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美國與亞太地區之驗證

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Investment? Empirical Evidence from US and Asia

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中 文 摘 要

本文以美國投資者角度，分析在美國市場與亞太新興市場中，公司治理評等指標是否將有助於投資績效之提升。主要實證結果如下：第一，美國市場中，混合揭露基礎下之公司治理評等指標對投資績效有正面效果；第二，在亞太新興市場中，公司治理評等無法為投資績效帶來助益甚至具有反向之效果；第三，利用 LLSV(1998)文獻指出國家不同法源將對投資人保護程度有所差異，本文在此顯示國家所屬之法律體制並非影響公司治理評等對投資績效效果之因素；第四，利用里昂證券對亞太新興市場制定治理評等之七大項目，本文發現其中唯有公平性(fairness)有助於投資績效提升，然而，董監事獨立性(independence)、可信賴性(accountability)與責任性(Responsibility)則對投資績效無法產生正面效果且有反向反應產生。

關鍵字：公司治理、投資績效、規模效果、淨值市值比效果

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ABSTRACT

This is the first study that investigates the relation between Corporate Governance and investment performance from the point of view of American investors. We utilize the empirical finding of American and the Asian-Pacific's samples and show that better disclosure rankings on a composite basis result in higher investment performance in American samples. However, in the Asian-Pacific samples, the Corporate Governance rankings of Credit Lyonnais Securities Asia (CLSA) do not show useful information in investors' portfolio decision. The research also considers the performance of different corporate governance portfolios under different legal origins. The results do not support the hypothesis that corporate governance index of CLSA provides useful information of portfolio decisions for countries with weak legal origin.

Keywords: Corporate Governance, investment performance, size effect, BM effect

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王舒慧　謹誌於國立交通大學財務金融所碩士班

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1. INTRODUCTION

After Enron event (2001), WorldCom event (2002), Global Crossing Event, and AOL Time Warner event broke out, many enterprises, which were considered having sound capital structure, unexpectedly went into bankruptcy. As the bankruptcy and expropriation occur, minor shareholders suffer a great deal of capital loss. Investors gradually lose the investment willing and reduce investment in capital market. To reduce the cost of asymmetric information and decrease loss due to corporate financial risk, Corporate Governance starts to play an important role in the investment strategy for shareholders. On the other hand, enterprises around the world also proceed to set Corporate Governance system to enhance shareholders' confidence in the investment of equity markets. Thus, the issue related to Corporate Governance has become a popular issue in academic and financial markets recently.

The international securities firms have announced many kinds of Corporate Governance Indexes in succession in order to measure the level of disclosure information of each company. For example, in 2001, Credit Lyonnais Securities Asia (CLSA) established Corporate Governance rankings, which includes 495 companies in 25 emerging markets in Asia and South America. In October 2002, Standard & Poor's (S&P's) announced transparency and disclosure rankings (T&D Rankings) for firms included in the S&P's Global 1200 Index as well as more than 300 companies in S&P/TOPIX emerging markets Indexes. These Indexes not only provide potential insights for future investment strategies for investors but also quantify the level of Corporate Governance of each company. Therefore, the Indexes benefit the academic researches in Corporate Governance.

Because these Indexes have provided a quantified Index for measuring the level of Corporate Governance of a company, some related studies in Corporate Governance have been documented. Patel and Dallas (2002) (12) argue that there is negative relation between

the degree of Corporate Governance and S&P 500 capital market risk, and S&P's T&D Rankings based on annual reports is positive relative to book-to-market ratio and firm size. Cheng, Collins and Huang (2003) (4) further discussed the relation between T&D Rankings and market risk, excess return, and earnings response coefficients (ERC) by utilizing Event Study. Durnev and Kim (2003) (6) show that managers opt to disclose more information when they have the plan of outside financing or the concentration of cash-flow rights, especially for firms from countries with poorer investor protection. The results also indicate that there exists the positive relation between Corporate Governance and firm value with model inference. However, the empirical research of social awareness of CLSA Corporate Governance Index is not directly relative to firm value.

Gompers, Ishii, and Metrick (2003) (9) use the influence of 24 governance rules[1], and construct a Governance Index to show the level of shareholder rights in around 1500 large firms during 1990s. The results show that an investment strategy that buys firm shares with the stronger shareholders' rights and sells firm shares with the weakest rights would have 8.5 percent abnormal returns per year during the sample period by using multi-factors regression. The results also find that the firms with stronger shareholder rights have higher firm value, higher profits, higher sales growth, lower capital expenditures, making fewer corporate acquisitions. Brown and Caylor (2004) (3) use Gov-Score[2] to analyze the relation between Corporate Governance and the firm performance. They relate Gov-Score to firm performance, such as return on asset, Tobin's Q, and dividend payment and point out board of directors, executive and director compensation are significantly correlated with good performance for three performance measures; nevertheless, the association disappears when they change Gov-Score into G-Index which Ashbaugh, Collins, LaFond (2004) use. Cremers and Nair

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[1] These 24 provisions include 22 firm-level provisions and six state laws (four of the laws are analogous to four of the firm-level provisions).
[2] Gov-Score is composed of audit, board of directors, charter/bylaws, director of education, director compensation, ownership, progressive practices, and state of incorporation.

(2005) (5) investigate how the market for corporate control (external governance) and shareholder activism (internal governance) interact. The results show that a portfolio that buys firms with the highest level of takeover vulnerability and shorts firms with the lowest level of takeover vulnerability generates an annual abnormal return of 10% to 15% only when public pension fund (block holders) ownership is high as well.

We could find that there was different relation between investment performance and Corporate Governance composed of different factors. To the best of our knowledge, there is no research that uses S&P T&D Rankings and CLSA CG Rankings to discuss the relation between Corporate Governance and equity investment performance. Furthermore, most researches that have been published so far utilized static ratio[3], and it might result in the inaccuracy because of information delay. Focusing on investors' viewpoint and constructing long-term portfolio, this research manages to discuss what Corporate Governance means for investors and the effect it causes the investment performance. These are also the main motivation and contribution in this thesis.

The statement in Mickinsey Quarterly Journal in 2002 describes that legal persons would be willing to pay 10% to 12% spread for investing the firms with stronger Corporate Governance in more than 180 samples of 6 emerging markets. However, would it be worthwhile to pay more for external investors? Does Corporate Governance really bring shareholders positive performance? Or, Corporate Governance is just the implement to strengthen investors' confidence. From the perspective of American investors, this research will discuss the effects upon investment performance and try to answer the queries above by science analysis.

From the perspective of investors, we discuss whether the corporate governance indices provide useful benchmarks for equity Investment. The leading purposes are as follows:

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[3] Static ratios are the Index cannot change following the time such as return on asset, Tobin's Q, and so on.

(1) With S&P500 sample firms, this paper analyzes the influence of Corporate Governance system upon investors' performance in the developed country.

(2) With the sample firms of Asian Pacific countries, the paper discusses if Corporate Governance is positively relative to the performance in emerging markets. In addition, we also add the variable of legal system and investigate how the performance responses to different law-origins.

(3) Finally, this research compares the difference in the results of two samples and the contributions of Corporate Governance system towards the performance.

The rest of this paper is organized as follows. Section 2 explains the methodology adopted. Section 3 describes the data used in this study. Section 4 presents the empirical results, and makes some conclusions in the last section.

