Hong Kong and the Chinese stock markets' reaction to dividend announcements

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# 1. Introduction

Corporate dividend policy has attracted the interest of researchers of capital markets and corporate behavior for almost half a century. Within the dividend literature, dividends have a signaling role regarding agency costs, such that dividends may diminish insider conflicts (reduce free cash flow) or may be used to extract cash from firms (tunneling effect) – which could be predominant in emerging markets. However, the potential impact of foreign stockholder ownership has been largely neglected, especially in emerging markets where the ownership structures and institutional background are significantly different from those of developed economies. For example, disclosure policies and disclosure behavior of Chinese firms issuing cross-listed shares on the Stock Exchange of Hong Kong were very different from other SEHK-listed firms and state-owned firms incorporated in Hong Kong (Red-chip shares), which they attribute to signaling incentives and cost-benefit concerns.

Moreover, financial economists have explored the properties of dividends arising from signaling models. Signaling theories were developed to explain positive abnormal returns following announcements by firms of an increase in dividends. Such excess returns are puzzling in traditional models of perfect information because dividend income has been taxed less favorably than capital gains. On the other hand, unexpected changes in dividends are tied to share price changes in the corresponding directions because they contain information about alterations in management's anticipation of a firm's earnings prospects while the investors do not possess the knowledge about firm's future earnings.

Cross-listing — also referred to as "dual-listing," "international listing," or even "inter-listing," — is usually a strategic choice made by a firm to secondarily list its equity shares trading in a home market exchange on a new overseas market. It may or may not involve an initial or secondary capital raising and it can often impose different transparency, disclosure and governance-related requirements depending on the type of market being targeted.

Based on the above-mentioned theories, an interesting research topic arises – China - an emerging market with different regulations and shareholder structures – as a sample to assess the relationship between the role of dividends, a tool to signal firms' prospects and reduce the free cash flow problem, and possible enhanced corporate governance due to cross-listed shares outside the local market. In a word, this paper uses a sample of Chinese companies listed both in A shares market and H shares market to assess the potential effect of cross-listing on the signalling role of dividends and the relationship between free cash flow and corporate dividend policy.

Based on the purpose outlined, this paper is organized as follows. The relevant studies on the signaling role of dividends, the free cash flow hypothesis and cross listing as well as the background of the Chinese stock markets and shareholder structure will be discussed in Chapter 2. Chapter 3 sketches out the data sources and the methodology employed in this study. The empirical results for each point discussed are presented in Chapter 4. Chapter 5 is the summary and limitation of this study and suggestions for future research directions.

## 2. Literature Review and Research Background

The paper firstly summarized the theoretical development of the bonding hypothesis, information asymmetry and dividend policy, agency conflicts and dividend policy together with the relationship between "bonding" and dividend policy. Stulz and Coffee are the first proposers of the bonding hypothesis to defend against the market segmentation hypothesis. According to them, cross listing is beneficial for firms when a firm could reliably commit to a more effective monitoring and to a more constraining force on managers and block shareholders. However, Chinese researchers do not have a consensus on the reasons of cross-listing decisions while Zhou et al. (2011) found that for Chinese companies listed in the SEHK, the main motivation is to get financing and brand effects rather than gaining competitive advantage via improved corporate governance. The dividend irrelevance theory concluded by Miller and Modigliani opens the research on one market fraction – information asymmetry, which is one of the key basis of the so-called "dividend-signalling hypothesis" first presented by Linter (1956).

Jensen' s free cash flow hypothesis provides a fascinating mechanism to reduce the potential agency costs related to excess cash flows - to distribute the free cash flow to shareholders. Since then, Dividends play a significant role in reducing the agency costs of management. The research conducted by Lang and Litzenberger (1989) also offers an attractive way to distinguish between firms with and without overinvestment problem (Tobin's Q).

When dividend policy is considered with the background of cross listing, the outcome becomes ambiguous although dividends are regarded as a substitute for effective legal protection. There are also findings that cross-listed companies are less likely to overinvest or misuse free cash flow as they pay more of the free cash flow out as dividends than local-only companies.

