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Tom Guo

Claremont McKenna College

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CLAREMONT McKENNA COLLEGE

The price discounts of Chinese cross-listed companies and their variation across
sectors

SUBMITTED TO

Professor Richard C.K. Burdekin

AND

DEAN GREGORY HESS

BY

Hong-Yu Tom Guo

FOR

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Abstract

This study builds on the paper by Arquette, Brown, and Burdekin (2008) and asks whether the factors which they find to be significant in influencing the differential between the share prices of Chinese securities traded on their home market in Shanghai versus share prices observed offshore in Hong Kong and New York have varying degrees of influence when compared across industries. This paper focuses on Chinese companies listed on both the Shanghai and Hong Kong Stock Exchanges and finds that the proxy variables of expected exchange rate change, relative market sentiment, and relative company sentiment are significant in determining the average discount observed and that their effects do indeed vary significantly from industry to industry.

I: Introduction

It is commonplace to find firms trading on multiple exchanges. In terms of pricing, if international capital markets are perfectly integrated, cross-listed shares sharing the same return and risk characteristics theoretically should be equivalent in price after adjusting for exchange rate expectations and transaction costs. However, many studies have shown that in practice, the law of one price is often violated when the same or equivalent securities are traded on multiple markets. These price deviations although usually small in most markets are unusually large for Chinese cross-listed companies making it an easy focus for academic studies.

Rosenthal and Young (1990) in testing for violations of the law of one price, examine the shares of two Anglo-Dutch groups whose parents, Royal Dutch Petroleum Company and Shell Transport and Trading PLC, have a charter mandating the division of cash flow available for distribution. The setup states a 60:40 respective ratio for the market prices of their securities which trade on both the New York and London stock exchanges. However, they find this pricing setup to not hold in practice and observe persistent deviations in both markets. Similarly, Froot and Dabora (1999, pp4) observe the same deviations and assert that locational factors strongly influence cross-listed share prices. They draw attention to the observation that when “the US market moves up relative to the UK market, the price of Royal Dutch (which trades relatively more in New York) tends to rise relative to the price of its twin Shell (which trades relatively more in London)”.

While some of the literature has focused on showing the consistent deviation to the law of one price amongst cross-listed firms, the majority of the work has been focused on why these deviations occur.

A difference in market liquidity is often pointed to as a source of observed foreign share discounts. Lower liquidity and higher trading costs in the respective country leads foreign investors

to require a large discount. In trying to capture the variable of illiquidity, Amihud and Mendelson (1986) use the quoted bid ask spread and indicate that more illiquid stocks have a higher expected return and are priced lower to compensate investors for increased trading costs.

Differences in the risk preferences of domestic and foreign investors are another factor which should be considered. Eun and Janakiramanan (1986) assert that the foreign share price discount is related to the ratio of the aggregate risk aversion of domestic investors to that of foreign investors. Ma (1996) who focuses on the segmented Chinese stock markets claims that Chinese investors are inherently more speculative and thus have greater risk tolerances than their foreign counterparts which can partially explain the price differentials between the A-shares (for domestic investors) and B-shares (for foreign investors).

Chakravaty et al. (1998) and Grossman and Stiglitz (1980) look more in depth at the occurrence in China where foreign Class B-shares, which are highly illiquid as well, trade at an average discount of approximately 60 percent to the prices which domestic A-shares trade at. They argue that a significant reason for this observation is that foreign investors have less information about local firms. Information asymmetry may arise from a myriad of sources which are not limited to language barriers, different accounting standards, and a lack of reliable information about local firms. Interestingly, Chui and Kwok (1998) indicate that foreign investors may receive news about China faster than domestic investors because of information barriers placed by the Chinese government. They point to the possibility that it is in fact the returns on B-shares that lead the returns on A-shares and not the other way around although this seems highly unlikely given the respective unequal trading volumes. Chen et al. (2001) is not convinced by the asymmetric information hypothesis and argues that it does not provide a convincing explanation for the B-share discount.

Bodurtha et al. (1995) focuses on investor sentiment. They observe that closed-end country funds often trade at large premiums and discounts from their foreign asset values. They argue that US and foreign markets are affected by different risk factors that are reflected in the closed-end country fund movements. Their multifactor model finds that individual closed-end country fund premiums move together mainly due to the co-movement of their stock price with the US market. They indicate that these movements reflect a US specific risk which they argue can be interpreted as US market sentiment.

Arquette, Brown, and Burdekin (2008) which this paper primarily builds upon looks further into the effects of investor sentiment and tries to separate the effects of exchange rates and sentiment factors. In doing this, they specifically focus on the differential between the share prices of Chinese securities traded on their home market in Shanghai versus share prices observed offshore in Hong Kong and New York. Using a sample size of thirty Chinese companies with relative market and relative company price earnings ratios as proxies for market sentiment and company sentiment, they find that the discounts on Chinese securities whether traded in New York or Hong Kong are significantly influenced by changes in exchange rate expectations and investor sentiment.

This paper builds on the analysis by Arquette, Brown, and Burdekin (2008) by using their overall model but focusing on whether these same determinants affect the average discount differently across industries. More specifically, I investigate whether exchange rate expectations and investor sentiment variables influence the average discount differently across the industries of Chinese companies which are cross-listed on the Hong Kong and Shanghai Stock Exchange between the periods of January 2008 and December 2011.

This study finds that the proxy variables which are used to capture the expected exchange rate change, overall market sentiment (Shanghai in comparison to Hong Kong), and company

specific sentiments in Shanghai and Hong Kong are significant at the one percent level in influencing the discount observed between cross-listed companies on the Shanghai and Hong Kong Stock Markets. These explanatory variables exert significantly different influences on the discount from industry to industry suggesting it is important not to assume uniform effects for all firms.

This rest of this paper is divided as follows. Section II focuses on the data that is used in this study, the definition of the variables used, and the overall properties of the sample. Section III covers the methodology used to determine if there is an actual differential effect of the independent variables across industries on the observed average discount. Section IV analyses the results and finally Section V concludes with potential avenues of new research.

II: Data and Properties of the Sample:

The data for this study is exported from Bloomberg and the analysis is restricted to only the companies which are dually listed on the Shanghai Stock Exchange and Hong Kong Stock Exchange so that there are both A and H shares of the company. This gives an initial raw sample of 166 securities (88 companies).