2. METHODOLOGY

The substance of the thesis is to analyze the relation between Corporate Governance Index and the performance. Roughly, Corporate Governance could distinguish into three categories, which include ownership structure, financial transparency and information disclosure, as well as board and management structure and process. According to previous researches, it would reduce asymmetric information problems between minor shareholders and supervisors and also prevent supervisors from the expropriation behavior when the supervisors disclose more internal information. From the perspective of minor shareholders, it could not only protect minor shareholders' wealth from expropriating, but also raise firm value indirectly and investment motive. The major point of the thesis is to discuss the association between Corporate Governance Indexes and equity investment. This paper will utilize the samples of American firms and the Asian Pacific firms at the same time. America is one of the earliest countries, which starts to execute Corporate Governance system, so we also compare the different effects in American firms and the firms in emerging equity markets. Vassalou and Xing (2004) (13) construct Default Risk Index. In order to interpret the association between default risk and capital return, they utilize sorting approach to controlling firm size and the growth. We would follow the approach of Vassalou and Xing's research to analyze the relation between Corporate Governance and investment performance.

Capital Asset Pricing Model (CAPM) interprets the relation between the expected return of the securities and market risk in equilibrium of capital markets. Systematic risk is one of the most important variables to explain the expected return of the securities or portfolios. Besides systematic risk, there might exist a few market anomalies such as size effect, book-to-market ratio effect, January effect, and so on. These anomalies would influence the expected return of the securities as well. The discussion about the market anomalies has continued in academic studies until now.

Besides Corporate Governance Indexes, the variables of this thesis would include systematic risk, firm size, and book-to-market ratio. By controlling these variables, it is supposed to reduce the influence of the interference and measurement errors. This research could firmly focus on the performance of equity investment related to Corporate Governance Indexes.

With the level of Corporate Governance Indexes, we sort all stocks into five portfolios. We construct the equally weighted portfolios and analyze the average return of these portfolios. Recall that both firm size and BM effects are considered equity market anomalies according to the literature of the Capital Asset-Pricing Model. We also examine average firm size and average book-to-market ratio in each portfolio. Subsequently, this paper further investigates the possible link between Corporate Governance Indexes and those effects in the thesis. The analysis will focus on equally weighted portfolios, since this is the weighting scheme typically employed in studies that consider the size and BM effects. However, all the results of the paper remain qualitatively the same when portfolios are value-weighted.

In order to analyze all variables related to the average returns of the portfolios at the same time, this paper also runs three-factors regression, which was issued by Fama and French in 1993 (7), and describes all effects on the return of equity investment in S&P500 samples. The F-F three-factor model is as follows:

$$R_i - R_f = \alpha + \beta_1 \left(R_M - R_f \right) + \beta_2 SMB_i + \beta_3 HML_i + \varepsilon_i$$

where α is the intercept term of the regression, which is also known as the Jensen's alpha under Fama-French three-factor model; SMB_i is the size risk premium over the period; HML_i is the book-to-market risk premium. The estimated coefficients α can be interpreted as Jenson's alpha, which is also the abnormal return of the portfolio i after controlling systematic risk, firm size, as well as BM ratio.

3. DATA

S&P500 firms were used as American samples in this thesis; we collect the listed firms as Asian Pacific samples in nine countries, including Taiwan, Hong-Kong, China, South Korea, Malaysia, Singapore, India, and Indonesia. Besides, there are several variables we need in this thesis, including Corporate Governance Index, the monthly return of equity investment, systematic risk, firm size, and book-to-market ratio. This paper will discuss these variables in detail as follows.

3.1 Corporate Governance Indexes

3.1.1 S&P500 samples

Accordingly, S&P's issued Transparency and Disclosure Rankings (T&D Rankings) in 2002. T&D Rankings examines company annual reports for 98 possible information items and broadly divides them into three sub-categories: ownership structure and information disclosure (28 items), financial transparency and information disclosure (35 items), as well as board and management structure and process (35 items). Companies are ranked in deciles order. The overall ranking reflects the ratio of the number of present attributes out of the possible 98. Individual rankings for each of the three sub-categories are also calculated. S&P's T&D Rankings is divided into annual reports basis and composite basis, which includes 10-Ks and proxy statements with disclosure resource. This research will discuss T&D Rankings on both bases and analyze what is different between those.

3.1.2. Asian samples

This paper uses Corporate Governance (CG) Index, which was issued by CLSA in April 2001. The questionnaire is designed such that all questions have strictly binary answers. The

questionnaire assessed the companies on 57 main issues divided into seven key criteria that they take to constitute the concept of good CG: management discipline, transparency, independence, accountability, responsibility, fairness and social responsibility. The first six criteria was given an equal weight of 15% and the last, social responsibility, were given a lower weight of 10%.

3.2 Calculating the Average Investment Return

The paper uses the daily closing prices of S&P500 firms, collecting from Compustat database. The sample period is from 2002 to 2003. In shareholders perspective of long-term holding, we compute monthly average return of every security based on closing stock prices, then sort all stocks into portfolios and construct monthly equally weighted portfolios. Asian data are obtained from Datastream International. Closing prices are drawn for nine emerging markets in Asia. The beginning of the samples is January 2, 2001 and it extends to December 31, 2003. With the view of American investors, we exchange them for U.S. dollars and calculate the daily average return of the stocks and monthly equally weighted portfolios.

3.3 Firm Size

American samples are obtained from Compustat database. Due to the slight change of the firm size, we take average capitalization as the proxy variable of firm size for the period of 2002 and 2003. At the same time, this paper collects Asian data from Datastream International and obtains market value from 2001 to 2003. We exchange them for U.S. dollars and take average market value as firm size.

3.4 Market Risk

Sharpe (1963) established market model, which described that the expected returns of the

securities could be explained by the expected return of market portfolio, and the model is following:

Ri =α+βRm +ε.

In the model, β is the degree of expected return of the securities which could be interpreted by market portfolio.

American data is obtained from CRSP database. With the concept of log-term buying and holding, this research utilizes Nasdaq/NYSE/SP value-weighted Index as market portfolio and computes β in each company with Market Model. In the same way, we collect Asian data from Datastream International. The sample period is from 2001 to 2003. World Index Return is used as market portfolio return. We use World Index Return and the return of the securities to calculate systematic risk with Market Model.

3.5 Book to Market Value Ratio (BM Ratio)

This research collects price to book value ratio of American sample firms at the end of 2002 and 2003 from Compustat Database. Then we make it reverse and average. Asian sample firms are obtained from Datastream database.

4. RESULTS

4.1 Empirical Analysis with S&P500 Firms: the Test of Market Anomalies

4.1.1. Size Effect Test

This research excludes missing data and proceeds with the issue with more than 400 companies. We sort all stocks into quintiles by firm size. Equally weighted portfolios are constructed to test if firm size effect exists for analytic period. In Table 1, Portfolio 1 is the portfolio with the smallest firm size and Portfolio 5 is the portfolio with the largest firm size. The return difference between the equally weighted small-firm-size portfolio and large-firm-size portfolio is 70 basis points (bps) per month. The difference is statistically significant at the 1 percent level by ANOVA test. Therefore, there exists firm size effect in S&P500 firms in this period.

4.1.2. Book-to-Market Effect Test

In the same way, this paper tests whether there exists book-to-market effect in the sample period. We sort stocks into quintiles by book-to-market ratio. Portfolio 1 contains the stocks with the highest book-to-market ratio, which are also defined as value portfolio, and portfolio 5 is the portfolio defined as growth portfolio with the lowest book-to-market ratio. In Table 1, there shows that the return difference between valued portfolio and growth portfolio is about 70 bps and statistically significant at the 5 percent level with ANOVA test. There also exists book-to-market effect in S&P500 firms in the sample period. The results are the same as those in Fama and French (1992) (8).