This paper then provides the research background for companies' dividend policy and cross

listing. Significant issues need to be taken into consideration are the following: Chinese companies trading in any of the two exchanges offer various share classes, one available for foreign investors and one for domestic ones and the introduction of H shares in Hong Kong has attracted many Chinese companies to further raise capital considering Hong Kong has a more developed stock market and international investor base.

The shareholder structure also displays different characteristics in China's A-shares market. Companies' split share structure presents the fact that tradable shareholders can generate income through capital gains and cash dividends while non-tradable shareholders can earn profits only from dividend distribution. Consequently, the controlling shareholder's ownership is much higher than the second- (third-) largest shareholders, which generates serious agency problems - the expropriation of minority shareholders by controlling shareholders and the tunnelling effect prevailing. The CSRC's 2005 new pilot reform curbed value expropriation from large shareholders through by floating the non-floating shares and balancing the interests of shareholders, but the ability of Chinese managers to make decisions autonomously has been improved, resulting in the probable increase in agency costs.

## 3. Methodology and Data

The stock markets in China and above-mentioned attributes all make the topic of dividend policy, investors' reactions to dividend change announcements and the possible relationship with cross-listing interesting to explore. Hence the analysis is conducted on a sample of contains 53 Chinese firms cross-listed on the A-shares Shanghai and Shenzhen stock exchanges and the Hong Kong Stock Exchange (SEHK), with a sample period from January 2009 to December 2013, which leads to 207 firm year observations in the A-shares exchanges and 202 in the SEHK. The consequential observations in the sample covered 382 announcements of cash dividend changes, in which there are 138 cash dividend decreases and 243 cash dividend increases. To test the hypothesis, firms are also separated into two categories based on Tobin's Q ratio while there are 26 firms that have Q's greater than or equal to one and 27 firms with Q's less than one.

The paper then details the methodology employed in the analysis – event study, with a framework using the adjusted market model as the normal performance return model. Returns are indexed and the abnormal returns ($AR_{i,t}$) in the event window are calculated based on the market tool presented by Sharp (1964) and Linter (1965). Based on the cross-sectional average abnormal returns, cumulative abnormal returns $CAR_T$ on and around the dividend

announcement dates are obtained. The standardized t test is then adopted to test the ARRs and CARs with an additional independent two-sample *t*-test for difference in mean with unequal variances aiming to investigate the difference between firms with high Q and low Q and the difference between the A-shares market and the H-shares market. Furthermore, a cross-sectional regression analysis is conducted to more closely examine the effects of theoretically important factors, where CARs are the dependent variable.