For the sectoral analysis, the Industry Classification Benchmark (ICB) is used to divide the selected securities into their respective groups. The ICB is used globally to allow investors to compare industry trends making it an appropriate classification system for this study. The classification system is customized by separating the ‘financial industry’ into ‘commercial banking’ and ‘non-banking’ segments in light of the special role banks played in the 2008 Financial Crisis. ‘Consumer goods’ and ‘consumer services’ are combined to form a ‘consumer goods and services’ industry. This gives a total of nine categories (See Table 1): Basic Materials, Consumer Goods and Services, Commercial Banks, Non-Banks, Health Care, Industrials, Oil and Gas, Technology, and Utilities.

Table 1

Companies included in the sample

Company Name	Date Begins	Date Ends
Basic Materials		
Jiangxi Copper Co. Ltd	January 4, 2008	December 29, 2011
Yanzhou Coal Mining Co.	January 4, 2008	December 29, 2011
Consumer Goods and Services		
Tsingtao Brewery Co. Ltd	January 4, 2008	December 29, 2011
Guangshen Railway Co. Ltd	January 4, 2008	December 29, 2011
Commercial banks		
Bank of China	January 4, 2008	December 29, 2011
China Citic Bank	January 4, 2008	December 29, 2011
China Merchant Bank	January 4, 2008	December 29, 2011
Industry & Commercial Bank of China	January 4, 2008	December 29, 2011
Non-Banks		
Beijing North Star	January 4, 2008	December 29, 2011
China Life Insurance Company Ltd.	January 4, 2008	December 29, 2011
Ping An Insurance	January 4, 2008	December 29, 2011
Health Care		
Guangzhou Pharmacy	January 4, 2008	December 29, 2011
Shandong Xinhua Pharmaceutical Company	January 4, 2008	December 29, 2011
Industrials		
Anhui Conch Cement Co. Ltd	January 4, 2008	December 29, 2011
Anhui Expressway	January 4, 2008	December 29, 2011
China Shipping Development	January 4, 2008	December 29, 2011
Dongfang Electrical Machine	January 4, 2008	December 29, 2011
Guangzhou Shipyard Intl Co.	January 4, 2008	December 29, 2011
Jiangsu Expressway Co. Ltd.	January 4, 2008	December 29, 2011
Shenji Group Kunming Machine Tool Co. Ltd.	January 4, 2008	December 29, 2011
Shenzhen Expressway Co. Ltd.	January 4, 2008	December 29, 2011
Weichai Power Co. Ltd.	January 4, 2008	December 29, 2011
Oil & Gas		
China Oilfield Services	January 4, 2008	December 29, 2011
China Petroleum and Chemical	January 4, 2008	December 29, 2011
Technology		
Nanjing Panda Electronics Imp. &Exp. Co. Ltd.	January 4, 2008	December 29, 2011
Zte Corporation	January 4, 2008	December 29, 2011
Utilities		
Datang International Power Generation Co. Ltd.	January 4, 2008	December 29, 2011
Tianjin Capital Environmental Protection Group Co. Ltd.	January 4, 2008	December 29, 2011

The variables used in this study follow very closely to the study by Arquette, Brown, and Burdekin (2008). Table 2 shows the formulas used for each of the variables in the study. *Average Discount* is defined relative to a company's respective Shanghai A share price as a percentage.² Defining the *Average Discount* in this way makes intuitive sense since for most companies listed on the Shanghai and Hong Kong Stock Exchanges, Shanghai listings usually trade at a premium whereas Hong Kong listings trade at a discount. For the *Expected Exchange Rate Change* variable, this study uses the three-month forward \$US to Chinese RMB rate relative to the spot rate. It is acceptable to use this exchange rate since the Hong Kong dollar is pegged to the US dollar and the assumption that this study makes is that the Chinese RMB and Hong Kong dollar spread movements are linked to the Chinese RMB and US dollar movements through the sample period. *Market Sentiment* is the ratio of the price earnings ratios of the Shanghai A Market Index in the numerator and Hong Kong H Market Index in the denominator. The ratio is usually above one since the Shanghai A Market Index has the higher average price earnings ratio. The *Relative Company Sentiment* variables for both Shanghai and Hong Kong are proxies for how investors feel about the company relative to their respective markets. It is expected that the *Average Discount* would increase when the *Relative Company Sentiment (Shanghai)* rose and decrease when the *Relative Company Sentiment (Hong Kong)* rose. This occurs since investors would demand more A shares when the company was performing well comparatively to the Shanghai index thereby driving prices up and increasing the discount. If the company's H-share price earnings ratios were doing better than the Hong Kong market index's price earnings ratio, investors would be drawn to buying the H-shares driving those

² Labeling this as a discount allows for accurate comparisons later when sectors are compared to one another. It should be noted, that defining the average discount in this manner is different from the way Arquette, Brown, and Burdekin (2008) define it in their paper ($\frac{H \text{ Share} - \text{Implied A Share}}{H \text{ Share}}$). The way the average discount is defined is opposite and is scaled according to the implied H share which explains the large discounts which are observed within the summary statistics.

prices up and thereby decreasing the overall discount. *Market Capitalization* and *Dividend* are added as control variables.

Data for all these variables were obtained from Bloomberg for the 166 different securities for the time period between January, 2002 to January, 2013 on a daily basis. Holidays which the Hong Kong Stock Exchange and Shanghai Stock Exchange observe are taken out of the data (See Appendix I for list of Holidays excluded); however, even after doing this, there were still large periods in the data for a majority of the securities where there were missing data. For most of these cases in which the missing data extends to six months, the security is simply cut; otherwise, it is supplemented by outside sources if possible. The study additionally does not include companies which started their listing after January 2, 2008 so as to capture as much of the 2008 Financial Crisis as possible. The period which this study focuses on is from January 2, 2008 to December 29, 2011 which filters the final sample size to 28 companies (See Table 1).