TABLE 1   SUMMARY STATISTICS OF S&P 500 SAMPLES

Panel A: Size Effect Test

	Small				Large
	1	2	3	4	5
Return	0.012991	0.011039	0.012365	0.008739	0.00622
Average size	769.09	1682.47	3015.86	5561.08	18275.79
Pr > F			0.0068***		

Panel B: Book-to-Market Effect Test

	High				Low
	1	2	3	4	5
Return	0.01272	0.010486	0.011427	0.009826	0.005985
Average BM	0.1308	0.2503	0.3523	0.4789	0.7947
Pr > F			0.0223**		

Note:

1. Numbers of firms in each portfolio is equal.

2. In panel A, Portfolio 1 is the portfolio with the smallest firm size and Portfolio 5 is the portfolio with the largest firm size.

3. In panel B, Portfolio 1 contains the stocks with the highest book-to-market ratio, which is also defined as value portfolio, and Portfolio 5 is the portfolio defined as growth portfolio with the lowest book-to-market ratio.

4. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.2 Empirical Analysis with S&P500 Firms: Corporate Governance Effect

Table 1 shows that size and BM are intimately related to average return of portfolios. Therefore, we try to control both effects by sorting and further analyze the link between Corporate Governance and investment performance. This study will individually utilize T&D Rankings on annual-reports and composite bases as CG Indexes. The results are as follows.

4.2.1 Annual-Reports Basis

To analyze the link between investment performance and T&D Rankings, we sort all stocks into three portfolios by firm size or book-to-market ratio to control the market anomalies. Subsequently, each BM-sorted and size-sorted portfolios is subdivided into sub-portfolios by T&D Rankings on annual-reports basis. We classify them into sub-portfolio A when the score of T&D ranking on annual-reports basis is higher than 5, and otherwise into sub-portfolio B.

Table 2 examines the presence of the Corporate Governance effect in BM-sorted portfolios. It reveals that Corporate Governance is negatively relative to the average return in portfolio 1, but there is positive relation in the other portfolios. However, the difference of the average return is statistically insignificant on paired T-test. It also shows that systematic risk of sub-portfolio B is higher than that of sub-portfolio A, and implies the higher average return of sub-portfolio B could result form the risk. This research analyzes investment performance with Sharpe's Index[4], Treynor's Index[5], and Jensen's alpha[6] to show the investors could obtain

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[4] $SR_i = \dfrac{E(R_i) - R_f}{\sigma_i}$ where $E(R_i)$ is the expected return of the portfolio i; R_f is the risk-free rate of interest; σ_i is the standard deviation of portfolio i, and also defined as total risk and also defined as total risk.

[5] $TR_i = \dfrac{E(R_i) - R_f}{\sigma_i}$ where $E(R_i)$ is the expected return of the portfolio i; R_f is the risk-free rate of interest; β_i is the systematic risk of portfolio i.

the premium in each unit risk. Within Sharpe's Index, the performance of sub-portfolio A is greater than that of sub-portfolio B except for value portfolio. The results are the same within Treynor's Index. Therefore, it is not obvious association that the premium is due to the risk. The Jensen's alpha of Sub-portfolios in portfolio 1 and 2 is statistically significant, meaning that the investment performance of the portfolio beats that of market portfolio. We infer that the situation result from BM effect.

Table 3 reveals the presence of Corporate Governance effect in size-sorted portfolios. It shows that Corporate Governance is negatively relative to the average return in portfolio 1, but there is positive relation in the other portfolios. However, the difference of the average return is statistically insignificant on paired T-test. There is not obvious Corporate Governance effect. However, every sub-portfolio B in trisections has higher systematic risk, it may be the reason for higher risk premium. Except for smallest size portfolio, there is greater investment performance in sub-portfolio A with Sharpe's Index and Trenyor's Index. Within Jenson's alpha, the sub-portfolios A are all statistically significant. It implies that the performance with greater Corporate Governance system would beat that of market portfolio.

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[6] Jenson's alpha: $E(R_i) - R_f = \alpha_i + \beta_i(E(R_M) - R_f)$ where $E(R_i)$ is the expected return of the portfolio i; R_f is the risk-free rate of interest; β_i is the systematic risk of portfolio i; $E(R_m)$ is the expected return of market portfolio.

TABLE 2   CG EFFECT ON ANNUAL-REPORTS BASIS WITH CONTROLLED BM PORTFOLIOS OF
S&P 500 SAMPLES

	High BM		Low BM
	1	2	3
Penal A: Average Return			
A	0.009292	0.010583	0.008925
B	0.015217	0.009406	0.006937
A-B	-0.00593	0.001178	0.001988
Pr > |t|	(0.2488)	(0.7087)	(0.8382)
Penal B: Beta of each BM portfolio			
A	0.936615	1.040208	1.025289
B	1.221316	1.15748	1.291579
Penal C: Sharpe Index			
A	0.175218	0.168563	0.130141
B	0.234508	0.130839	0.060194
Penal D: Treynor's Index			
A	0.009064	0.008871	0.007004
B	0.012401	0.006678	0.003255
Penal E: Jensen's Alpha			
A	0.007491	0.008653	0.006956
	(0.005764)***	(0.025708)**	(0.144913)
B	0.013233	0.007339	0.004441
	(0.003481)***	(0.009263)***	(0.567812)

Note:

1. We sort all stocks into three portfolios by book-to-market ratio first, and Portfolio 1 is the portfolio with the highest BM ratio. Subsequently, each BM-sorted portfolio is subdivided into sub-portfolios by T&D Rankings on annual-reports basis. We classify them as A sub-portfolio when the score of T&D ranking on annual-reports basis is higher than 5, and otherwise w as B sub-portfolio.
2. Numbers of firms in each portfolio is around 75.
3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

TABLE 3   CG EFFECT ON ANNUAL-REPORTS BASIS WITH CONTROLLED SIZE PORTFOLIOS
OF S&P 500 SAMPLES

	Small		Large
	1	2	3
Panel A: Average Return			
A	0.011853	0.010721	0.006962
B	0.015398	0.010512	0.006378
A-B	-0.00354	0.000209	0.000583
Pr > |t|	(0.53)	(0.9762)	(0.8934)
Penal B: Beta of each size portfolio			
A	1.072322	0.962501	0.974948
B	1.235833	1.261903	1.156435
Panel C: Sharpe Index			
A	0.167653	0.179006	0.123745
B	0.192159	0.125862	0.087293
Penal D: Treynor's Index			
A	0.008975	0.009534	0.006404
B	0.009927	0.006711	0.004477
Panel E: Jensen's Alpha			
A	0.009822	0.008837	0.005151
	(0.050028)*	(0.030634)**	(0.050972)*
B	0.013178	0.008321	0.004362
	(0.002309)***	(0.135359)	(0.125248)

Note:

1. We sort all stocks into three portfolios by firm size first, and Portfolio 1 is the portfolio with the smallest firm size. Subsequently, each firm size-sorted portfolio is subdivided into sub-portfolios by T&D Rankings on annual-reports basis. We classify them as A sub-portfolio when the score of T&D ranking on annual-reports basis is higher than 5, and otherwise as B sub-portfolio.

2. Numbers of firms in each portfolio is around 73.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.2.2 Composite Basis

S&P issued T&D Rankings on composite basis, which focused on the disclosure information in annual reports and regulatory filings in 2002. Table 4 examines the association between investment performance and T&D Rankings on composite basis. The first one is defined as value portfolio, and the third one is growth portfolio. We sort all stocks into BM trisections first, and then sort each BM trisection into two T&D Rankings portfolios. The stocks with higher T&D Rankings are defined as sub-portfolio A, and the others are sub-portfolio B. In the same way, this study also tries to control firm size effect below and address in Table 5.

