

Factors Impacting the Issue Price of Private Equity Placement by Financial Institution --- the Perspective of Investor Identity and Governance Mechanism

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Abstract

This study aims to investigate factors impacting private placement selling price. Using OLS and Tobit regression model, from investor identity, corporate governance, operating performance, market structure and information asymmetry five dimension to explore. In addition, we also take the macro-economic variables into consideration and do a robust test.

Findings of this study are:

- 1. Financial institution with foreign ownership, better corporate governance, better operating performance and greater market power lead the private placement selling at a premium.*
- 2. Smaller information asymmetry reduce the discount level of selling private placement.*
- 3. Macro-economic environment is positive, private placements are more likely to sell at a premium.*

Keyword: Private Placement Investor Identity Corporate Governance Operating Performance
Market Structure Information Asymmetry

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I. Introduction

1. Research Motivation

Taiwan government approved private placement system in 2002. Since this change the private placement market has boomed. Private placements involve raising funds from some specific person, and thus omit to the procedures related to public offerings. Furthermore, the securities offered do not have to be registered with the competent authority until it has raised the required funds. Therefore private placements are regarded as the best way to raise funds, particularly for companies in financial difficulty. Moreover, the selected private investors are generally with some specific expertise, allowing the company to benefit through their contributing to its constitution or through strategic alliances to introduce new technologies, expand market share and so on. According to data released by the Securities and Future Bureau of Financial Supervisory Commission demonstrated that funding from private placements totaled 1,122.23 billion NT dollars, accounting for 19.25% of total funds raised, including through public offerings and private placements in publicly held companies during 2008. Some 179 private placement events occurred in 2009, involving 1,598.53 billion NT dollars, and accounting for 24.89% of total funds raised, including public offerings and private placements in publicly held companies during 2009. In the nearest year to the present, namely 2010, 143 private placement events still occurred, involving 91.35 billion NT dollars, and accounting for 12.92% of total funds raised, including public offering and private placement in publicly held companies. The above figure reveals that private placements have become an important means of raising capital for publicly held companies.

Compared to public offerings, private placements involve a funding round of securities which are sold without an initial public offering, usually to a small number of selected private investors. Private placements do not require the services of attorneys, CPAs, or underwriters, and do not need to be filed with the authority before funding as is the case for public offerings. Therefore, private placements are the most convenient method of raising capital for companies in urgent need, since the procedures involved are relatively simple. Recently, numerous listed companies have used private placements to recruit strategic alliance partners to improve their corporate governance or enhance their operating performance. Notably, a three-year lockout period is mandated to prevent companies selling off their shares and to stabilize the alliance relationship. Compared to public offerings, the number of investors in private placements is relatively small and such private placements lack investment prospectuses, potentially resulting in a lack of information transparency, which favors specific individuals at the expense of other shareholders. Private placements thus suffer some significant weaknesses.

Owing to recent cases involving highly profitable companies that have used private placement to raise capital, with offer prices deviating significantly from the market price or

net worth, and with specific investors being inside the company or related parties, negatively impacting shareholder equity, the authorities have revised and released the “Precaution to public companies in relation to private placement securities” and the “Guidelines to issuers for the offering and issuing of securities”, Articles 8 and 70 of these guidelines clearly define the offering price, principles or strategic investors of the private placement. Regarding the widespread use of private placement, the competent authorities need to sustain clear and sound regulations to retain goodwill regarding the opening of the system of private placement.

Based on previous summaries of the global literature, this study found that the focus of relevant research is concentrated on three parts: the first is investigating which factors drive companies to use private placements as a means of raising capital, the second is studying the market response following the private placement event, and the third is examining which factors influence whether the private placement is sold at a discount or premium. Literature¹ dealing with private placement in Taiwan is still lacking, a phenomenon that may result from this policy regarding raising capital having been accepted since 2002. However, the private placement system has now existed for a decade in Taiwan, and this study intends to present an overview of the private placement system. Companies raising capital through private placements have presented offer prices far removed from the market price or net worth of the company itself, and some designate individuals within the company or related parties to price the securities relatively low. This investigation thus focuses on how investor identity influences whether a private placement sells at a discount or premium. Hopefully this study can contribute to complete information regarding the factors impacting whether a private placement sells at a discount or premium.

Regarding the domestic literature on private placement, this study found that most of the samples² used comprised listed companies, and since the characters and regulations of the financial industry differ from other industries, researchers frequently delete the samples of the financial industry. However, this study deliberately focuses on the financial industry. The financial industry includes banks, securities, insurance and financial holding companies whose sources of earnings and business models differ from other industries, making it essential to separate the financial industry from other industries to conduct a detailed review. Compared to studies discussing private placements involving listed companies (Xuhui Yun (2006), Chen Jun He *et al.* (2009)), besides the general factors they mentioned, this study also considers foreign investors, including foreign investor ownership and market structure measured by the hofinda index. Furthermore, compared to the studies discussing the use of private placements

¹The main domestic literatures of private placement generally discussing the private issue concerning listed and OTC firms, like Lvji Rong (2005), and Shu-Ling Lin and Zhuang Xiaojun which examine the impact to shareholders' wealth of private placement announcement and Chen Jun He (2009) investigates the association between insider participation and private placement sell at a discount or premium.

² The domestic literatures concerning to private placement mainly focus on the listed and OTC firms, like Xuhui Yun (2006), Lin Yushan (2008), Zhang Wan Yu et al (2010)

by general listed companies (Chen Jin Twin 2010), this study added specific financial industry variables like capital adequacy ratio, cost revenue ratio and the founding years of the financial industry, trying to provide a comprehensive and overall review of the factors influences on whether a private placement is sold at a discount or premium to provide extra information to those interested in this topic.

2. Research purposes

Private placements mean issuing large numbers of shares to a relatively small number of investors, where the investors and the issuing company are frequently somehow related, or may establish a new relationship via the private placement, and where the relationship between investors and issuers can incorporate various elements, such as the strategic investors maintaining cooperation relationships, or employment relationships such as managers, or the shareholders with significant influence on the company. The investors invariably have different identities, and this study examines how these different identities influence whether the private placement sells at a discount or premium.