Table 2:
Variable Definitions

Variable	Description
Average Discount	$\frac{\text{Company A share} - \text{Company Hshare} \times (1 \text{ HKD to CNY exchange rate})}{\text{Company Hshare} \times (1 \text{ HKD to CNY exchange rate})}$
Expected Exchange Rate Change	$\frac{[\text{Chinese Renminbi 3 month Non - deliverable forward (\$US to Chinese Rmb)} - \text{Spot Price for Actual Exchange Rate}]}{\text{Spot Price for Actual Exchange Rate}}$
Relative Market Sentiment	$\frac{\text{Price Earnings Ratio on Shanghai A Market Index}}{\text{Price Earnings Ratio on Hong Kong H Market Index}}$
Relative Company Sentiment (Shanghai)	$\frac{\text{Company's Price Earnings Ratio}}{\text{Price Earnings Ratio on Shanghai A Market Index}}$
Relative Company Sentiment (Hong Kong)	$\frac{\text{Company's Price Earnings Ratio}}{\text{Price Earnings Ratio on Hong Kong H Market Index}}$
Market Capitalization	Current Market Capitalization
Annual Dividend	Dividend Yield

Looking at the summary statistics of the sample (See Appendix II), it is apparent that the average discount varies significantly from sector to sector. For all the industries combined, the average discount between Shanghai and Hong Kong listings is approximately 85 percent. The highest average discount of 213 percent occurs in the Utilities industry while the Technology industry is a close second at an almost 200 percent average discount. However, both the Utilities and Technology industry *Average Discount* means are misleading since both share very high ranges. It is interesting to note though that the Commercial Banking, Consumer Goods and Services, and Non-Banking industries share the lowest average discounts of 17, 36, and 54 percent respectively. The occurrence of the lowest average discounts mostly in the financial sector is noteworthy but the low average discount in the Non-Banking industry is misleading as the variance is large seeing a range between a -31 percent discount and a 372 percent discount. It is probable that the 2008 Financial Crisis has much to do with the large variance which seems to drive average discounts down but this needs to be investigated further and is beyond the scope of this thesis.

Summary statistics for the explanatory variables sees a wide range of variation as well. Technology has the highest Shanghai Company Sentiment level at 5.50 and highest Hong Kong Company Sentiment level at 2.30, well above the overall respective means of 1.65 and 1.25. The price earnings ratio could reflect the market expectations for the growth prospects of the particular company or industry, suggesting for the sample period that growth expectations seems to be highest in the technology industry. However, the averages for the Shanghai and Hong Kong company sentiments also feature high standard deviations in these cases of 8.35 and 2.33 respectively, indicating that the industry has over the sample period also experienced large fluctuations in investor expectations. The lowest average company sentiment variables occur in the Commercial Banking

Industry where the earnings of the banks are less than the respective market indices. *Relative Company Sentiment (Shanghai)* and *Relative Company Sentiment (Hong Kong)* for the Commercial Banking Industry are 0.67 and 0.85 respectively. It is observed that some industries such as Basic Materials and Technology have much greater standard deviations in the company sentiment variables than others such as the Consumer Goods and Services Industry which are more stable. This is intuitive since some industries do well and others do worse in certain periods of time; however, the relationships between the *Market Sentiment* and *Company Sentiment* explanatory variables on the *Average Discount* variable vary considerably. In some instances, a high average company sentiment variable is accompanied by a high overall discount and sometimes this is not the case, indicating the possibility that the effects of the explanatory variables are not the same across the nine specified industries.

III: Methodology

The goal of this study is to determine whether the independent variables which influence the discount rate between Shanghai and Hong Kong listings have different degrees of influence across sectors. To determine this, this study runs individual panel regressions for each of the industries and one overall panel regression for the combined industries. This study uses the model used by Arquette, Brown, and Burdekin (2008) which is customized with the addition of the Hong Kong Company Sentiment as follows:

$$\begin{aligned}
 Discount_{it} = & \alpha_0 + \beta_1 ExpectedExchangeRateChange_t + \beta_2 MarketSentiment_t \\
 & + \beta_3 CompanySentiment(Shanghai)_{it} + \beta_4 CompanySentiment(HongKong)_{it} \\
 & + \beta_5 MarketCapitalization_{it} + \beta_6 Annual_Dividend_{it} + \varepsilon_{it}
 \end{aligned}$$

After these panel regressions are run for the time period from January 2008 to December 2011, the variables which are significant are studied and then a t-test comparing the regression coefficients is conducted on these respective variables to see if they are different from the coefficients derived

from the regression that includes all the industries. Special focus is placed on the *Expected Exchange Rate Change*, *Market Sentiment*, *Shanghai Company Sentiment*, and *Hong Kong Company Sentiment* variables which if determined to be significantly different indicate that these explanatory variables vary in their degree of influence across sectors and are not the same.

IV: Results and Analysis

Regressions

The All Industries regression (See Table 3) for the 2008 to 2011 period produces results that are significant for the majority of the explanatory variables. It is important to assess for each variable whether the coefficient sign is correct and consistent across all industries.

From the regression tables, a positive coefficient for the *Expected Exchange Rate Change* variable that is significant at the one percent level is observed for the majority of regressions which are performed³. This result is expected since when the RMB appreciates, the *Average Discount* between the Shanghai and Hong Kong listings would decrease as mainland companies would be viewed more favorably due to the strong exchange rate.

Looking at the chart comparisons for the *Expected Exchange Rate Change* and *Average Discount* for Jiangxi Copper for the 2008-2011 periods, this relationship isn't as clear. It is possible that this relationship is starting to slowly become less apparent as China allows foreign investors to buy and sell yuan denominated A shares in China's mainland stock exchanges in programs such as the Qualified Foreign Institutional Investor (QFII). As China's exercise of tight capital controls potentially loosens, this relationship between the Expected Exchange Rate Change and Average Discount may become less significant over time.

³ Consumer Goods and Services is the only industry in which the Expected Exchange Rate Change variable has a negative coefficient

Table 3: Regression Tables⁴

Industry	All Industries	Basic Materials	Commercial Banking	Consumer Goods & Services	Health Care	Industrials
	discount	discount	discount	discount	discount	discount
expectedexchangeratechange	7.576*** (0.236)	3.491*** (0.497)	2.079*** (0.182)	-0.932*** (0.230)	16.08*** (1.041)	3.258*** (0.287)
marketsentiment	1.057*** (0.0111)	1.423*** (0.0249)	0.927*** (0.00650)	0.818*** (0.0114)	1.635*** (0.0451)	1.049*** (0.0133)
shanghaicompanysentiment	0.0238*** (0.00159)	0.828*** (0.0131)	1.442*** (0.0138)	0.577*** (0.0102)	0.0583*** (0.00502)	0.845*** (0.00888)
hongkongcompanysentiment	-0.0698*** (0.00361)	-1.549*** (0.0273)	-0.975*** (0.0113)	-0.388*** (0.00696)	-0.125*** (0.0293)	-0.910*** (0.0109)
marketcapitalization	4.89e-07*** (2.83e-08)	9.57e-07*** (1.92e-07)	7.58e-08*** (1.09e-08)	-3.34e-06*** (3.48e-07)	-2.00e-05*** (6.78e-06)	-1.21e-06*** (1.74e-07)
dividend	-0.0782*** (0.00408)	-0.0528*** (0.00835)	-0.00137 (0.00226)	-0.0219*** (0.00412)	0.376*** (0.0372)	0.0158*** (0.00462)
Constant	-0.558*** (0.0176)	-0.710*** (0.0407)	-1.313*** (0.0148)	-0.900*** (0.0254)	-0.425*** (0.0717)	-0.856*** (0.0223)
Observations	26,516	1,894	3,788	1,894	1,894	8,523
R-squared	0.281	0.830	0.907	0.835	0.503	0.626
Number of companynames	28	2	4	2	2	9