In Table 4, this research analyzes T&D effect on composite basis in BM sorted portfolio. It proceeds to test if the average returns of sub-portfolios differ. Although the average return of sub-portfolio A in first portfolio is lower than that of sub-portfolio B, the difference of the average return is statistically insignificant on paired T-test. Subsequently, the results find that the systematic risk of sub-portfolio B is higher than that of sub-portfolio A. It might be the reason that the difference of the average return is not prominent. On further steps, this study utilizes Sharpe's Index and Treynor's Index measuring the performance. It reveals that the performance of sub-portfolio A is greater than that of sub-portfolio B. It also implies that T&D Rankings on composite basis could result in better investment performance. Finally, the research shows that value portfolio with better performance could beat the market portfolio. It exists BM effect in the sample period.

Table 5 reveals CG on composite basis effect in firm size sorted portfolio. The results in Table 5 are similar to those in BM sorted portfolio. Although there is not prominent difference in the average return of the portfolios sorted by T&D Rankings on composite basis; however, considering of risk factor, there is greater investment performance in each sub-portfolio A. Broadly speaking, T&D Rankings on composite basis would induce positive effect on the

investment performance.

TABLE 4   CG EFFECT ON COMPOSITE BASIS WITH CONTROLLED BM PORTFOLIOS
OF S&P 500 SAMPLES

	High BM		Low BM
	1	2	3
Penal A: Average Return			
A	0.01047	0.010436	0.008593
B	0.01252	0.010287	0.00791
A-B	-0.00205	0.000149	0.000683
Pr > |t|	(0.7021)	(0.9768)	(0.8909)
Penal B: Beta of each BM portfolio			
A	0.884104	0.951114	1.061506
B	1.165667	1.186854	1.163221
Penal C: Sharpe Index			
A	0.228335	0.184166	0.118242
B	0.189378	0.139905	0.084874
Penal D: Treynor's Index			
A	0.011713	0.009912	0.006278
B	0.009907	0.007209	0.004554
Penal E: Jensen's Alpha			
A	0.00875	0.008605	0.006565
	(0.000106)***	(0.0372)**	(0.150104)
B	0.010525	0.008196	0.005646
	(0.008594)***	(0.019086)**	(0.358577)

Note:

1. We sort all stocks into three portfolios by book-to-market ratio first, and Portfolio 1 is the portfolio with the highest BM ratio. Subsequently, each BM-sorted portfolio is subdivided into sub-portfolios by T&D Rankings on composite basis. We classify them as A sub-portfolio when the score of T&D ranking on composite basis is higher than 5, and otherwise as B sub-portfolio.

2. Numbers of firms in each portfolio is around 73.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

TABLE 5   CG EFFECT COMPOSITE BASIS WITH CONTROLLED SIZE PORTFOLIOS OF

S&P 500 SAMPLES

	Small		Large
	1	2	3
Penal A: Average Return			
A	0.012163	0.010962	0.007205
B	0.014111	0.010369	0.006229
A-B	-0.00195	0.000593	0.000976
Pr > |t|	(0.7203)	(0.8464)	(0.85)
Penal B: Beta of each size portfolio			
A	1.023893	0.984952	0.942516
B	1.231882	1.1368	1.146117
Penal C: Sharpe Index			
A	0.185295	0.177141	0.132023
B	0.173695	0.145324	0.086474
Penal D: Treynor's Index			
A	0.009801	0.009324	0.007044
B	0.009084	0.007591	0.004399
Penal E: Jensen's Alpha			
A	0.010186	0.00904	0.005433
	(0.018819)**	(0.019391)**	(0.117532)
B	0.011898	0.00832	0.004223
	(0.015159)**	(0.039263)**	(0.067136)*

Note:

1. We sort all stocks into three portfolios by firm size first, and Portfolio 1 is the portfolio with the smallest firm size. Subsequently, each firm size-sorted portfolio is subdivided into sub-portfolios by T&D Rankings on composite basis. We classify them as A sub-portfolio when the score of T&D ranking on composite basis is higher than 5, and otherwise as B sub-portfolio.

2. Numbers of firms in each portfolio is around 73.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.2.3 Three-factor Model

The regression methodology, which is built by Fama and French (1993) (7), controls the factors, composed of systematic risk, firm size, as well as BM at the same time. This study analyzes average return of portfolios grouped on the level of T&D Rankings, and then run three-factor model individually. The F-F three-factor model is as follows:

$$R_i - R_f = \alpha + \beta_i \left(R_M - R_f \right) + \beta_2 SMB_i + \beta_3 HML_i + \varepsilon_i$$

where α is the intercept term of the regression, which is also known as the Jensen's alpha under Fama-French three-factor model; SMB_i is the size risk premium over the period; HML_i is the book-to-market risk premium.

In Table 6, there are the results about F-F three factors model. The coefficients are all statistically significant at the level of 5 percent with better CG portfolios. The coefficients of (Rm-Rf) and SMB are also statistically significant with worse CG portfolios. The evidence discovers an investment strategy that buying firm shares in higher deciles of T&D Rankings on composite basis and selling firm shares in lower deciles of those would have earned abnormal return of 3 percent per mouth during the sample period. However, the results in Table 7 shows the strategy dose not work by portfolios grouped in T&D Rankings on annual-reports basis. The results are similar to above ones, proving T&D Rankings on composite basis will positively influence on investment return again.

TABLE 6   FAMA-FRENCH THREE-FACTORS REGRESSIONS WITH CG SORTED PORTFOLIOS ON
COMPOSITE BASIS

Panel A: better CG portfolio on composite basis			
	Intercept	Rm-Rf	SMB	HML
Coefficient	0.00233	0.00846***	0.00190**	0.00398***
t-stat	1.00	15.81	2.43	4.40
Pr>|t|	0.3285	<.0001	0.0247	0.0003
R-Square	0.9672			
Adj R-Sq	0.9623			
Panel B: worse CG portfolio on composite basis			
	Intercept	Rm-Rf	SMB	HML
Coefficient	-0.02861	0.01291**	0.01404*	-0.00122
t-stat	-1.24	2.44	1.81	-0.14
Pr>|t|	0.2289	0.0243	0.0849	0.8934
R-Square	0.4144			
Adj R-Sq	0.3265			

***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

TABLE 7 FAMA-FRENCH THREE-FACTORS REGRESSIONS WITH CG SORTED PORTFOLIOS ON
ANNUAL-REPORTS BASIS

Panel A: better CG portfolio on annual-reports basis			
	Intercept	Rm-Rf	SMB	HML
Coefficient	-0.02218	0.00968**	0.01106*	0.001
t-stat	-1.29	2.46	1.92	0.15
Pr>|t|	0.2106	0.0233	0.0692	0.8832
R-Square	0.4557			
Adj R-Sq	0.3740			
Panel B: worse CG portfolio on annual-reports basis			
	Intercept	Rm-Rf	SMB	HML
Coefficient	0.00436	0.01252***	0.00197**	0.00219*
t-stat	1.56	19.52	2.10	2.02
Pr>|t|	0.1343	<.0001	0.0486	0.0570
R-Square	0.9723			
Adj R-Sq	0.9681			

***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.3 Empirical Analysis with Asian Pacific Firms: the Test of Market Anomalies

In the same way, we sort all stocks into the quintiles by firm size, BM ratio, or CLSA's CG Rankings to discuss whether there exists market anomalies or Corporate Governance effect in Asian Pacific samples. In Table 8, the evidence examines firm size effect. The first one is the smallest firm size portfolio, and its average return is 2.03 percent. The fifth portfolio is the largest firm size one and the average return is 65 bps. The difference of the average return is 138 bps, and it is statistically prominent by ANOVA test, revealing that there exists firm size effect in this period. This study also examines BM effect in the same table. The first portfolio is defined as value portfolio, and its average return is 2.1 percent. The fifth one is defined as growth portfolio, and its average return is 0.74 percent. The return difference between value portfolio and growth portfolio is 133 bps. With ANOVA test, it is statistically significant and proves that there exists BM effect in the Asian Pacific samples in this period. Eventually, this research discusses whether Corporate Governance effect exists. The first portfolio contains the stocks with the lowest level of CG Rankings, and the average return is 2.1 percent. The fifth portfolio includes the stocks with the highest level of CG Rankings; its average return is 0.93 percent. It implies that there is negative premium when the level of CG Rankings is higher. The differential is significant at the 10 percent level by ANOVA test. The results do not conform to what we expect. These are the important points to further discuss in the next few sections.