Owing to the significant difference in regulatory and operating models between the financial industry and other industries, previous studies on private placements always consciously excluded the financial industry. When investors have a special identity, such as a parent financial holding company and its subsidiary, they can use private placements to rapidly and efficiently transfer funds between companies. Moreover, private placements are often used in the financial service industry to increase the ratio of capital adequacy differing from its purpose in other industries. Consequently, this study focuses particularly on the samples of financial industries, with the aim of investigating the factors that influence whether private placements are sold at a discount or premium, and uses the OLS and Tobit models to examine the following questions:

- 1) Whether the factor denoted as the capital adequacy ratio for the financial industry significantly influences whether private placements are sold at a discount or premium.
- 2) Financial companies have recently introduced strategic investors, including foreign investors, and this study thus examines how foreign investors influence whether private placements sell at a discount or premium. This study also investigates private placements involving insiders, and outsiders obtaining directorships via private placements, to understand how these factors influence whether private placements sell at a discount or a premium.
- 3) Various studies have examined whether companies employ earnings management. For example, Chi Xiang Lin and Chen Tingxuan (2007) used the banking industry as an example to examine the relationship between earnings manipulation and social responsibility; therefore, this study is interested in whether earnings management is related to whether private placements sell at a discount or premium, and so included the variable of abnormal allowance for bad debt to examine whether the financial industry

engaged in earnings management before private placements, as well as its influence on whether private placements sell at a discount or premium.

This study comprises eight sections. The first section introduces the study motivation, purpose and contributions. Section 2 then introduces the private placement system and related characteristics in Taiwan. Subsequently, section 3 presents the related literature. The research design and hypothesis are then presented in section 4. Section 5 then depicts the data and descriptive statistics. Next, section 6 shows and interprets the empirical results. Section 7 then performs the sensitivity test. Finally, section 8 presents conclusions and limitations.

II. Literature Review

Based on the previous literature, this study identified three main areas of concern]: first, to investigate which factors drive companies to use private placements to raise capital: second, to study the response of the market following the event of private placement: and third, examining which factors influence whether private placements are sold at a discount or premium. This study discusses the literature dealing with each of these three parts OR areas of concern.

1. Factors impacting the choice of public offering or private placement

Sharpe and Woo (2002) used Austrian data to conduct an analysis, and found that the factors which influence the choice of a company to select an IPO or private placement include transaction cost, information asymmetry and corporate governance. Cronqvist and Nilsson (2004) used the nested Logit model to examine how companies select public offering or private placements, and obtained findings suggesting that privately held companies are prevented from using methods that dilute the share's right, and prefer private placements where significant differences exist between voting rights and cash flow rights. Wu (2004) observed three differences between public offerings and private placements. First, companies selecting private placements are characterized by high information asymmetry. Second, investors in private placements pay less attention to monitoring companies than those in public offerings. Finally, when managers are involved in private placements, the discount is larger than when they are not involved. Furthermore, a Taiwanese study by Su Yong Sheng *et al* (2006) observed that companies with higher debt ratio tend to raise capital through private placements.

2. Performance and market reaction

Besides investigating the factors impacting private placements or public offerings, this study investigated the effect of the announcement of private placements at the date, before and after the announcement date on company performance and market reaction. Wruck (1989)

presented the monitoring hypothesis, which noted that aggressive investors like to monitor companies to ensure that company resources are efficiently used to increase performance. In contrast to the negative CAR associated with the announcement of public offerings, the announcement of private placements results in 4.5% CAR. The certification hypothesis presented by Hertzel and Smith (1993) suggested that private placements signal that a company is undervalued, and thus some investors who possess information regarding the private placement will purchase lump-sum shares in response to the market appraisal. Therefore selling the private placement at a discount is related to the cost of information. Such price is used to compensate the buyer for creating such information and can guarantee corporate value]. Furthermore, positive CAR represents a good reaction to future firm value. Dann and Deangelo (1988) and Wruck (1989) support the entrenchment hypothesis, which stated that managers intending to avoid a take over will use a private placement to strengthen their operating rights, and thus that private placements do not favor non-aggressive investors. According to the commentary to the issuer and investor through newspapers and magazines, Barclay *et al.* (2007) classified private placements into three types]: Active placements, meaning the investors actively participate in the issuing company; managerial placements, meaning the investors are managers of the issuing company; and passive placements, meaning investors are unrelated to the company either currently or before the placements, and uses these three classifications to verify the monitoring and certification hypotheses]. The findings of Barclay *et al.* support the entrenchment hypothesis rather than monitoring and certification hypotheses.

The empirical findings of Kuo Su-Ling (2009) indicated that the CAR increases with the number of director seats associated with private placements, supporting the monitoring hypothesis; Hertzel *et al.* (2002) stated that announcement of a private placement initially positively affected the share price, but after the announcement date the effect was negative. Hertzel *et al.* thus concluded that investors were excessively optimistic concerning to the future of the company, Chou *et al.* (2009) also noted that companies only sustained a high Tobin's Q when their share price remained undervalued for a long period. The reason for this phenomena was the same as that proposed by Hertzel, namely that investors are excessively optimistic regarding firm growth rate. Marciukaytite *et al.* (2005) obtained same findings. Tan *et al.* (2002) used a Singaporean sample during 1987-1996 and still found that following the announcement of a private placement the market displayed a significant positive reaction, and the price of the private placement and CAR were positively related. However, Chen *et al.* used the example of Singapore during 1988-1993 and obtained opposite findings to Tan *et al.*, revealing that private placement not only resulted in negative CAR but also displayed phenomena of dispersed ownership. Chen *et al.* assumed that this difference can be attributed to the Singapore stock exchange limiting the scale of issuing companies. Krishnamurthy (2005) found that there share prices increased significantly before private placements, and CAR displayed significant and sustained negative growth following a private placement.

Wruck and Wu (2009) analyzed how the relationship between issuer and investor influences firm performance, and showed that if private placement caused the establishment of a new relationship, firm share price displays a positive effect on the announcement date. Furthermore, the empirical findings of Lin Yushan (2008) showed that firms engaging in private equity placements displayed significantly negative and sustained CAR over long periods.

3. Factors impacting the selling price of private equity placement

This section discussed the factors impacting whether private placements sell at a discount or premium, since there are numerous factors included. This study focuses on investigating how investor identity and corporate governance influences the selling price, so the relevant literature is mentioned later].