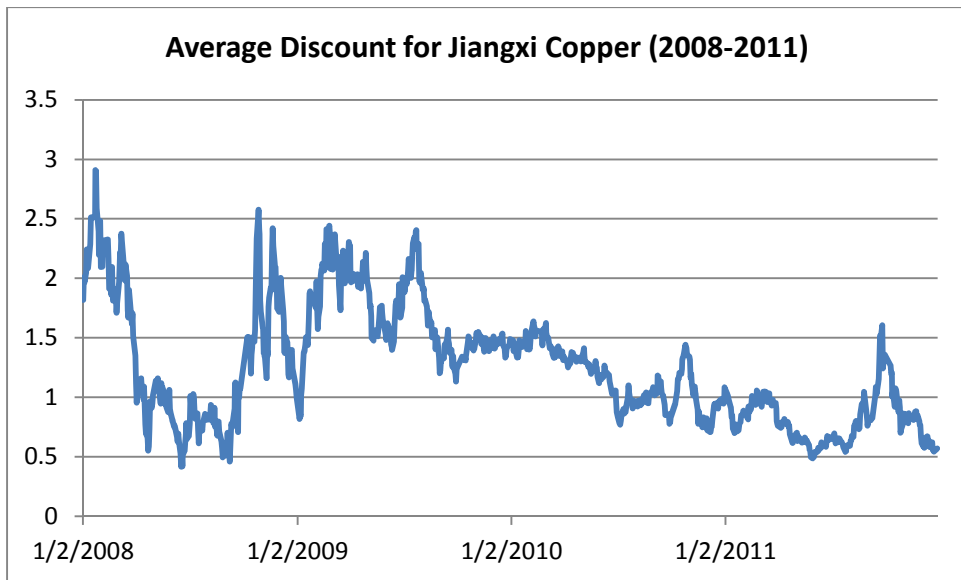
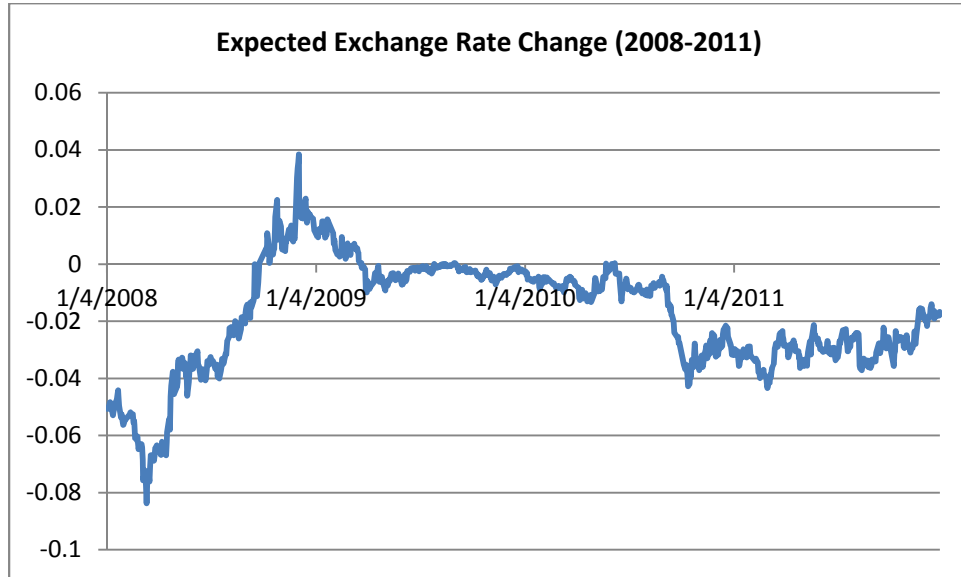
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

⁴ Step by step regression tables are available in Appendix III for each of the above industries as well as all the industries combined

Table 3 continued: Regression Tables

Industry	Non-Banks discount	Oil and Gas discount	Technology discount	Utilities discount
expectedexchangeratechange	5.491*** (0.495)	6.724*** (0.502)	4.990*** (0.774)	16.38*** (0.879)
marketsentiment	1.161*** (0.0205)	1.008*** (0.0230)	1.192*** (0.0387)	2.401*** (0.0441)
shanghaicompanysentiment	0.571*** (0.00967)	1.152*** (0.0232)	0.0935*** (0.00673)	1.090*** (0.0183)
hongkongcompanysentiment	-0.423*** (0.00820)	-1.748*** (0.0310)	-0.350*** (0.0218)	-1.741*** (0.0272)
marketcapitalization	2.33e-07*** (4.20e-08)	5.73e-07*** (3.27e-08)	2.55e-06*** (7.13e-07)	-3.08e-06*** (4.96e-07)
dividend	-0.00486 (0.0106)	-0.399*** (0.0273)	-0.355*** (0.0520)	-0.307*** (0.0146)
Constant	-1.215*** (0.0372)	-0.0516 (0.0557)	0.689*** (0.0644)	-1.363*** (0.0687)
Observations	2,841	1,894	1,894	1,894
R-squared	0.714	0.846	0.486	0.775
Number of companynames	3	2	2	2

Chart I: Relationship between Expected Exchange Rate Change and Average Discount



The coefficient for *Market Sentiment* is positive and significant at the one percent level for all the regressions run. The positive coefficient indicates that as the price earnings ratio on the Shanghai A Market Index increases or the price earnings ratio on the Hong Kong H Market Index decreases, the *Average Discount* increases meaning mainland firms are generally more attractive in Shanghai than in Hong Kong. For all industries combined, the regression table shows that for every one unit increase in the *Market Sentiment* ratio, the *Average Discount* increases by approximately 105 percent. This significant statistics indicates the large explanatory power *Market Sentiment* has over the variation observed *Average Discount*.