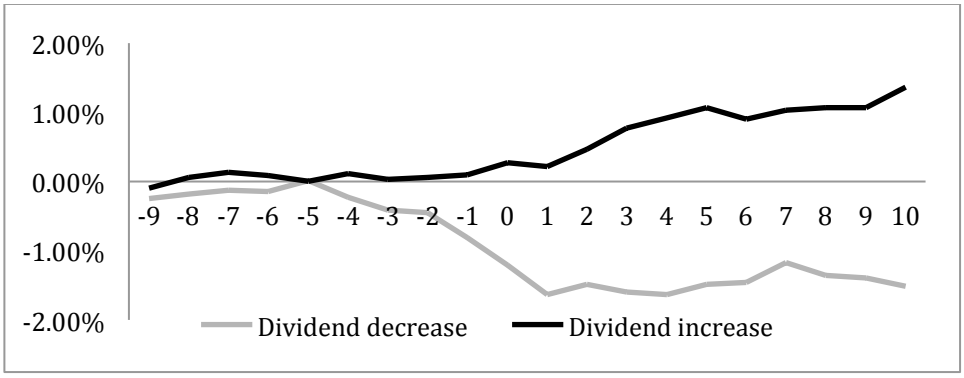
## 4. Empirical Result

In the second half of the paper, the test results are presented with the sequence of the corresponding theories. To measure the signalling role of cash dividend changes, stock prices movements are collected and the cumulative average abnormal returns on and around the dividend declarations are reported in the table below. The fact that there are no sluggish market reactions in the dividend-decrease group indicates that the Chinese and Hong Kong stock markets respond efficiently to the dividend announcements, and the negative share price reaction is consistent with the perception that a dividend decrease sends negative information to the public resulting in stock price drop. On the other hand, most of the abnormal returns of the ten days after the cash dividend increase announcements are positive, and three of them are significant at a 5% level. There is also a rising tendency of the absolute values of the CARs and the t values in the event period, which verifies that the dividend increases signal management's confidence in firms' future cash flows and are interpreted by the markets as sustainable increases in dividends.

Due to the decreased information leakage with companies' reformed ownership structures and enhanced external governance, no significant reaction was found from 10 to 2 days before announcements for both types of dividend changes. Notably, the result of the t-test for difference in mean with unequal variances for the two types of cash dividend changes shows that market reactions to dividend decrease announcements are of a much bigger magnitude than dividend increases and the difference declines after 2 days succeeding announcements, implying a quick price adjustment after the dividend announcement events.

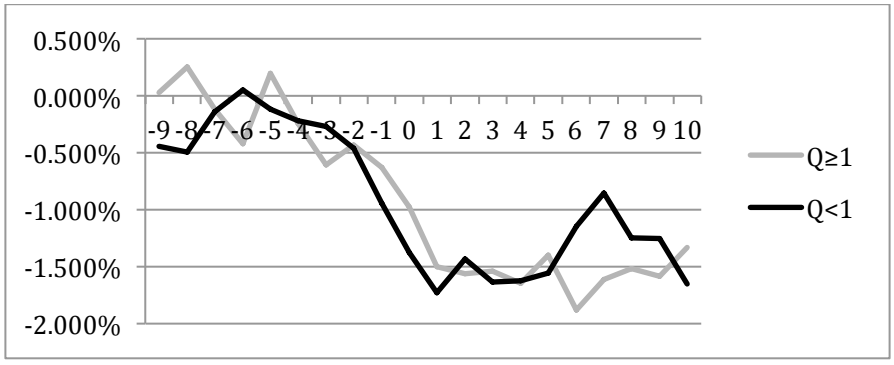
The below figure shows the signalling role of dividends:

**Figure 1 Cumulative abnormal returns around the dividend announcement days**



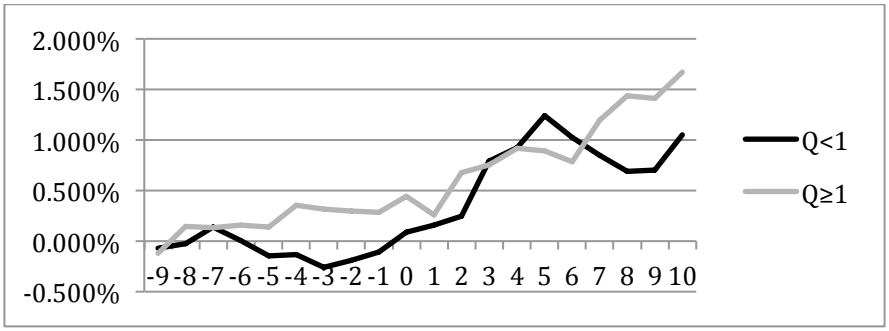

The second hypothesis the paper examines is Jensen's free cash flow hypothesis. The cumulative average abnormal returns together with t-statistics are grouped for sample firms with Q's greater than or equal to 1 (Q≥1), and those with Q's less than 1 (Q<1). The result shows that the CARs in both the stock markets are greater for Q<1 firms than those for Q≥1 firms from day -1 to +1, with Q<1 firms significant at 5% while Q≥1 firms realized insignificant cumulative abnormal returns. This comparably larger price impact for Q<1 firms is consistent with the theory that the markets consider management's decisions to cut dividends of firms with less investment opportunities as means to retain cash for private benefits or invest in projects that cannot create value for shareholders.