First this study introduces the investigation of Wruck and Wu(2007), which discussed the association between investors and firm operations, and divided investors into relationship investors and outsiders, as well as classifying relationship investors into managers, main operating partners (suppliers and customers) and institutional investors, to investigate the value of relationship investors in the US market via private placements. This study finds that the US market is characterized by issuers, but not investor companies, valuing relationship investment, and larger rewards and smaller discount levels existed in this market during the announcement period when the investors were managers or main operating partners. Wu (2009) analyzed the impact of relationship investors on corporate government and performance, and found that most investors in private placements had pre-existing relationships, but also established new relationships after the private placement, like obtaining director seats or becoming controlling shareholders, benefiting earnings and share price following the private placement, by improving management and corporate governance and generating new value for the company. Krishnamurthy (2005) classified investors as affiliated and unaffiliated. He thought that investors purchased the shares at a discount to reflect whether the share price will decrease in future, and that affiliated investors are more likely to avoid purchasing overvalued shares than are unaffiliated investors. Xuhui Yun (2006) found that controlling right significantly influenced whether a private placement was sold at a discount versus a premium. Insiders like to pay higher prices than outsiders to increase their control, and insider benefit influences selling price more than does outsider. If insiders have more ownership before private placements they are more likely to pay a higher price to purchase shares to solidify that ownership. Chen Jun He (2009) examined whether insiders participating in the private placement influence the discount level, and showed that insiders purchase shares at a relatively lower price motivated by self-benefit, resulting in a larger discount level in private equity placements, supporting the entrenchment hypothesis, but Meidan (2006) indicated that controlling the characteristics of private placement, investor type (Active or Passive) was unrelated to private placement price.

The entrenchment hypothesis presented by Jensen and Ruback (1983) indicated that when share rights are excessively concentrated in the hands of managers or controlling share holders, managers may abuse their privilege and undermine the interests of minority shareholders. Barclay *et al.* (2001) identified two methods of purchasing large numbers of shares. One method is to purchase from other shareholders, and the other is through a private placement. However, in block trades, an average 11% premium exists following the announcement date. However, a 19% discount exists in the case of private placements. This reflects that purchasers of block trades generally became top managers, and the premium reflects the benefits associated with future expectations. Investors in private placements are generally passive investors, and share prices begin to decline following such events. These phenomena indicate that the discounts offered for private placement compensate outsiders for helping the manager solidify their position, a hypothesis supported by the empirical results of Barclay *et al.* (2007). Which indicated that most participants in private placements are passive investors, and could help top managers strengthen their control rights or positions, and thus most private placements sell at a discount.

Besides investor identity and corporate governance impacting the issuing price of private placements, Hertzell and Smith (1993) indicated that discounts are offered in private placements to compensate for the cost that investors pay for information. Bajaj (2001) used the issuing amount to measure the scale of private equity placement, and noted the unit information costs paid by the purchaser, and thus the discount level, reduce with increasing issue scale. Chang (2010) used samples of listed companies that announced private equity placement financing during 2002-2007, and found that the discount was to compensate for the cost of collecting information for specific investors, and the higher the percentage of the issuing amount the more investors will pay for detail assessing firm value, and therefore the higher the discount level will be, indicating that information asymmetry is one of the factors impacting the issuing price. Furthermore, Chang Ru-Xin (2007) found that the higher the shareholding percentage, and the less the collateral percentage of directors, and the larger the number of independent director seats, the better the corporate governance of the company, and thus the lower the discount level. Performance and earnings management continue to play an important role in determining selling price in the case of private placements.

III Research Hypothesis and Research Design

1. Research Hypothesis

The Identity of the Investors

Since 2006, to improve the Taiwanese bank system and make Taiwan an Asia Pacific financial center, the Taiwanese government has welcomed foreign investors to assume control of

financial institutions, and because foreign banks generally have large scale and sound operating systems. Therefore, if participants in private placements have foreign investment, and particularly if foreign investors hold a large percentage, those private placements generally sell at a premium. As for why foreign investors are willing to pay a premium for private placements, besides thinking they have sound operating systems that can improve bank constitution, they are also unfamiliar with the local environment. To extend the territory and shorten the time required to familiarize themselves with the Taiwan market, foreign investors are willing to pay a premium, and therefore this study hypothesizes the following.

Hypothesis 1 : Financial institutions with higher proportions of foreign ownership, or the investors in private placements, including foreign investors, tend to sell the private equity placements at a premium.

If the investors in private placements include insiders in financial institutions, then based on the information cost hypothesis, insiders will have more information than outsiders, and thus will receive less compensation from the discount, but the principal- agent, self-interest hypothesis indicates that if managers hold fewer shares, they can subscribe to new shares at a lower price and through skill at buying low and selling high, generating a wealth-transfer effect, and thus causing the private placement to sell at a large discount; however, if outsiders obtain a board seat via a private placement, then their ability to receive the controlling rights enables them to pay a premium, and they will pay a higher premium if they expect to receive more benefits. Accordingly, this study develops hypothesis 2.

Hypothesis 2: If investors in a private placement include insiders, the private placement will sell at a discount; but if outsiders can gain board seats from a private placement they become willing to pay a premium for the private placement.

Corporate Governance

According the convergence of interest hypothesis presented by Jensen and Meckling (1976), which stated that when controlling shareholders held more cash flow rights, their interests were more consistent with other shareholders, and therefore they became less likely to deprive minority shareholders of their rights. This study uses number of instances of share-earning and seat-earning violations to measure share-right violation level, and posits that if the controlling rights are far from cash flow rights and earnings distribution rights, then investors in private placements will request a price premium to compensate for the rights lost. Therefore, this study presents hypothesis 3.

Hypothesis 3: The larger the number of share earnings and seat earnings violations, the more likely the private placement will sell at a premium to compensate for the controlling shareholders for their lost control right.

Previous literature indicates that the agent cost reduces with increasing shareholding of directors and supervisors. This reduces the likelihood of a financial crisis (Hóngxīnlíng (2005). Xióngdàzhōng (2000) noted that the higher the collateral percentage of directors and supervisors, the higher the probability of a financial crisis occurring. Zhào zhuāng mǐn dài déshēng (2006) found that the higher the collateral of directors and supervisors, the more likely that performance would suffer a negative impact, supporting the entrenchment hypothesis. In our opinion, the larger the shareholding of directors and supervisors in financial institutions, the more likely that their decisions will match the interests of other shareholders, and thus private equity placements tend to sell at a premium. Two main perspectives exist in relation to the collateral percentage of directors and supervisors, Zhāngrúxīn (2007) believed that higher collateral percentage of directors and supervisors represented worse corporate governance, leading to private placements tending to be sold at a discount. Another perspective believed that owing to concerns about the share price reducing and collateral shares being sold off, the tendency to sell a private placement at a premium increases with the collateral percentage of the directors and supervisors]. Based on this perspective this study established hypothesis 4.