The *Relative Company Sentiment (Shanghai)* coefficient is positive and significant at the one percent level for all regressions run. The sign of the coefficient aligns with expectations since as mainland firms become more attractive at home than in Hong Kong, the *Average Discount* increases and vice versa. Similarly the *Relative Company Sentiment (Hong Kong)* is negative and significant at the one percent level for all regressions run.

Market Capitalization and *Dividends* are both significant at the one percent level across most of the industries.⁵ There is a general trend that as the *Market Capitalization* of the firm increases, there is a slight increase in the overall *Average Discount*. *Dividends* issued tend to create a smaller *Average Discount* suggesting this feature makes them relatively more attractive to Hong Kong investors and this is reasonable since there are no taxes on dividends in Hong Kong.

T-Test Comparing Regression Coefficients across Sectors

Given the overall significance of the explanatory variables, a t-test is able to be performed comparing the respective significant coefficients of the explanatory variables within each industry to

⁵ Market Capitalization is not significant for the Non-Banking industry and Dividends are not significant for the Commercial Banking industry.

the sensitivities derived from the compiled industry regression. In calculating the t statistic, it is assumed that the product of the covariance of both variables is equal to zero since the population size of the individual industry in comparison to all industries combined is very small⁶.

The t-test results (See Appendix IV) show that for the majority of industries, the coefficients for *Expected Exchange Rate Change*, *Market Sentiment*, *Relative Company Sentiment (Shanghai)*, and *Relative Company Sentiment (Hong Kong)* are different from the respective coefficients determined by the regression for all the industries.⁷ This finding is significant as it indicates that *Expected Exchange Rate Change*, *Market Sentiment*, *Relative Company Sentiment (Shanghai)*, and *Relative Company Sentiment (Hong Kong)* are variables which influence the *Average Discount* differently across sectors.

This result may or may not be expected but it makes intuitive sense. For example, the results suggest that some sectors are more sensitive to *Expected Exchange Rate Changes* than others and this makes intuitive sense since we would expect industries which are heavy on exports or imports to react differently to exchange rate movements. China exports mostly electrical and other machinery, including data processing equipment, apparel, textiles, iron and steel, optical and medical equipment and imports primarily machinery and electrical appliances, high tech products, primary plastic products, rolled steel products, refined oil products, iron ore, paper and cardboard, soybeans, paper pulp, rolled copper and aluminum, fertilizer, and logs⁸. These imports and exports impact and are used in a variety of different industries and the data in this paper suggests that the industries of Utilities, Health Care, and Oil and Gas are the most sensitive to exchange rate fluctuations and

⁶ $\frac{\mu_a - \mu_b}{\sqrt{\sigma_a^2 + \sigma_b^2 - 2\sigma(a,b)}}$

⁷ In the industries of Health Care (Hong Kong Company Sentiment), Industrials (Market Sentiment), and Oil and Gas (Expected Exchange Rate Change and Market Sentiment), the respective variables cannot be said to be different from the coefficients derived from the All Industry regressions at the one percent level.

⁸ Taken from IMF database 2013

Commercial Banking and Consumer Goods and Services the least sensitive but further work should be done to confirm and understand these intricate relationships.

The results also indicate that industries are affected differently by *Relative Company Sentiment (Shanghai)* and *Relative Company Sentiment (Hong Kong)* and perhaps this finding is less intuitive. It suggests that the *Average Discount* observed is more sensitive to a company doing better or worse in one industry compared to the market index than another industry indicating that there are perhaps inherent investor predilections in the focus China and Hong Kong markets. It is observed that the industries of Non-Banks, Technology, Health Care, and Consumer Goods and Services are less sensitive to the company sentiment variables used in this study and it is plausible that Chinese investors see these industries as being more stable and thus react less to good or bad price earnings ratios by the individual firms. The industries of Oil and Gas, Basic Materials, Commercial Banks, and Utilities react more to these company sentiment variables and perhaps are seen as less stable by domestic investors. Once again, additional research should be done to understand these differences.

In table 4 as a first stab into further separating these industries, I try to categorize how sensitive each industry's respective coefficient of *Market Sentiment*, *Relative Company Sentiment (Shanghai)*, and *Relative Company Sentiment (Hong Kong)* is. The average coefficient is calculated from the nine different industries and used as a benchmark to determine whether an industry is more or less sensitive to a variable. The goal is to observe patterns that could provide insight into past trends or open up avenues for future research questions.

The industries of Consumer Goods and Services, Technology, and Non-banks are the least sensitive to the market sentiment and relative company sentiment variables whereas the Basic Materials industry is consistently more sensitive to these variables. In general, when an industry is

less sensitive to the *Relative Company Sentiment (Shanghai)* variable, it is also less sensitive to the *Relative Company Sentiment (Hong Kong)* and vice versa.

It is perhaps of interest to investors when observing the Market Sentiment table in observing which industries are more or less sensitive to overall market movements and may guide their decisions. Which industries are more sensitive to market movements also may speak to the way in which these domestic economies are set up and it would be interesting to see how these sensitivities changed over time as the economy's evolved.

This simple categorization is an initial stab at understanding a much more complex picture. Further research is needed to understand these fascinating relationships and a large part of this understanding is simply waiting for more firms to be listed on both exchanges and for longer periods of time.

Table 4: Categorization

Market Sentiment	
Less	More
Industrials	Health Care
Non-Banks	Basic Materials
Oil and Gas	Utilities**
Technology	
Consumer Goods & Services*	
Commercial Banks	

Relative Company Sentiment (Shanghai)	
Less	More
Non-Banks	Oil and Gas
Health Care*	Basic Materials
Technology	Utilities
Consumer Goods & Services	Commercial Banks**
	Industrials

Relative Company Sentiment (Hong Kong)	
Less	More
Health Care	Utilities
Industrials	Oil and Gas**
Non-Banks*	Basic Materials
Technology	Commercial Banks
Consumer Goods & Services	

* least sensitive

** most sensitive

V: Conclusion

Chinese companies listed on the Shanghai Stock Exchange tend to trade at a premium when compared to their listings in Hong Kong. The discounts observed seemingly violate the law of one price even when prices have been appropriately adjusted for exchange rates and transaction fees. This study looks at possible explanatory variables which account for this discount and hypothesizes that these explanatory variables influence the discounts observed differently from industry to industry. This hypothesis is found to be true and the explanatory variables of *Expected Exchange Rate Change*, *Market Sentiment*, *Relative Company Sentiment (Shanghai)*, and *Relative Company Sentiment (Hong Kong)* are significant in influencing the *Average Discount* as well as having varying degrees of influence across sectors.