**Figure 2 Performance comparisons for two groups of firms with different Tobin's Q (Dividend Decrease - A shares)**



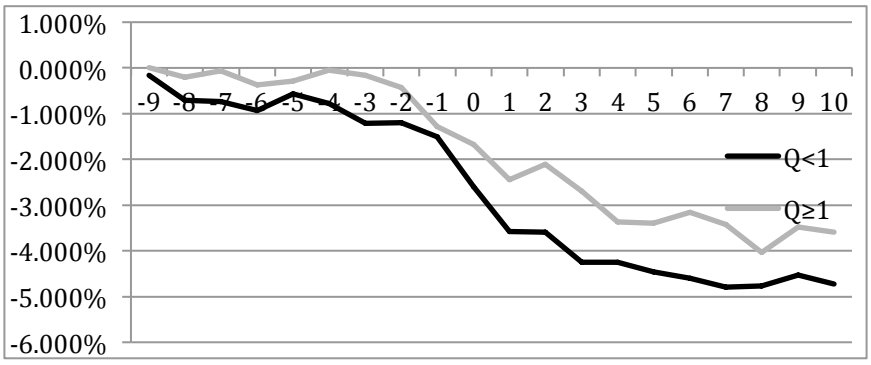

The hypothesis is also affirmed in the case of dividend increase or unchanged. The higher absolute value and significance for CARs for Q<1 firms demonstrates that firms are welcomed to distribute excess cash to the shareholder when they have less growth opportunities, which signals a reduction in agency costs and a weak propensity for overinvestment by accepting poor projects.

**Figure 3 Performance comparisons for two groups of firms with different Tobin's Q (Dividend Increase/Unchanged – A shares)**




Despite the pattern shown above, ambiguous evidence exhibits, as the markets seem to adjust the previous price movements faster for Q<1 firms. Both the CAR and significance level in the period 2 to 10 days post announcements show that the CARs for Q<1 firms start to move towards the pre-event levels when the stock prices are rising with a 5% significance for Q≥1 firms. It is also notable that the differences between CARs of Q>1 firms and those of Q<1 firms are not significant in these three event windows, even in the three days around the dividend announcement. Since the hypothesis suggests that the expected 10-day-after-event performance for Q<1 firms is more substantial than it for Q>1 firms, the free cash flow hypothesis is not supported in this regard.

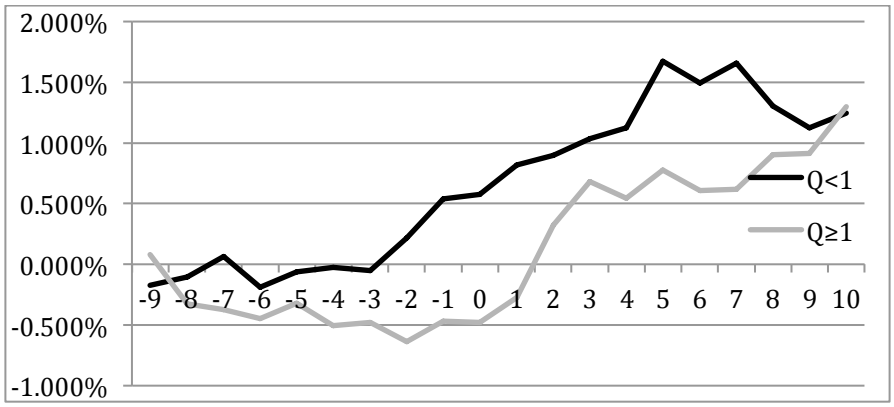
**Figure 4 Performance comparisons for two groups of firms with different Tobin's Q (Dividend Increase/Unchanged – H shares)**