TABLE 8   SUMMARY STATISTICS OF THE ASIAN PACIFIC SAMPLES

Panel A: Size Effect Test				
Small				Large
1	2	3	4	5
Average Return 0.020304	0.011976	0.015571	0.01574	0.006529
Average Size 146.147	392.233	834	1649.37	11178.24
Pr > F		**0.0135****		

Panel B: Book-to-Market Effect Test				
High BM				Low BM
1	2	3	4	5
Average Return 0.02072	0.021955	0.010174	0.01097	0.007354
Average BM 0.5742	1.1273	1.6456	2.6473	6.9031
Pr > F		**0.0008****		

Panel C: CLSA 's CG Rankings Test				
Low				High
1	2	3	4	5
Average Return 0.020806	0.015279	0.015175	0.012064	0.009331
Average CG Rankings 36.27	47.77	55.27	62.82	73.56
Pr > F		**0.0913***		

Note:

1. Numbers of firms in each portfolio is equal.

2. In panel A, Portfolio 1 is the portfolio with the smallest firm size and Portfolio 5 is the portfolio with the largest firm size.

3. In panel B, Portfolio 1 contains the stocks with the highest book-to-market ratio, which is also defined as value portfolio, and Portfolio 5 is the portfolio defined as growth portfolio with the lowest book-to-market ratio.

4. In panel C, Portfolio 1 is the lowest level of CG Rankings, and Portfolio 5 is the highest level of CG Rankings, which is issued by CLSA in 2001.

5. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.4 Empirical Analysis with the Asian Pacific Firms: Corporate Governance Effect

With Corporate Governance (CG) rankings, which are issued by CLSA in 2001, this research discusses if CG[7] relates to investment performance in emerging markets in the Asian Pacific countries. Subsequently, LLSV (1998) (11) find legal rules covering protection of corporate shareholders and creditors. The results show that common-law countries generally have stronger legal protection of investors than civil-law ones. So, the evidence adds legal rules effect in Asian samples. Also, the evidence observes the sub-categories of CG Rankings and tries to find out what categories might affect investment returns.

4.4.1 Corporate Governance Effect

In above section, the results find there exists firm size effect and BM effect in Pacific Asian samples as well as Corporate Governance negatively related to investment returns. In the same way, we individually sort the stocks into trisections by BM and firm size to control market anomalies and then subdivide the trisections into two CLSA's CG Rankings portfolios to analyze Corporate Governance effect in Asian samples.

Table 9 examines CG Index related to the investment return in BM sorted portfolios. The results reveal that the average return of the better CG portfolio is lower than that of the worse one. However, it is not statistically significant by paired T-test. Worthy speaking, the systematic risk of better CG portfolio is much higher than that of worse CG one. The study utilizes Treynor's Index, which measures the performance each systematic risk. The performance of portfolio A is 0.018 and lower than that of portfolio B, which is 0.019 in value stocks. With Sharpe's Index, which measures the total risk premium per unit, the performance of portfolio A is 0.266 and higher than that of portfolio B, which is 0.261. It implies that there might be higher non-systematic risk in great Corporate Governance stocks. The performance

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[7] CG includes information disclosure, financial transparency, ownership structure, and so forth.

of worse Corporate Governance stocks is higher than that of better ones in remainder two portfolios. Although there is statistically significant to beat the market in first portfolio, but it couldn't explain Corporate Governance effect here. This evidence shows that Corporate Governance dose not raise investment performance, but causes inverse effects.

Table 10 shows the association between Corporate Governance and investment performance in firm size sorted portfolios in the Asian Pacific samples. The results are similar to that in BM sorted portfolios. The average return of better CG stocks is lower than that of worse CG stocks; however, the difference is not prominent. Investors also obtain the greater performance with the worse stocks. In conclusions, it proves again that there dose not exist positive Corporate Governance effect in the Asian Pacific samples.

TABLE 9   CG EFFECT WITH CONTROLLED BM PORTFOLIOS OF THE ASIAN PACIFIC SAMPLES

	High BM		Low BM
	1	2	3
Penal A: Average Return			
A	0.018503	0.011884	0.008239
B	0.026549	0.013964	0.009965
A-B	-0.00805	-0.00208	-0.00173
Pr > |t|	(0.3621)	(0.7082)	(0.7148)
Penal B: Beta of each BM portfolio			
A	0.68947	0.715387	0.756176
B	0.857587	0.621407	0.595003
Penal C: Sharpe Index			
A	0.265556	0.160722	0.098972
B	0.26075	0.179392	0.150296
Penal D: Treynor's Index			
A	0.017937	0.010744	0.006487
B	0.018905	0.012709	0.010499
Penal E: Jensen's Alpha			
A	0.010272	0.003576	-0.00049
	(0.051748)*	(0.471785)	(0.917823)
B	0.015705	0.005548	0.002766
	(0.099364)*	(0.385997)	(0.576919)

Note:

1. We sort all stocks into three portfolios by book-to-market ratio first, and Portfolio 1 is the portfolio with the highest BM ratio. Subsequently, each BM-sorted portfolio is subdivided into sub-portfolios by CG ranking which is issued by CLSA in 2001. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise as B sub-portfolio.

2. Numbers of firms in each portfolio is around 37.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

TABLE 10 CG EFFECT WITH CONTROLLED FIRM SIZE PORTFOLIOS OF THE ASIAN
PACIFIC SAMPLES

	Small		Large
	1	2	3
Penal A: Average Return			
A	0.012945	0.01413	0.00717
B	0.022741	0.018442	0.012501
A-B	-0.0098	-0.00431	-0.00533
Pr > |t|	(0.2603)	(0.3879)	(0.2822)
Penal B: Beta of each size portfolio			
A	0.542665	0.648565	0.843674
B	0.610878	0.717339	0.97239
Penal C: Sharpe Index			
A	0.181521	0.213804	0.084971
B	0.230254	0.248185	0.157094
Penal D: Treynor's Index			
A	0.012194	0.014119	0.005596
B	0.018495	0.017064	0.009944
Penal E: Jensen's Alpha			
A	0.004809	0.006296	-0.00135
	(0.332784)	(0.151227)	(0.775625)
B	0.013089	0.009931	0.003243
	(0.218775)	(0.093252)*	(0.421813)

Note:

1. We sort all stocks into three portfolios by firm size first, and Portfolio 1 is the portfolio with the smallest firm size. Subsequently, each firm size-sorted portfolio is subdivided into sub-portfolios by CG ranking which is issued by CLSA in 2001. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise as B sub-portfolio.

2. Numbers of firms in each portfolio is 41.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.4.2 Corporate Governance Effect: In Different Legal Rules

Broadly, there are two categories of legal rules, which are civil law (CD) and common law (CM). LLSV (1998) (11) reveal that compared with civil law, the common law countries generally have the stronger legal protection of investors. According to the research, this paper here sorts the samples of the remaining nine Asian countries[8] into couple portfolios by legal rules, and tries to analyze CG effect in each legal system.

Table 11 points out that it is no matter in civil law or common law that the average return of better CG stocks is still lower than that of worse CG ones, although it is non-prominent. It also shows the systematic risk of sub-portfolio A is higher than that of sub-portfolio B, and the performance of sub-portfolio B is also better by Sharpe's Index and Treynor's Index. Moreover, legal rules are not the reasons for the unexpected relation between Corporate Governance and investment performance in Asian samples. Eventually, Jensen's alpha is non-prominent, meaning that the performance of sub-portfolios could not beat the market.