There are several shortcomings of this research which if addressed would augment and provide more understanding to the discounts observed. One such shortcoming that could be addressed if more reliable data were available would be the inclusion of more firms in each industry. If full data could be gathered on more firms, it would be possible to further understand why discounts vary across industries and why there are these varying degrees of influence by explanatory variables across industry. Additionally, as more firms in China go public and their information forcibly becomes more accurate as they integrate into the world market, a longer time frame could be adopted to observe the differences across industries which would be helpful as many business cycles could thus be observed.

This study looks to take an initial stab at the discount differences observed across industries and many avenues of potential future research exist. Observing the effect of China's loosening capital controls on these discounts is a possibility as well as further understanding the true differences across industries regarding the discount rate as more data becomes available.

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Appendix I:

Holidays Omitted from Raw Panel Regression Data Set
Shanghai Stock Exchange
New Year's Day
Lunar New Year
Ching Ming Festival
Labor Day Holiday
Dragon Boat Festival Holiday
Mid-Autumn Festival
National Day
Hong Kong Stock Exchange
New Year's Day
Lunary New Year
Good Friday
Easter Monday
Ching Ming Festival
Labor Day
Buddha's Birthday
Tuen Ng Day
SAR Establishment Day
Mid-Autumn Festival
Chinese National Day
Chung Yeung Day
Christmas Day
Christmas Holiday

Appendix II:

Summary Statistics

All Industries

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	26516	0.85	1.01	-0.34	6.16
Expected Exchange Rate Change	26516	0.00	0.01	-0.05	0.04
Market Sentiment	26516	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	26516	1.65	2.71	0.29	38.97
Company Sentiment (Hong Kong)	26516	1.26	1.19	0.18	12.86
Market Capitalization	26516	202882.20	370927.30	1025.15	2494098.00
Dividend	26516	1.19	1.10	0.00	5.57

Basic Materials

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	0.95	0.54	0.11	2.91
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	1.43	1.30	0.36	6.87
Company Sentiment (Hong Kong)	1894	0.99	0.62	0.18	3.39
Market Capitalization	1894	83069.74	30137.02	17769.07	160923.80
Dividend	1894	1.01	0.60	0.16	3.54

Consumer Goods and Services

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	0.36	0.27	-0.11	1.13
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	1.64	0.57	0.93	3.31
Company Sentiment (Hong Kong)	1894	1.79	0.88	0.83	4.59
Market Capitalization	1894	33578.54	10346.21	17930.03	64209.47
Dividend	1894	1.28	0.69	0.60	2.81

Commercial Banks

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	3788	0.17	0.29	-0.27	1.37

Expected Exchange Rate Change	3788	0.00	0.01	-0.05	0.04
Market Sentiment	3788	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	3788	0.67	0.15	0.43	1.23
Company Sentiment (Hong Kong)	3788	0.86	0.22	0.44	1.58
Market Capitalization	3788	755569.20	569677.60	123676.40	2494098.00
Dividend	3788	1.57	1.46	0.00	5.12

Non-Banks

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	2841	0.54	0.94	-0.31	3.72
Expected Exchange Rate Change	2841	0.00	0.01	-0.05	0.04
Market Sentiment	2841	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	2841	1.56	1.73	0.42	10.01
Company Sentiment (Hong Kong)	2841	1.94	2.35	0.21	12.86
Market Capitalization	2841	367590.90	303425.20	6915.76	1489442.00
Dividend	2841	1.48	0.85	0.35	3.37

Health Care

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	1.91	0.70	0.58	3.84
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	2.30	1.98	0.69	10.01
Company Sentiment (Hong Kong)	1894	1.19	0.46	0.39	2.92
Market Capitalization	1894	5362.47	3645.64	1025.15	17433.94
Dividend	1894	0.63	0.38	0.25	1.58

Industrials

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	8523	0.57	0.65	-0.34	4.72
Expected Exchange Rate Change	8523	0.00	0.01	-0.05	0.04
Market Sentiment	8523	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	8523	1.08	0.54	0.29	4.32
Company Sentiment (Hong Kong)	8523	1.02	0.48	0.20	3.03
Market Capitalization	8523	31604.84	28859.31	1715.60	157757.60
Dividend	8523	1.28	1.35	0.00	5.57

Utilities

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	2.13	0.84	0.42	6.16
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	2.57	1.03	1.36	6.35
Company Sentiment (Hong Kong)	1894	1.26	0.77	0.48	4.61
Market Capitalization	1894	44966.25	41221.87	4117.29	206851.00
Dividend	1894	0.90	0.57	0.00	2.10

Technology

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	1.99	1.85	-0.15	5.37
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	5.50	8.35	1.04	38.97
Company Sentiment (Hong Kong)	1894	2.30	2.33	0.34	11.39
Market Capitalization	1894	33070.60	31666.60	1334.22	95124.41
Dividend	1894	0.40	0.42	0.00	1.31

Oil and Gas

Variable	Obs	Mean	Std. Dev.	Min	Max
Average Discount	1894	0.83	0.43	0.05	2.72
Expected Exchange Rate Change	1894	0.00	0.01	-0.05	0.04
Market Sentiment	1894	1.40	0.19	1.10	2.14
Company Sentiment (Shanghai)	1894	1.10	0.41	0.57	2.46
Company Sentiment (Hong Kong)	1894	0.84	0.29	0.44	1.55
Market Capitalization	1894	435557.00	397785.80	30577.08	1884239.00
Dividend	1894	1.34	0.60	0.33	1.91

Appendix III:

All Industries (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	1.040*** (0.253)	5.355*** (0.224)	5.353*** (0.225)	5.292*** (0.222)	6.885*** (0.235)	7.576*** (0.236)
marketsentiment		1.048*** (0.0113)	1.048*** (0.0114)	1.057*** (0.0113)	1.059*** (0.0112)	1.057*** (0.0111)
shanghaicompanysentiment			-0.000662 (0.000960)	0.0293*** (0.00159)	0.0291*** (0.00158)	0.0238*** (0.00159)
hongkongcompanysentiment				-0.0840*** (0.00358)	-0.0843*** (0.00355)	-0.0698*** (0.00361)
marketcapitalization					5.57e-07*** (2.83e-08)	4.89e-07*** (2.83e-08)
dividend						-0.0782*** (0.00408)
Constant	0.854*** (0.00263)	-0.598*** (0.0159)	-0.596*** (0.0161)	-0.552*** (0.0161)	-0.660*** (0.0169)	-0.558*** (0.0176)
Observations	26,516	26,516	26,516	26,516	26,516	26,516
R-squared	0.001	0.244	0.244	0.260	0.271	0.281
Number of companynames	28	28	28	28	28	28