The paper further analysed whether the perceived freer H-shares market responded favourably to the enhanced corporate governance of the H-share listed firms whose main markets are in China mainland. The theoretical background is that there are more active international investors in the H-shares market and there are higher requirements for transparency and investor protection. By incorporating the dividend signalling effect and the free cash flow hypothesis, the analysis emphasizes on the differences of CARs and the significance of these differences between the two sample stock markets. The statistics table

presented in the paper shows that the magnitude of share price drop measured by the negative CAR in the H-shares market is larger than its counterpart in the A-shares market, in the case of dividend decrease announcements. Also, the investors in the Hong Kong market punished firms with lower Q's due to their anticipation of potential overinvestment problems in mature firms. That negative reaction persists and extends to the (+2, +10) event window while unfavorable movements also started to take place before the announcements.

**Figure 5 Performance comparisons for two groups of firms with different Tobin's Q (Dividend Increase/Unchanged – H shares)**




In spite of the supportive evidence provided above, investors' diverged reactions to cash dividend increases seem confusing since the H-share market underreacted to these announcements because the CARs are only marginally larger in the (-1, +1) window with t-statistics are lowered by the high standard deviations. The paper has demonstrated the expectation that the H-shares market would recognize the enhancement of corporate governance and external scrutiny through more considerable share price reactions, thus the CARs difference analysis only half supports the bonding theory. Regardless of this weakening effect, it still can be concluded that the informational role of cash dividends in signaling future cash flows and agent conflicts is significant.

Cross-sectional regressions are then performed to analyse the factors influencing the stock price response to cash dividend announcements. $CAR_{-1, +1}$ is regressed against percentage change in dividends (*ΔDPS*), firm size (SIZE), profitability (ROA), long-term debt ratio (LEVERAGE), Tobin's Q ratio (Q) and year and industry dummy variables. The coefficients and t-statistics output indicate that the percentage of dividend changes has a strong explanatory power on cumulative abnormal returns. Abnormal returns tend to rise with the increase in firm's profitability but the empirical result in the A-share markets does not lend support to the "small size effect". While there is perception that firms raise more debt to

partly fund distribution with higher risks, the markets actually responded more favorably to the good news for firms with higher leverage. The negative sign of Tobin's Q is consistent with the notation that the more growth opportunities firms have, the weaker the reaction the market showed towards their announcements of increases in cash dividends.

## 5. Conclusion

In the last, the paper concludes the main findings from the above-mentioned analysis together with the implications drawn from previous studies and the background of Chinese stock market. The empirical result strongly supports the signalling role of cash dividends as investors do incorporate this information on their decisions of buying/selling firms' shares, despite the fact that the China A-share market only has two-decade development and the market-based economy is immature. With the process of the SOE reform, the major agency problem becomes the conflicts between autonomous managers and the shareholders rather than the conflicts between controlling and minority shareholders. Thus the markets interpret dividend changes as a sign of increased/reduced agency problems by responding more to firms with less growth opportunities ($Q<1$).

The term "bonding" is originated from the motive that drives firms to cross list their shares in a more stringent legal regime to increase investor base and enhance corporate governance. An interesting finding in the paper is that although the H-shares market gave more negative responses to corporate decisions of reducing cash dividends, investors reacted less positively for dividend-increase announcements. The comparison between the A-shares and the H-shares market lacks significant differences, revealing limited evidence to uphold the bonding hypothesis.

Due to time restriction, this paper does not further investigate many interesting issues such as distinguishing the announcement effects of cash and stock dividends and the examination of long-term performance of these Chinese firms announcing dividend changes who cross-listed in Hong Kong or even in other developed markets such as the US and the Europe. Finally, this paper outlines the potential impact of this study on investors and regulators. With the knowledge of the different roles dividend plays in the A-shares and H-shares markets, the information content of cash dividends and the corporate governance condition of firms should be taken into account in making investment decisions. Regulators also need to strengthen the reform and the protection of minority shareholders with the purpose of building a healthier and market-based market.

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