Hypothesis 4: The higher the shareholding of the directors and supervisors in the financial institution, the more their decisions agree with the interests of the other share holders, leading to private equity placements tending to sell at a premium. Higher collateral percentages of the directors and supervisors represented worse governance, so private equity placements tend to sell at a discount.

Yècǎilián *et al* (2010) investigated differences in earnings management in the Taiwanese banking industry in different environments. They found that owing to the occurrence of the local financial storm, the allowance for bad debts increased with bank earnings. Top managers enjoy using the skill of writing off the uncollectible account to prevent company from the financial crisis. Since the empirical period examined in this investigation included the credit card storm for retail finance, during this period banks faced substantial credit risk and generated large amounts of bad debts, and so this study attempts to examine whether financial institutions provide significant bad debts before private placement to manipulate earnings and thus attract investors. Because of being

misled by window-dressing financial statements, investors have good expectations regarding future performance. These phenomena caused insiders to increase the share price inappropriately, and led to investors preferring to pay a premium for private equity placements. Based on the above perspectives this study presents hypothesis 5.

Hypothesis 5: If the financial institution allows for provision abnormally bad debts] before the private placement, it will tend to sell the private equity placement at a premium.

Operating Performance

Financial institutions face numerous risks, including liquidity risk, interest rate risk and credit risk. The firm uses its own capital to offset the losses associated with the above risk. Therefore capital adequacy ratio is a very important index. Since 2002, the first bank reform announced a “2-5-8 policy”, which required banks to maintain capital adequacy ratios higher than 8%. Generally, higher capital adequacy ratio represented that the financial institution owned sufficient capital, providing better protection to investors. Moreover, the higher rate of return of assets and lower cost-revenue ratio represent better overall profitability. Therefore, this study assumed that higher capital adequacy ratio is associated with higher rate of return on assets and lower cost-revenue ratio, resulting in selling the private equity placement at a premium, and thus established hypothesis 6.

Hypothesis 6: Financial institutions with higher capital adequacy ratio had higher ability to deal with losses, and thus tended to sell private equity placements at a premium; higher rate of return on assets and lower cost-revenue ratio tended to be associated with firms selling the private equity placement at a

Market structure

Boyd and Gianni (2005) stated that a concentrated market would increase the profitability of the banking industry. Furthermore the market power hypothesis also indicates that if the financial market is less competitive, credit rationing will occur and loan prices will be more tightly controlled. Chén zhōnghuá and wú mèng wén (2010) used data from 44 countries to perform an empirical study, and found a positive relationship between market share and profitability, supporting the market power hypothesis. Market power is clearly strongly related with financial institution performance. Because financial institutions with more market power also have more negotiating power, they also tend to achieve higher profitability. Berger (1995) used market share to measure market power, and this study focuses on both market share and market concentration, and also uses the Herfindahl-hirschman index (HHI) to see whether it impacts private placements

sell at a discount or a premium, based on above statement we establish hypothesis 7.

Hypothesis 7: Financial institutions with more market power have more negotiating power, and therefore tend to sell private equity placements at a premium.

Information Asymmetry

Regarding information asymmetry, if the issuing scale or size of a financial institution is larger, or if the institution has been established for longer, the cost to investors of collecting the information is cheaper, resulting in a smaller discount level; moreover, if the proportion of private placement is higher, because of the original investor having no preemptive right to subscribe to the shares, the new shareholders will benefit more, and thus they will receive a smaller discount. Based on the above statement, this study established hypothesis 8.

Hypothesis 8: The discount level reduces with increasing size of the issuing scale, size of the financial institution, or length of establishment; if the proportion of private placement is higher, it tends to sell the private equity placement at a discount.

2. The Empirical Model and Variables Measure

This study discusses factors impacting whether financial institutions sell private equity placements at a discount or premium in five different dimensions, including investor identity, corporate governance, operating performance, market structure and information asymmetry, and uses the OLS method to perform regression analysis. Furthermore, considering variable robustness, this study constructs the Tobit model for further analysis and comparison. The regression model can be used in different definitions and can distinguish the definitions of the independent variables in the model itself. Therefore this study defines the discount or premium in the private equity placement as $(\text{Reference price} - \text{Declaration price}) / \text{Declaration price}$ in the OLS model, but defines them as $(\text{Reference price} / \text{Declaration price})$ in the Tobit model, where all the values of this definition exceed 0; therefore this investigation applied the Tobit model, which limited the value scope of the dependent variable. This study also defined the reference price as the higher of the closing price of common stock before pricing days 1, 3 and 5, or the simple arithmetic average 30 business days of closing price of common stock before pricing day. Based the previous research hypothesis and variable definition, this study set the regression model as follows:

$$Discount_j = \alpha_j + \sum_{j=1}^4 u_i Invj_i + \sum_{j=1}^6 \beta_i Govj_i + \sum_{j=1}^3 \gamma_i Perj_i + HHI_i + \sum_{j=1}^4 \delta_i Infj_i + \varepsilon_i$$

In the model, i denotes as the sample i , and j represents the j th variable of the specified dimension. The following table defines the model variables.

Table 1

Factors impacting the price of private placement sell at a discount or premium of financial institution and variables definition

Factors Impact	Variable	Symbol	Expect Direction	Definition
Dependent	Equity Discount or Premium	<i>Discount</i>	+/-	Reference price-Declaration price/Declaration price ³
Identity of the Investor (<i>Inv</i>)	Foreign Investor	<i>Inv1</i>	-	The dummy variable <i>inv1</i> will be 1 if the private placement has the foreign investor involved, otherwise 0.
	Percentage of Share Held by Foreign Investors (%)	<i>Inv2</i>	-	Shares held by foreign people + shares held by foreign financial institution + shares held by foreign legal person + shares held by foreign trust fund
	Insider Participation	<i>Inv3</i>	+	The dummy variable <i>Inv3</i> will be 1 if the investors of the private placement had managers include, otherwise 0.
	Director Seats by Foreign Investor	<i>Inv4</i>	-	Measure the controlling right for outsider by getting the seats of director, when outsider get the director seat after the private placement, <i>Inv4</i> will be 1, otherwise 0.
Corporate Governance (<i>Gov</i>)	Times of Share-Earning Violation	<i>Gov1</i>	-	Share controlling right/Earning distribution right
	Times of Seats-Earning Violation	<i>Gov2</i>	-	Seats controlling right/Earning distribution right
	Interaction of Percentage of Shares	<i>Gov3</i>	-	Share holding percentage by directors and supervisors* (1 - collateral percentage by

³ This is the definition for OLS model, but in Tobit model its' definition is reference price/ declaration price.