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Basic Materials (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	5.008*** (1.032)	11.92*** (0.857)	12.90*** (0.793)	2.505*** (0.480)	3.155*** (0.499)	3.491*** (0.497)
marketsentiment		1.437*** (0.0446)	1.671*** (0.0432)	1.392*** (0.0249)	1.406*** (0.0250)	1.423*** (0.0249)
shanghaicompanysentiment			0.117*** (0.00648)	0.822*** (0.0118)	0.846*** (0.0129)	0.828*** (0.0131)
hongkongcompanysentiment				-1.501*** (0.0238)	-1.563*** (0.0275)	-1.549*** (0.0273)
marketcapitalization					8.57e-07*** (1.93e-07)	9.57e-07*** (1.92e-07)
dividend						-0.0528*** (0.00835)
Constant	0.967*** (0.0108)	-1.023*** (0.0623)	-1.514*** (0.0637)	-0.684*** (0.0385)	-0.745*** (0.0407)	-0.710*** (0.0407)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.012	0.363	0.456	0.825	0.827	0.830
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Commercial Banks (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	-3.793*** (0.409)	0.103 (0.280)	4.549*** (0.263)	1.328*** (0.148)	2.058*** (0.179)	2.079*** (0.182)
marketsentiment		0.960*** (0.0141)	0.950*** (0.0119)	0.924*** (0.00653)	0.927*** (0.00650)	0.927*** (0.00650)
shanghaicompanysentiment			0.672*** (0.0173)	1.453*** (0.0126)	1.445*** (0.0125)	1.442*** (0.0138)
hongkongcompanysentiment				-0.981*** (0.0104)	-0.978*** (0.0104)	-0.975*** (0.0113)
marketcapitalization					7.67e-08*** (1.08e-08)	7.58e-08*** (1.09e-08)
dividend						-0.00137 (0.00226)
Constant	0.155*** (0.00426)	-1.175*** (0.0197)	-1.596*** (0.0199)	-1.259*** (0.0114)	-1.316*** (0.0139)	-1.313*** (0.0148)
Observations	3,788	3,788	3,788	3,788	3,788	3,788
R-squared	0.022	0.560	0.686	0.906	0.907	0.907
Number of companynames	4	4	4	4	4	4

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Consumer Goods and Services (2008-2011)	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	discount	discount	discount	discount	discount	discount
expectedexchangeratechange	-1.286*** (0.471)	1.039** (0.405)	1.178*** (0.366)	0.200 (0.202)	-0.506** (0.217)	-0.932*** (0.230)
marketsentiment		0.573*** (0.0204)	0.492*** (0.0188)	0.832*** (0.0116)	0.819*** (0.0115)	0.818*** (0.0114)
shanghaicompanysentiment			0.242*** (0.0117)	0.629*** (0.00872)	0.584*** (0.0102)	0.577*** (0.0102)
hongkongcompanysentiment				-0.418*** (0.00634)	-0.394*** (0.00691)	-0.388*** (0.00696)
marketcapitalization					-2.07e-06*** (2.57e-07)	-3.34e-06*** (3.48e-07)
dividend						-0.0219*** (0.00412)
Constant	0.356*** (0.00491)	-0.437*** (0.0285)	-0.719*** (0.0292)	-1.085*** (0.0170)	-0.969*** (0.0220)	-0.900*** (0.0254)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.004	0.297	0.427	0.826	0.832	0.835
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Health Care (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	11.02*** (1.166)	17.76*** (0.919)	17.51*** (0.918)	16.82*** (0.914)	12.36*** (0.999)	16.08*** (1.041)
marketsentiment		1.660*** (0.0463)	1.703*** (0.0474)	1.725*** (0.0470)	1.676*** (0.0461)	1.635*** (0.0451)
shanghaicompanysentiment			0.0175*** (0.00443)	0.0242*** (0.00450)	0.0333*** (0.00448)	0.0583*** (0.00502)
hongkongcompanysentiment				-0.125*** (0.0191)	0.0398 (0.0250)	-0.125*** (0.0293)
marketcapitalization					-5.75e-05*** (5.83e-06)	-2.00e-05*** (6.78e-06)
dividend						0.376*** (0.0372)
Constant	1.959*** (0.0121)	-0.340*** (0.0649)	-0.441*** (0.0694)	-0.341*** (0.0703)	-0.201*** (0.0700)	-0.425*** (0.0717)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.045	0.431	0.436	0.449	0.476	0.503
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Industrials (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	2.737*** (0.415)	6.316*** (0.380)	6.565*** (0.353)	4.111*** (0.263)	3.523*** (0.277)	3.258*** (0.287)
marketsentiment		0.882*** (0.0191)	0.974*** (0.0180)	1.050*** (0.0133)	1.047*** (0.0133)	1.049*** (0.0133)
shanghaicompanysentiment			0.269*** (0.00731)	0.843*** (0.00872)	0.839*** (0.00871)	0.845*** (0.00888)
hongkongcompanysentiment				-0.913*** (0.0109)	-0.907*** (0.0109)	-0.910*** (0.0109)
marketcapitalization					-1.13e-06*** (1.72e-07)	-1.21e-06*** (1.74e-07)
dividend						0.0158*** (0.00462)
Constant	0.584*** (0.00433)	-0.636*** (0.0268)	-1.057*** (0.0274)	-0.865*** (0.0204)	-0.830*** (0.0210)	-0.856*** (0.0223)
Observations	8,523	8,523	8,523	8,523	8,523	8,523
R-squared	0.005	0.204	0.313	0.624	0.626	0.626
Number of companynames	9	9	9	9	9	9