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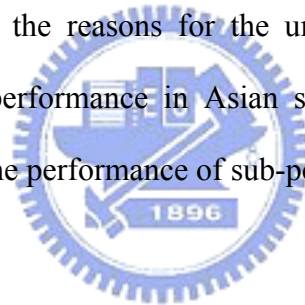
[8] We exclude Chinese samples, because China is communistic society.

TABLE 11 CG INDEX IN DIFFERENT LEGAL RULES OF THE ASIAN PACIFIC SAMPLES

	CM	CD
Penal A: Average Return		
A	0.010898	0.01287
B	0.015344	0.022758
A-B	-0.00445	-0.00989
Pr > |t|	(0.3319)	(0.381)
Penal B: Beta		
A	0.653932	1.029379
B	0.555634	0.908635
Penal C: Sharpe Index		
A	0.164667	0.117595
B	0.206776	0.234142
Penal D: Treynor's Index		
A	0.010714	0.00857
B	0.014754	0.01827
Penal E: Jensen's Alpha		
A	0.0032	0.00213
	(0.411601)	(0.821323)
B	0.007175	0.013056
	(0.255501)	(0.196567)

Note:

1. We divide all Asian Pacific stocks into two categories of legal rules first, and the category 1 is civil law (CD) and the other is common law (CM). Subsequently, each category is subdivided into sub-portfolios by CG ranking which is issued by CLSA in 2001. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise as B sub-portfolio.

2. Numbers of firms in each CD portfolio is around 47; Numbers of firms in each CM portfolio is around 79.

3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.4.3 Corporate Governance Effect: In Every Country

This research also analyzes whether the Corporate Governance is relative to investment performance in every country. We exclude the countries, in which the numbers of the samples are too few to analyze, and the remaining six emerging markets consist of Malaysia, Hong Kong, Singapore, India, Taiwan, and South Korea. We sort the stocks into couple portfolios by CG Index, and discuss whether Corporate Governance influences investment performance. LLSV (1998) set the scores with investors protection of legal power, which includes one share-one vote, proxy by mail allowed, preemptive right to new issues, oppressed minority, and so on. The results show common law countries usually have the strongest legal protection for investors, and civil law countries are the weakest. Therefore, the study would analyze CG effect in different legal law countries. In this thesis, there are common law countries, including Malaysia, Hong Kong, Singapore, and India; civil law countries consist of Taiwan and South Korea. The results would mention them respectively as follows.

Table 12 shows that CG is positively relative to investment performance in Malaysian and Hong Kong samples among common law countries. However, it is insignificant by paired T-test. On the other hand, systematic risk of worse CG stocks is higher than that of better CG ones; the performance of sub-portfolio A is also better than that of sub-portfolio B by Sharpe's Index and Treynor's Index. In common law system, there are the remaining two countries: Singapore and India. The average return of better CG stocks is lower than that of worse CG ones and the difference is statistically significant at the 10 percent level. The result in Indian samples is the same, but it is non-prominent. Even considering of risk factors, the performance of sub-portfolio B is still higher than that of sub-portfolio A; the result is unchanged.

Table 12 also reveals the results of civil law countries: Taiwan and South Korea. CG induces negative effect on investment return in Taiwanese samples; there is positive influence

in South Korea. However, the results are not prominent. Subsequently, the evidence utilizes Sharpe's Index and Treynor's Index to measure the performance of each portfolio. The performance of better CG stocks is lower in Taiwan; on the contrary, that is higher than the performance of worse CG stocks in South Korea. The value of Jenson's alpha is –0.0062 in Taiwanese better-CG portfolio, which implies it could not beat the market. It is 0.0027 in Taiwanese worse-CG portfolio. But the results are both non-prominent. Sub-portfolio A could beat the market in South Korean samples. The value of Jenson's alpha is 0.0237 and statistically significant.

To summarize, there are not identical results in common law countries and civil law countries. In common law countries, CG induces positive influence to the performance in Malaysian and Hong Kong stocks. However, the performance of better CG stocks is not as great as that of worse ones in Singapore and India. There are also inconsistent results in civil law countries. As the results, the results infer that the differential from laws pertaining to investor protection is not one of the reasons for CG effect on the performance.

	CM	CM	CM	CM	CD	CD
	TABLE 12 CG INDEX IN EACH ASIAN PACIFIC COUNTRY					
Average Return	MY	HK	SP	IN	TW	KO
A	0.015378	0.00769	0.002526	0.016702	0.005667	0.035018
B	0.008338	0.003634	0.011116	0.022123	0.014053	0.031469
A-B	0.007039	0.004056	-0.00859	-0.00542	-0.00839	0.00355
Pr > ltl	(0.1875)	(0.5342)	(0.0583)	-0.4386	(0.3395)	(0.7661)
Jensen's Alpha						
A	0.010459	0.000432	-0.00527	0.008234	-0.00622	0.023708
	(0.114261)	(0.93434)	(0.480948)	-0.41034	(0.69123)	(0.0279)**
B	0.002134	-0.0053	0.003284	0.012096	0.00265	0.017334
	(0.807901)	(0.472558)	(0.664121)	-0.354655	(0.827994)	(0.241702)
Sharpe Ratio						
A	0.292556	0.106337	0.012379	0.18365	0.031474	0.325404
B	0.103719	0.025866	0.137956	0.197124	0.112939	0.217712
Treynor Index						
A	0.029688	0.007531	0.00096	0.015512	0.002701	0.024
B	0.010256	0.001874	0.010734	0.017196	0.008831	0.016551
beta						
A	0.335415	0.786324	0.844027	0.452042	1.1948	1.392488
B	0.442401	1.033744	0.718888	0.452916	1.053087	1.447372
Standard deviation of risk						
A	0.007672	0.00798	0.009348	0.012848	0.017806	0.013943
B	0.010135	0.009326	0.009206	0.014641	0.014839	0.016644

Note:
1. We classify each Asian Pacific stock to civil law (CD) or common law (CM) according to legal rules first. Subsequently, each stock is subdivided into sub-portfolio by CG Rankings, which is issued by CLSA in 2001. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise
2. as B sub-portfolio.
3. ***, ** and * indicate that the test statistics are significant at the 1%, 5% and 10% levels, respectively.

4.4.4 Corporate Governance Effect: In Sub-categories

The CLSA's CG scores are based on how we rate a company on 57 issues under seven main aspects of Corporate Governance. The research examines the differential effects from every sub-category in firm size and BM sorted portfolios, and shows that there are negative influences on investment performance in three aspects, including independence, accountability, and responsibility. They could not increase investors' capital gain. On the other hand, although the average return of better fairness stocks is not as great as that of worse ones, we utilize Sharpe's Index and Treynor's Index and find that fairness would induce positive effect on investment performance. In the summary, Fairness might be the main factor, which induces positive effect on the performance. Independence, accountability, and responsibility would not only introduce positive influence, but negative effect on the performance.

5. **CONCLUSIONS**

Corporate Governance system protects outside shareholders from supervisors who might steal public resource to pursue their private benefit. Generally speaking, good corporate governance increases firm value. This paper investigates this issue by using the empirical research of American and Asian Pacific samples and tries to solve this inquiry.