	Held by Directors and Supervisors and of which Shares are not Collateralized			directors and supervisors)
	Percentage of Shares Held by Directors and Supervisors (%)	<i>Gov4</i>	—	(Total shares held by directors and supervisors/outstanding shares)*100
	Percentage of the Shares Held by Directors and Supervisors which are Collateralized (%)	<i>Gov5</i>	+	(Shares held by directors and supervisors collateralized/ Total shares held by directors and supervisors)*100
	Abnormal allowance for bad debts	<i>Gov6</i>	—	The allowance for bad debts at the end of the year before one year of the declaration day are more than previous two years, and the level are up to 15%, the sample will be regard as through private placement to manipulate the earning, the dummy variable of <i>Gov6</i> would equal 1, otherwise 0.
Operating performance (<i>Per</i>)	Capital Adequacy Ratio (%)	<i>Per1</i>	—	(Qualified capital-capital deductive items) / (credit risk weighted risky assets+ market risk and operating risk provided by capital *12.5) ⁴
	Rate of Return on Assets (%)	<i>Per2</i>	—	Continuing net income before depreciation but after tax /average total assets *100
	Cost Revenue Ratio (%)	<i>Per3</i>	+	Operating cost/net operating revenue*100
Market Structure (<i>HHI</i>)	Herfindahl-Hirschman Index	<i>HHI</i>	—	$HHI = \sum_{i=1}^n S_i^2$ <p>Si : The market share among the industry of individual financial company , the market share described respectively below: Bank : Total assets of individual bank/Total assets of total banks ◦ Securities : Net operating revenues of individual</p>

⁴ After application Basel II in 2007, this definition is used for capital adequacy ratio. If the sample period is before 2007, it used the definition as (Qualified capital-capital deductive items) / (credit risk weighted risky assets+ market risk and operating risk provided by capital *12.5) before 2006.

				underwriter/ Total net operating revenues of total underwriters ° Insurance : Net operating revenues of individual insurance company/ Total net operating revenues of total insurance companies ⁵
Information Asymmetry (Info)	Issuing Scale	<i>Info1</i>	+	Logarithm of equity private placement to measure
	Issuing Percentage (%)	<i>Info2</i>	+	Shares of private placement/total shares after private placement
	Size of Financial Institution ⁶	<i>Info3</i>	+	Logarithm of total stockholder's equity at the end of the year before one year of the pricing day
	Founding Years of the Financial institution	<i>Info4</i>	+	Founding years of the financial institution since the pricing day of the private placement and logarithm the founding years to measure

IV Data and Descriptive Statistic

1. Data Source

This study focuses on listed and OTC companies and financial institutions engaged in public offerings. Besides private placement data this study also gathers public offering data for comparison. Since the inception of private placements in 2002, this study gathered eight years of data covering 2002 to 2010, total 68 observations. Within the data set, 32 observations involved private placements and 36 involved public offerings. To clearly reflect the real world situation, for samples belonging to the former half year, this study instead used data from the end of the last year, and for data belonging to the latter half year, this study used data from the semi-annual financial reports of the current year. To measure the equity discount or premium of the dependent variable, this study used the M/B ratio of the last three years to calculate the simple arithmetic average to estimate the share price for unlisted financial institutions. Moreover, because of financial holding companies being mainly intended for investment, and thus differing from financial institutions, this study excluded such samples. Furthermore, to avoid large variance in equity, this study deleted data on firms that used preference shares or convertible bonds to raise capital. This study only included private placement events involving the issue of common stock to raise capital. Furthermore, this study obtained data from the TEJ data base and the annual and semi-annual

⁵ Because of the different content and object of the property and life insurance, so we separate these two kinds of insurance to calculate the market share.

⁶ In this study we try to use total asset of financial institution as the size proxy for financial institution scale, since the model appears a relative big auto-correlation and results a worse fitting, so we use total shareholders' equities instead.

financial statements of each financial institution.

2. Descriptive Statistic

This study divides the samples into private placement, public offering and total of both. According to different methods of raising capital, and listed the descriptive statistics for the mean and median, as well as using the Kruskal-Wallis, T test to examine whether the mean or median of public offering and private placement exhibit significant differences.

Table 2 lists the descriptive statistics of different variables. First, this study found that unlike public offerings, private placements generally sell at a premium. The median has significant difference in 5% level. Regarding investor identity, the variable of the percentage of shares held by foreign investors, the median of public offering are significant higher than private placements. In the dimension of corporate governance, the mean and median in times of share-earning violation and times of seat-earning violation of private placement significantly exceed the public offering, the significant level of median is up to 1%, revealing that share-right violation is serious, and both the percentage of shares held by directors and supervisors and the percentage of shares held by directors and supervisors which are collateralized, are higher for private placements than public offerings, but only the former differ significantly. The last variable of abnormal allowance for bad debts also differs significantly between private placements and public offerings. These phenomena reveal that earnings management is more likely to occur in association with private placements than public offerings.

Regarding the operating performance dimension, the mean and median of ROA are -0.8% and -0.02%, worse than the levels for public offerings, namely 0.12% and 0.22%, respectively. Furthermore, the mean and median of the cost revenue ratio of private placement are 27.69% and 29.61%, still exceeding the levels for public offerings, namely 24.49% and 27.44%. The results presented in this study are obtained from the empirical findings, and show that the operating performance of public offerings exceeds that of private placements, but the difference is not significant. Regarding the perspective of market structure measured by HHI, the mean of private placement and public offering do not differ significantly, but the median (4.37) of public offering is higher than for private placement (4.28), and moreover the difference is significant at the 10% significance level. Finally, this study discusses the dimension of information asymmetry, and finds that the issuing percentage for public offerings is significantly higher than for private placements, and the mean is significantly different at the 5% significance level, but the mean and median of issuing scale and average of total equity in private placement exceed those for public offerings. As for the number of founding years of financial institutions, firms issuing private placements have been established for an average of 25.44 years, less than those issuing public offerings, at 32.92 years. Moreover, the same results are obtained for the median but are insignificant.