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Non-Banks (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	-6.602*** (0.727)	-2.121*** (0.619)	-2.389*** (0.577)	4.099*** (0.424)	5.423*** (0.473)	5.491*** (0.495)
marketsentiment		1.104*** (0.0312)	1.166*** (0.0292)	1.158*** (0.0206)	1.161*** (0.0204)	1.161*** (0.0205)
shanghaicompanysentiment			0.0687*** (0.00334)	0.573*** (0.00967)	0.572*** (0.00961)	0.571*** (0.00967)
hongkongcompanysentiment				-0.424*** (0.00789)	-0.424*** (0.00784)	-0.423*** (0.00820)
marketcapitalization					2.40e-07*** (3.90e-08)	2.33e-07*** (4.20e-08)
dividend						-0.00486 (0.0106)
Constant	0.509*** (0.00758)	-1.020*** (0.0436)	-1.216*** (0.0418)	-1.139*** (0.0294)	-1.224*** (0.0323)	-1.215*** (0.0372)
Observations	2,841	2,841	2,841	2,841	2,841	2,841
R-squared	0.028	0.326	0.414	0.710	0.714	0.714
Number of companynames	3	3	3	3	3	3

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Oil & Gas (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	3.726*** (0.994)	7.547*** (0.920)	7.091*** (0.918)	1.044** (0.449)	4.451*** (0.503)	6.724*** (0.502)
marketsentiment		0.941*** (0.0464)	0.907*** (0.0465)	1.205*** (0.0227)	1.140*** (0.0223)	1.008*** (0.0230)
shanghaicompanysentiment			0.120*** (0.0233)	1.433*** (0.0200)	1.335*** (0.0206)	1.152*** (0.0232)
hongkongcompanysentiment				-2.128*** (0.0269)	-1.968*** (0.0285)	-1.748*** (0.0310)
marketcapitalization					4.30e-07*** (3.30e-08)	5.73e-07*** (3.27e-08)
dividend						-0.399*** (0.0273)
Constant	0.849*** (0.0104)	-0.455*** (0.0649)	-0.541*** (0.0666)	-0.626*** (0.0321)	-0.734*** (0.0318)	-0.0516 (0.0557)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.007	0.185	0.196	0.814	0.829	0.846
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Technology (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	0.267 (0.970)	5.234*** (0.818)	4.515*** (0.784)	3.566*** (0.724)	4.074*** (0.771)	4.990*** (0.774)
marketsentiment		1.224*** (0.0413)	1.133*** (0.0400)	1.154*** (0.0368)	1.179*** (0.0391)	1.192*** (0.0387)
shanghaicompanysentiment			-0.0134*** (0.000991)	0.0990*** (0.00616)	0.104*** (0.00664)	0.0935*** (0.00673)
hongkongcompanysentiment				-0.368*** (0.0200)	-0.383*** (0.0215)	-0.350*** (0.0218)
marketcapitalization					1.32e-06* (6.98e-07)	2.55e-06*** (7.13e-07)
dividend						-0.355*** (0.0520)
Constant	1.993*** (0.0101)	0.298*** (0.0577)	0.496*** (0.0571)	0.693*** (0.0536)	0.625*** (0.0644)	0.689*** (0.0644)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.000	0.318	0.378	0.473	0.474	0.486
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Utilities (2008-2011) VARIABLES	(1) discount	(2) discount	(3) discount	(4) discount	(5) discount	(6) discount
expectedexchangeratechange	0.727 (1.556)	6.082*** (1.471)	6.391*** (1.485)	17.32*** (0.866)	18.12*** (0.972)	16.38*** (0.879)
marketsentiment		1.319*** (0.0742)	1.316*** (0.0742)	2.507*** (0.0464)	2.480*** (0.0487)	2.401*** (0.0441)
companysentiment			-0.0221 (0.0147)	1.080*** (0.0195)	1.070*** (0.0203)	1.090*** (0.0183)
hkcompanysentiment				-1.820*** (0.0291)	-1.807*** (0.0300)	-1.741*** (0.0272)
marketcapitalization					9.10e-07* (5.09e-07)	-3.08e-06*** (4.96e-07)
dividend						-0.307*** (0.0146)
Constant	2.132*** (0.0162)	0.305*** (0.104)	0.368*** (0.112)	-1.796*** (0.0728)	-1.787*** (0.0729)	-1.363*** (0.0687)
Observations	1,894	1,894	1,894	1,894	1,894	1,894
R-squared	0.000	0.144	0.145	0.721	0.722	0.775
Number of companynames	2	2	2	2	2	2

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix IV:

Basic Materials				
	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	3.49	0.50	7.42	Y
Market Sentiment	1.42	0.02	-13.43	Y
Shanghai Company Sentiment	0.83	0.01	-61.15	Y
Hong Kong Company Sentiment	-1.55	0.03	53.72	Y

Commercial Banks				
	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	2.08	0.18	18.44	Y
Market Sentiment	0.93	0.01	10.11	Y
Shanghai Company Sentiment	1.44	0.01	-102.41	Y
Hong Kong Company Sentiment	-0.98	0.01	76.31	Y

Consumer Goods and Services				
	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	-0.93	0.23	25.82	Y
Market Sentiment	0.82	0.01	15.02	Y
Shanghai Company Sentiment	0.58	0.01	-53.89	Y
Hong Kong Company Sentiment	-0.39	0.00	86.55	Y

Health Care				
	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	16.08	1.04	-7.97	Y
Market Sentiment	1.64	0.05	-12.44	Y
Shanghai Company Sentiment	0.06	0.01	-6.70	Y
Hong Kong Company Sentiment	-0.13	0.03	1.87	N

Industrials				
	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	3.26	0.29	11.62	Y
Market Sentiment	1.05	0.01	0.46	N
Shanghai Company Sentiment	0.85	0.01	-91.70	Y
Hong Kong Company Sentiment	-0.91	0.01	73.17	Y

Non-Banks

	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	5.49	0.50	3.80	Y
Market Sentiment	1.16	0.02	-4.46	Y
Shanghai Company Sentiment	0.57	0.01	-56.19	Y
Hong Kong Company Sentiment	-0.42	0.01	39.42	Y

Oil and Gas

	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	6.72	0.50	1.54	N
Market Sentiment	1.01	0.02	1.92	N
Shanghai Company Sentiment	1.15	0.02	-48.57	Y
Hong Kong Company Sentiment	-1.75	0.03	53.77	Y

Technology

	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	4.99	0.77	3.20	Y
Market Sentiment	1.19	0.04	-3.35	Y
Shanghai Company Sentiment	0.09	0.01	-10.21	Y
Hong Kong Company Sentiment	-0.35	0.02	12.68	Y

Utilities

	Coefficient	Std. Deviation	T-test	Significant at 1%
Expected Exchange Rate Change	16.38	0.88	-9.67	Y
Market Sentiment	2.40	0.04	-29.55	Y
Shanghai Company Sentiment	1.09	0.02	-58.15	Y
Hong Kong Company Sentiment	-1.74	0.03	60.91	Y