The empirical results reveal that T&D Rankings, which were issued by S&P's in 2002, provided a useful benchmark for equity investment in the U.S. By F-F three-factor model, a strategy that buys firm shares with higher deciles of T&D Rankings on composite basis and sells those with lower deciles of T&D Rankings would gain abnormal return of 3% per month. The Asian Pacific empirical results show that CG Rankings issued by CLSA for emerging markets in 2001 do not significantly raise investment performance. According to LLSV (1998), which reveals that legal laws covering protection of corporate shareholders and creditors. Countries whose legal rules are originated in the common-law tradition in particular, tend to protect investors relatively more than those countries whose laws are originated in the civil-law. In addition, this study tries to sort the stocks into portfolios by legal laws in Asian samples. However, there are not positive CG effects on investment performance in both common-law and civil-law sorted portfolios. The study also examines the legal-law sorted portfolios in nine Asian countries, and the results are inconsistent. For that reason, legal origin might not be the factor to influence the relation between CG and the performance. Eventually, the study discusses the individual effect from seven sub-categories and discovers that fairness could induce positive effect on the performance. Unfortunately, there are three sub-categories, including independence, accountability, as well as responsibility, which could influence positive effect, but even negative influence on the performance.

We do not give full support that the statement that Corporate Governance could induce positive effect on investment performance in this thesis because there are still some inconsistent results. There are inconsistent results in Asian emerging markets and developed market. The level of T&D Rankings on composite basis, which was issued by S&P's, is positively relative to investment performance. However, the Asian empirical results do not support this statement. Some possible reasons for these different results are as follows. Firstly, Corporate Governance Indexes are lagged-information. CG effect has already been reflected on stock price. Thus, the investors could not earn the premium by Corporate Governance indices. Secondly, CG system is still on the developing stage in Asian emerging markets and the investors would not realize the concept of Corporate Governance system completely. Thirdly, the Asian samples have been chosen. There are almost large companies in Asian samples. This might induce our empirical results insignificantly. The other potential problem is that these indexes might omit important variables in their corporate governance measurement, particularly in emerging markets. It might be the reason of incorrect response of CG effect on the performance in Asian empirical results. The investors gradually pay attention to CG system in recent years. There is still large space to improve it in whether system items or executer. In addition, there might be other unobserved firm characters to affect investment performance in the thesis. This would be the interesting discussion to be further analyzed down the line.

CG Index in Each Sub-category with Controlled BM

Discipline			
A	0.0172	0.0081	0.0084
B	0.0251	0.0175	0.0096
A-B	-0.0079	-0.0095	-0.0012
Pr > |t|	0.3018	0.0324	0.7815
Jensen's Alpha			
A	0.0089	0.0002	0.0001
	0.1916	0.9628	0.9815
B	0.0150	0.0087	0.0018
	0.0507	0.1393	0.7026
Sharpe Index			
A	0.0684	0.0596	0.0632
B	0.0843	0.0700	0.0589
Treynor Index			
A	0.0164	0.0072	0.0071
B	0.0193	0.0154	0.0091
beta			
A	0.6084	0.6047	0.6100
B	0.8528	0.7287	0.7232
Standard deviation of risk			
A	0.0069	0.0064	0.0080
B	0.0072	0.0062	0.0064
Transparency			
A	0.0234	0.0080	0.0110
B	0.0216	0.0163	0.0073
A-B	0.0018	-0.0082	0.0037
Pr > |t|	0.8320	0.1940	0.5636
Jensen's Alpha			
A	0.0149	-0.0009	0.0032
	0.0204	0.8805	0.5199
B	0.0107	0.0083	-0.0008
	0.2267	0.1521	0.8895
Sharpe Index			
A	0.3193	0.0894	0.1562
B	0.2125	0.2307	0.0871
Treynor Index			
A	0.0224	0.0061	0.0106
B	0.0151	0.0162	0.0061
Beta			
A	0.7401	0.8313	0.7393
B	0.8129	0.5573	0.6191
Standard deviation of risk			
A	0.0058	0.0073	0.0064
B	0.0092	0.0063	0.0084

CG Index in Each Sub-category with Controlled Size

Discipline			
A	0.0147	0.0150	0.0050
B	0.0232	0.0177	0.0146
A-B	-0.0085	-0.0027	-0.0096
Pr > |t|	0.2397	0.7124	0.0409
Jensen's Alpha			
A	0.0060	0.0077	-0.0042
	0.3375	0.0989	0.4024
B	0.0141	0.0086	0.0061
	0.1687	0.2020	0.0797
Sharpe Index			
A	0.1860	0.2425	0.0471
B	0.2489	0.2150	0.2099
Treynor Index			
A	0.0129	0.0165	0.0031
B	0.0202	0.0150	0.0132
Beta			
A	0.5524	0.5364	0.8936
B	0.6190	0.8445	0.9224
Standard deviation of risk			
A	0.0068	0.0056	0.0072
B	0.0094	0.0068	0.0046
Transparency			
A	0.0153	0.0184	0.0085
B	0.0205	0.0140	0.0108
A-B	-0.0052	0.0044	-0.0023
Pr > |t|	0.5806	0.4959	0.5658
Jensen's Alpha			
A	0.0071	0.0109	-0.0003
	0.2243	0.0493	0.9454
B	0.0109	0.0052	0.0019
	0.3052	0.3542	0.6511
Sharpe Index			
A	0.2100	0.2827	0.1040
B	0.2061	0.1786	0.1372
Treynor Index			
A	0.0147	0.0198	0.0067
B	0.0166	0.0121	0.0088
beta			
A	0.6176	0.6405	0.9225
B	0.5339	0.7275	0.8973
Standard deviation of risk			
A	0.0067	0.0056	0.0053
B	0.0101	0.0066	0.0058

[Appendix 1] CG Index in Each Sub-category (cont'd)

CG Index in Each Sub-category with Controlled BM				CG Index in Each Sub-category with Controlled Size			
Independence				**Independence**			
A	0.0178	0.0125	0.0058	A	0.0127	0.0127	0.0077
B	0.0270	0.0134	0.0127	B	0.0230	0.0214	0.0118
A-B	-0.0092	-0.0010	-0.0069	A-B	-0.0104	-0.0087	-0.0041
Pr > |t|	0.2930	0.8850	0.3465	Pr > |t|	0.2297	0.1941	0.5397
Jensen's Alpha				Jensen's Alpha			
A	0.0089	0.0036	-0.0029	A	0.0043	0.0046	-0.0013
	(0.1165)	(0.5733)	(0.5908)		(0.4256)	(0.3255)	(0.8308)
B	0.0169	0.0057	0.0054	B	0.0136	0.0131	0.0031
	(0.0757)*	(0.3168)	(0.3616)		(0.1939)	(0.0568)*	(0.4306)
Sharpe Index				Sharpe Index			
A	0.2305	0.1503	0.0612	A	0.1690	0.1802	0.0848
B	0.2814	0.1912	0.1879	B	0.2390	0.2865	0.1570
Treynor Index				Treynor Index			
A	0.0155	0.0104	0.0041	A	0.0115	0.0120	0.0058
B	0.0210	0.0134	0.0139	B	0.0193	0.0207	0.0100
beta				beta			
A	0.8166	0.7456	0.7762	A	0.5796	0.7028	0.8390
B	0.7328	0.5824	0.5686	B	0.5740	0.6549	0.9738
Standard deviation of risk				Standard deviation of risk			
A	0.0060	0.0071	0.0085	A	0.0067	0.0058	0.0071
B	0.0088	0.0064	0.0068	B	0.0092	0.0071	0.0055
Accountability				**Accountability**			
A	0.0201	0.0126	0.0088	A	0.0160	0.0170	0.0086
B	0.0248	0.0134	0.0093	B	0.0211	0.0155	0.0107
A-B	-0.0047	-0.0008	-0.0006	A-B	-0.0051	0.0014	-0.0020
Pr > |t|	0.5643	0.8994	0.9367	Pr > |t|	0.5994	0.7973	0.7139
Jensen's Alpha				Jensen's Alpha			
A	0.0097	0.0035	-0.0007	A	0.0067	0.0079	-0.0009
	(0.0937)*	(0.4645)	(0.9056)		(0.2947)	(0.1020)	(0.8339)
B	0.0161	0.0060	0.0026	B	0.0128	0.0083	0.0023
	(0.0778)*	(0.3777)	(0.5453)		(0.2572)	(0.1340)	(0.6288)
Sharpe Index				Sharpe Index			
A	0.2263	0.1584	0.0931	A	0.1920	0.2220	0.0971
B	0.2911	0.1865	0.1540	B	0.2256	0.2433	0.1413
Treynor Index				Treynor Index			
A	0.0147	0.0103	0.0063	A	0.0132	0.0144	0.0062
B	0.0229	0.0143	0.0107	B	0.0207	0.0175	0.0093
Beta				Beta			
A	0.9114	0.7080	0.8500	A	0.6215	0.7651	0.9973
B	0.6430	0.6135	0.5337	B	0.4992	0.5924	0.8448
Standard deviation of risk				Standard deviation of risk			
A	0.0071	0.0065	0.0093	A	0.0075	0.0061	0.0065
B	0.0079	0.0070	0.0062	B	0.0099	0.0063	0.0054