Table 2 Descriptive Statistics

Dimension	Variables	Type	Mean	Median	Maximum	Minimum	Standard Deviation
	Discount or Premium on Equity	Total	-0.080	0.027	0.910	-0.957	0.382
		Private	-0.116	-0.132	0.910	-0.733	0.356
		Public	-0.018	0.107** ⁷	0.744	-0.957	0.385
Identity of the investors	Foreign Investors ⁷ Share Holding Percentage (%)	Total	8.52	1.34	62.28	0	15.71
		Private	8.73	0	62.28	0	17.55
		Public	8.09	2.62**	62.28	0	13.95
	Foreign- type Investor ⁸	Private	0.25	0	1	0	0.44
	Insider Participation	Private	0.0625	0	1	0	0.246
	Director Seat Held by Outsider	Private	0.156	0	1	0	0.369
Corporate Governance	Times of Share-earning Violation	Total	10.21	2.49	192.31	1	28.54
		Private	15.24	5.25	192.31	1	37.42
		Public	5.74	1.65***	99	1	16.59
	Times of Seat-earning Violation	Total	11.23	4.20	192.31	1.09	28.18
		Private	15.95	5.83	192.31	1.09	37.12
		Public	7.04	3.28**	99	1.431	16.15
Corporate governance	Percentage of Shares Held by Directors and Supervisors (%)	Total	58.53	57.44	100	0	39.74
		Private	70.91	100	100	0	41.15
		Public	47.53*** ⁹	41.95**	100	5.57	35.47
	Percentage of shares held by director and supervisor collateralized (%)	Total	14.49	0	99.38	0	27.28
		Private	18.28	0	99.38	0	31.44
		Public	11.12	0	71.81	0	22.89
	Abnormal	Total	0.279	0	1	0	0.452

⁷ The star signal represents the K-W test of private placement and public offering, *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.

⁸ Foreign- type investors have no data concerning to public offering, therefore we just list the descriptive statistics of private placement here.

⁹ The star signal represents the T test of private placement and public offering, *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.

	Provision for Bad Debts	Private	0.438	0	1	0	0.504
		Public	0.139**	0***	1	0	0.351
Operating Performance ¹⁰	Rate of Return on Assets (%)	Total	-0.31	0.17	3.08	-13.23	2.14
		Private	-0.80	-0.02	1.88	-13.23	2.75
		Public	0.12	0.22	3.08	-4.28	1.30
	Cost Revenue Ratio (%)	Total	26.00	27.51	64.5	0.99	15.24
		Private	27.69	29.61	64.5	0.99	15.70
		Public	24.49	27.44	55.65	1	14.88
Market Structure	HHI (%)	Total	6.30	4.35	20.11	2.81	4.17
		Private	6.02	4.28	14.98	2.85	3.93
		Public	6.56	4.37*	20.11	2.81	4.41
Information asymmetry	Issuing Scale (Million)	Total	4,502	3,000	18,000	62	4,083
		Private	5,475	4,000	18,000	165	4,683
		public	3,636	3,000	13,500	62	3,294
	Issuing Percentage (%)	total	19.5	15.12	84.62	2.43	0.17
		Private	17.47	10.56	79.70	2.43	17.69
		Public	21.30	16.22**	84.62	3.80	17.13
	Total Shareholders' Equity (Million)	Total	23,403	15,700	123,351	551	24,637
		Private	27,802	18,372	89,457	551	24,456
		Public	19,493	13,051*	123,351	1,131	24,470
	Founding Years of Financial Institution(Year)	Total	29.40	18	62	6	17.46
		Private	25.44	17	62	6	14.76
		Public	32.92	35.5	62	10	19.08

V Empirical results

Before the empirical analysis, this study performed a VIF test, and the results show a significant correlation between times of share-earning and seats-earning. Therefore these two variables should be examined using different regression models. Besides that factor, this study still found that the VIF value of the interaction of the shareholding percentage of directors and supervisors, and of which shares not collateralized and both of them individually all exceeded 10. Furthermore, the Pearson correlation coefficient of the interaction item and shareholding percentage of directors and supervisors was 0.8959, demonstrating a close correlation. But the

¹⁰ Since the bank, insurance and security companies have different measures of capital adequacy ratio, therefore we ignore the descriptive statistics here.

coefficient of the previous interaction item and percentage of shares held by directors and supervisors that are collateralized is -0.6709, and thus the interaction items are individually entered into the regression model.

This investigation uses OLS to examine the factors impacting whether private placements sell at a discount or premium, and uses the Tobit regression model to perform further robust analysis, where the dependent variable is defined as $(\text{Reference price} - \text{Declaration price}) / \text{Declaration price}$ in the OLS model, while in Tobit model it is defined as $(\text{Reference price} / \text{Declaration price})$ and for this value exceed 0. Therefore the Tobit model is applied, limiting the value scope of independent variables. Tables 3 and 4 list the results.

Table 3

The OLS model results of factors impacting private placement selling at a discount or premium

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-3.4817***	-3.5332**	-2.4232	-2.3059	-3.9529**	-4.8623**	-10.8382***	-9.7665***
Times of Share-earning	0.0015	0.0005	0.0012	0.0003	0.0014	0.0004	0.0015	0.0013
Violation (Gov1)								
Interaction of the Percentage of Shares Held by Director and Supervisor and of Which Shares not Collateralized (Gov3)	-0.0046**		-0.0040*		-0.0070***		-0.0092***	
Percentage of Shares Held by Directors and Supervisors (Gov4)		-0.0022		-0.0020		-0.0054		-0.0064**
Percentage of Shares Held by Directors and Supervisors and of Which are Collateralized (Gov5)		0.0048*		0.0047*		0.0073**		0.0114*
Abnormal Allowance for Bad Debts (Gov6)	-0.0470	0.0203	-0.0144	0.0546	-0.1237	-0.1190	-0.2216	-0.2394
Foreign Investor*Percentage of Share Held by Foreign Investor (Inv1*Inv2)					-0.0058	-0.0037	-0.0077	-0.0012
Insider Participation (Inv3)					0.4810	0.8449		
Director Seats Belong to Foreign Investor (Inv4)					-0.1403	-0.2509	0.0622	-0.0848
The Ratio of Capital							0.0062	0.0110

Adequacy	(Per1)								
Rate of Return on Asset	(Per2)			0.0284	0.0347	0.0301	0.0442	-0.0285	-0.0111
Cost Revenue Ratio	(Per3)			-0.0025	-0.0037	-0.0010	-0.0024	0.0125	0.0069
Herfindahl-Hirschman		-0.0019	0.0039	-0.0019	0.0027	-0.0183	-0.0166	-0.0288	-0.0261
I dex	(HHI)								
Issuing Size	(Info1)	-0.1739	-0.2497*	-0.2012	-0.2789**	-0.1851	-0.2464*		
Issuing Proportion	(Info2)	0.0110*	0.0128**	0.0113*	0.0128**	0.0132*	0.0143**	0.0102**	0.0053
Financial Institution Size		0.3024***	0.3665***	0.2744**	0.3386**	0.3800***	0.5091***	0.6598**	0.6023***
	(Info3)								
Founding years	(Info4)	0.3256**	0.2705*	0.2811*	0.2033	0.2253	0.0644	-0.1275***	-0.1742
Adjusted R-square		0.3049	0.2549	0.2994	0.2940	0.2982	0.3387	0.7312	0.7970
F Value		2.64**	2.14*	2.28*	2.14*	1.98*	2.1*	5.53**	7.04***

Footnotes:

- a. *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.
- b. Since the results of Times of Share-Earnings Violation (*Gov1*) and Times of Seat-Earning Violation (*Gov2*) are the same, for editing arrangement, we just present the results of *Gov1*.
- c. In this study we try to use total asset of financial institution as the size proxy for financial institution scale, since the model appears a relative big auto-correlation and results a worse fitting , so we use total shareholders' equities instead.
- d. Since the ratio of capital adequacy of banking, security and insurance have different measure, and many samples in this study are belonging to banking, therefore in model 7 and 8 we just put the samples of banking industry.

Table 4

Tobit model selling private placement at a discount or premium

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-2.4817**	-2.5332**	-1.4232	-1.3059	-2.9529**	-3.8623***	-9.8382***	-8.7665***
Times of Share-earning	0.0015	0.0005	0.0012	0.0003	0.0014	0.0004	0.0015	0.0013
Violation (Gov1)								
Interaction of the Percentage of Shares Held by Director and Supervisor and of Which Shares not Collateralized (Gov3)	-0.0046***		-0.0040**		-0.0070***		-0.0092***	
Percentage of Shares Held by Directors and Supervisors (Gov4)		-0.0022		-0.0019		-0.0053**		-0.0064***
Percentage of Shares Held by Directors and Supervisors and of Which are Collateralized (Gov5)		0.0048**		0.0047**		0.0073***		0.0114***
Abnormal Allowance for Bad Debts (Gov6)	-0.0470	0.0203	-0.0144	0.0546	-0.1237	-0.1189	-0.2215**	-0.2394***
Foreign Investor*Percentage of Share Held by Foreign Investor (Inv1*Inv2)					-0.0057*	-0.0037	-0.0077***	-0.0012
Insider Participation (Inv3)					0.4809	0.8449**		
Director Seats Belong to Foreign Investor (Inv4)					-0.1403	-0.2509	0.0622	-0.0848
The Ratio of Capital Adequacy (Per1)							0.0062	0.0110

Rate of Return on Asset (<i>Per2</i>)			0.0284	0.0347	0.0301	0.0442	-0.0285	-0.0110
Cost Revenue Ratio (<i>Per3</i>)			-0.0025	-0.0037	-0.0010	-0.0024	0.0125***	0.0069**
Herfindahl-Hirschman Index (<i>HHI</i>)	-0.0019	0.0038	-0.0019	0.0027	-0.0183	-0.0166	-0.0288***	-0.0261**
Issuing Size (<i>Info1</i>)	-0.1738*	-0.2497**	-0.2012*	-0.2789***	-0.1851*	-0.2464**		
Issuing Proportion (<i>Info2</i>)	0.0110**	0.0128***	0.0113**	0.0128***	0.0132***	0.0143***	0.0102***	0.0053**
Financial Institution Size (<i>Info3</i>)	0.3024***	0.3665***	0.2744***	0.3386***	0.3800***	0.5091***	0.6598***	0.6023***
Founding years (<i>Info4</i>)	0.3256***	0.2705**	0.2811**	0.2033	0.2253*	0.0644	-0.1275	-0.1742**
Log likelihood	-2.3356	-2.6905	-0.9786	-0.3043	1.5122	3.3732	17.4409	21.7895
Wald value	13.3413	13.5898	19.5178**	20.7012**	21.2739*	22.3334*	17.8864	15.3315

Footnotes:

- a. *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.
- b. We define the variable of Discount as reference price/ Declaration price in Tobit model.
- c. These data are not censored but truncated, therefore most of the results are same as OLS model. However the significance in Tobit model are significantly increase, here we present the results of Tobit model too.
- d. Since the ratios of capital adequacy of banking, insurance and security companies have different measure, and many samples in this study are belonging to banking, therefore in model 7 and 8 we just put the samples of banking industry.

Table 3 lists the variables of corporate governance, market structure, and information asymmetry in Models 1 and 2. The difference between these two models is that Model 1 includes variables of interaction for the shareholding percentage of directors and supervisors and for the percentage of shares not collateralized, and Model 2 includes variables of the percentage of shares held by directors and supervisors and the percentage of shares held by directors and supervisors which are collateralized, respectively. Models 3 and 4 include the variables of the dimension of operating performance, and Models 5 and 6 include the variables of the dimension of the identity of investors. Furthermore, Models 7 and 8 include the variable of capital adequacy ratio, since different capital adequacy ratio criteria exist in the banking, insurance and securities industry, but to avoid large differences in measuring capital adequacy ratio this study only considered the banking industry. All models displayed 10% significant model fit.

The results listed in Table 3 show that in the dimension of investor identity, when foreign investors are involved (*Inv1*) their percentage ownership of financial institutions (*Inv2*) is relatively higher. Owing to the participation of foreign capital, firm operating performance is good, resulting in private equity placements selling at a premium, supporting hypothesis 1. When insiders are involved, private equity placements tend to sell at a discount, resulting in a wealth shifting or transfer effect, consistent with the previously mentioned weakness of private placement. If outsiders obtain director seats from private placements, they tend to purchase at a premium, supporting hypothesis 2. However, all of these perspectives are insignificant. In the dimension of corporate governance, the interaction of percentage of shares held by directors and supervisors and the percentage that is not collateralized (*Gov3*) is significantly negative, indicating that the higher the proportion of shares held by directors and supervisors and not collateralized, the better the governance of the financial institutions, leading to private equity placements being sold at a premium. This study also performs testing using percentage of shares held by directors and supervisors (*Gov4*) and percentage of shares that which are collateralized (*Gov5*) and obtains the same results. The former variable displays negative significance, which presented that the higher the proportion of shares held by directors and supervisors, the more likely the private placement is to be sold at a premium, moreover when the latter displayed positive significance it presented a higher collateralized ratio], indicating worse corporate governance], leading to the private placement selling at a discount], supporting hypothesis 4.