[Appendix 1] CG Index in Each Sub-category (cont'd)

CG Index in Each Sub-category with Controlled BM				CG Index in Each Sub-category with Controlled Size			
Resposibility				**Resposibility**			
A	0.0150	0.0105	0.0078	A	0.0142	0.0130	0.0073
B	0.0293	0.0145	0.0101	B	0.0221	0.0190	0.0113
A-B	-0.0142	-0.0040	-0.0023	A-B	-0.0079	-0.0060	-0.0040
Pr > ltl	0.1419	0.5117	0.6744	Pr > ltl	0.3815	0.2799	0.4921
Jensen's Alpha				Jensen's Alpha			
A	0.0072	0.0030	-0.0010	A	0.0064	0.0054	-0.0014
	(0.1875)	(0.4867)	(0.8133)		(0.2113)	(0.2192)	(0.7561)
B	0.0182	0.0056	0.0028	B	0.0118	0.0104	0.0023
	(0.0546)*	(0.3921)	(0.6250)		(0.2718)	(0.0829)*	(0.6142)
Sharpe Index				Sharpe Index			
A	0.2186	0.1584	0.0934	A	0.2100	0.1997	0.0853
B	0.2857	0.1769	0.1444	B	0.2129	0.2528	0.1416
Treynor Index				Treynor Index			
A	0.0152	0.0105	0.0060	A	0.0144	0.0133	0.0056
B	0.0205	0.0124	0.0104	B	0.0167	0.0174	0.0092
beta				Beta			
A	0.6361	0.6626	0.8470	A	0.5160	0.7212	0.9715
B	0.8969	0.6721	0.5437	B	0.6472	0.6515	0.8714
Standard deviation of risk				Standard deviation of risk			
A	0.0060	0.0056	0.0073	A	0.0062	0.0060	0.0067
B	0.0085	0.0070	0.0071	B	0.0100	0.0062	0.0056
Fairness				**Fairness**			
A	0.0233	0.0154	0.0138	A	0.0180	0.0152	0.0076
B	0.0219	0.0110	0.0073	B	0.0177	0.0174	0.0119
A-B	0.0014	0.0044	0.0065	A-B	0.0003	-0.0022	-0.0043
Pr > ltl	0.8473	0.5188	0.3871	Pr > ltl	0.9610	0.7812	0.3030
Jensen's Alpha				Jensen's Alpha			
A	0.0155	0.0074	0.0028	A	0.0096	0.0082	-0.0009
	(0.0144)**	(0.1647)	(0.6222)		(0.1358)	(0.0969)*	(0.8269)
B	0.0110	0.0024	-0.0006	B	0.0084	0.0081	0.0027
	(0.1585)	(0.7104)	(0.8779)		(0.3325)	(0.2244)	(0.5215)
Sharpe Index				Sharpe Index			
A	0.3430	0.2213	0.1442	A	0.2402	0.2526	0.0940
B	0.2228	0.1328	0.0978	B	0.1955	0.2071	0.1486
Treynor Index				Treynor Index			
A	0.0246	0.0151	0.0100	A	0.0170	0.0177	0.0061
B	0.0152	0.0094	0.0063	B	0.0148	0.0143	0.0095
beta				beta			
A	0.6376	0.6163	0.6847	A	0.5195	0.5552	0.9114
B	0.8829	0.7081	0.6737	B	0.6194	0.8108	0.9049
Standard deviation of risk				Standard deviation of risk			
A	0.0059	0.0067	0.0081	A	0.0080	0.0056	0.0056
B	0.0077	0.0072	0.0065	B	0.0081	0.0071	0.0057

CG Index in Each Sub-category with Controlled BM			CG Index in Each Sub-category with Controlled Size		
Social Awareness			**Social Awareness**		
A	0.0229	0.0107	0.0096	A	0.0184	0.0171	0.0092
B	0.0221	0.0159	0.0084	B	0.0172	0.0152	0.0104
A-B	0.0009	-0.0052	0.0013	A-B	0.0012	0.0018	-0.0011
Pr > |t|	0.9335	0.4451	0.8589	Pr > |t|	0.8875	0.7709	0.8310
Jensen's Alpha			**Jensen's Alpha**		
A	0.0116	0.0018	0.0011	A	0.0085	0.0081	0.0001
	(0.1478)	(0.7531)	(0.8567)		(0.3202)	(0.1460)	(0.9793)
B	0.0145	0.0082	0.0011	B	0.0095	0.0081	0.0016
	(0.0626)*	(0.1987)	(0.8069)		(0.2162)	(0.1167)	(0.7125)
Sharpe Index			**Sharpe Index**		
A	0.2249	0.1286	0.1160	A	0.0856	0.0699	0.0689
B	0.3058	0.2250	0.1227	B	0.0673	0.0552	0.0653
Treynor Index			**Treynor Index**		
A	0.0153	0.0087	0.0081	A	0.0142	0.0148	0.0071
B	0.0244	0.0165	0.0084	B	0.0182	0.0173	0.0086
beta			**Beta**		
A	0.8593	0.7327	0.6294	A	0.5863	0.6965	0.9237
B	0.6780	0.5840	0.7407	B	0.5645	0.6648	0.8951
Standard deviation of risk			**Standard deviation of risk**		
A	0.0077	0.0067	0.0084	A	0.0088	0.0062	0.0066
B	0.0072	0.0067	0.0063	B	0.0076	0.0057	0.0049

Note:

1. We sort all stocks into three portfolios by book-to-market ratio first, and Portfolio 1 is the portfolio with the highest BM ratio. Subsequently, each BM-sorted portfolio is investigated according to seven main aspects of governance, which is issued by CLSA in 2001, and then subdivided into two sub-portfolios. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise as B sub-portfolio.

2. We sort all stocks into three portfolios by firm size first, and Portfolio 1 is the portfolio with the highest firm size. Subsequently, each firm size-sorted portfolio is investigated according to seven main aspects of governance, which is issued by CLSA in 2001, and then subdivided into two sub-portfolios. We classify them as A sub-portfolio when the score of CG Rankings is higher, and otherwise as B sub-portfolio.

[APPENDIX 2] F-F THREE FACTOR MODEL FOR THE DIFFERENCE OF RETURNS

	Intercept	Rm-Rf	SMB	HML
Coefficient	0.03095	-0.00445	-0.01214	0.0052
t-stat	1.31	-0.82	-1.53	0.57
Pr>|t|	0.2057	0.4224	0.1422	0.5779
R-Square	0.1344			
Adj R-Sq	0.0046			

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