In the dimension of operating performance, only cost revenue ratio (*Per3*) displays positive significance, presenting that the higher the cost revenue ratio, the lower the profitability of the financial institution, resulting in the private placement selling at a discount; as for the Herfindahl-hirschman index (*HHI*), it does not significantly affect the selling price to private placements. Regarding the dimension of information asymmetry, this study found that the variable of scale (*Info 1*) has negative significance, inconsistent with the hypothesis, possibly because the original investors have no preemptive right to subscribe to the shares, and so the investor involved in the private placement wants to compensate them, and therefore is willing to pay a premium. The information asymmetry reduces with increasing scale of issue and longer issuing company history.

Thus the cost used to compensate investors for collecting the information is reduced, and so too is the discount level, supporting hypothesis 8.

Table 4 lists the empirical results obtained using the Tobit model, most of which are the same those obtained using the OLS model. In the dimension of corporate governance, the significance increases for the following two variables: the percentage of shares held by directors and supervisors (*Gov4*) and the percentage of shares which are collateralized (*Gov5*). The abnormal provision for allowance for bad debts is significantly negative, indicating that the financial institution really exhibits window dressing of the financial statements, and therefore the private equity placement sells at a discount, supporting hypothesis 5. Regarding the perspective of investor identity, the interaction of the proportions of shares held by foreign investors and foreign investors (*Inv1*Inv2*) and insider participation (*Inv3*) become significant after initially being insignificant. The market structure measured using HHI was significantly negative, indicating that the possibility of a private placement selling at a premium increases with HHI, proving that financial institutions with larger market share are in a stronger negotiating position, and thus the private equity placement sells at a premium, supporting hypothesis 7.

Previous studies mostly focused on listed and OTC companies to examine the selling price of private placement. Their findings in the perspective of investor identity are same as the financial institutions, and private placements including insiders tended to sell at a discount, supporting the entrenchment hypothesis (Chén jùn hé et al (2009)). Furthermore, the higher the percentage shareholdings of directors and supervisors and the lower the level of collateralization, the better institutional corporate governance, leading the private placement to sell at a premium, yielding identical results to those found for listed and OTC companies (Zhāngrúxīn (2007)). The results in the dimension of information asymmetry also support the information asymmetry hypothesis, meaning that discount on the selling price is used to compensate for the cost to the investor of information collection (Bajaj(2002), Zhāngwǎnyù děng (2010)). Therefore, although the regulation and organization structure of financial institution differ significantly from other industry, but the results showed that the factors impacting the selling price of the private placement are mostly the same.

VI Robust analysis

Besides using the previous five dimensions to investigate the factors that impact whether a private placement sells at a discount or premium, this study added additional factors to perform robust testing. The main variables include financial structure, macro-economic, market performance, and whether the individual sample belongs to the financial holding system, which is the unique variable of the financial service industry, and so is specifically considered. To maintain consistency with the previous research model, this study continues to use OLS regression and the Tobit model for the empirical analysis.

Table 5 and 6 listed the empirical results of the robust analysis, Models 1 and 2 presented the original two dimensions of corporate governance and information asymmetry and included the additional macro-economic variables. Furthermore, Models 3 and 4 included the additional variables of whether the financial institution belongs to the financial holding company. This study included the additional variables of market performance in Models 5 and 6, and included the variables of financial structures in Models 7 and 8. This study discusses the results of the variables below.

1. Macro-Economic Variables

To understand whether the variables of macro-economic impact whether a private placement sells at a discount, this study conducted a further study examining the additional macro-economic variables. This study included two variables of gross domestic product (GDP) and increasing rate of money supply (M2), and described their measures as the variable definition, if using data from the first half of the current year this study uses data from the end of the previous year, and if using data from the latter half of the current year, this study uses semiannual data from the current year, and calculates a logarithm of GDP, and the increasing rate of money supply presented by percentage. Table 5 shows that both these variables are significantly negative, which reveals that the better condition of the macro-economic, the more sufficient fund flow in the market, and therefore the easier private equity placements are to sell at a premium, as shown in Table 6.

2. Whether the financial institution belong to the financial holding system

The Legislative Yuan passed the Financial Holding Company Act in 2001 and since then many financial institutions have joined financial holding companies (hereafter BHC). Numerous studies have examined the impact of companies joining] BHC, with examples including the research of Xǔyùpèi and zhāngxījiè (2005), who noted that whether a bank joins a BHC has significant implications for its competitive advantage and performance. Liú xuě líng (2009) also [pointed out that banks joining BHCs could use other market channels to help cross-sell their products to increase revenue from commissions or retail finance and enhance their performance. Chén zhōnghuá (2002) used the CAMEL approach to compare bank performance between those joining BHCs and those not joining BHCs, and concluded that on average that banks join BHCs outperform those than do not. The empirical results of Ashcraft (2008) presented that banks join BHCs can receive fund from parent company, and thus have lower operating costs than banks without parent companies. This study examines whether financial institutions joining BHCs will impact whether private equity placements sell at a discount or a premium, this is a dummy variable named BHC, and if the financial institutions join BHCs, the variable will be 1, while otherwise it will be 0. Table 5 listed that the results were significantly negative at 10%, representing that financial institutions belonging to BHC have better performance and lower business risk than those not belonging

to BHC. Therefore private equity placements always sell at a premium, contradicting the result found in Chénjīncūn *et al.* (2011), which pointed out that if financial institutions belong to BHC, they will engage in private placements with related companies], meaning the parent company of BHC purchased the private equity placement of the subsidiary, enabling it to be sold at a discount.

3. Market Performance

Regarding the perspective of market performance, this study includes the variables of rate of return of weighted average index of financial shares (*Freturn*) and rate of return of Taiwan weighted average index of overall shares (*Treturn*), and since the reference price of private placement relates to the closing price before the pricing day, this study uses the previous two variables to examine whether they impact whether the private placement sells at a premium or discount, and finds the OLS regression result from Table 5. This study thus showed that both these variables are insignificant, but Table 6 showed that both *Freturn* and *Treturn* have increasing significance which presented that the higher the *Freturn*, the more financial institutions tend to sell private placements at a discount. The reason for these phenomena may relate to attracting investors to participate in private placements for financial institution rather than for investment in other assets, leading them to offer discounted prices to attract investors.

4. Financial Structure

Besides the variables of corporate governance mentioned in the previous section, for robustness this study removes rate of return on assets and instead uses rate of share equity plus ratio of net worth (*ET*) for the testing. Table 5 shows that ratio of net worth is significantly positive, and represented that private placement tends to be sold at a larger discount as ratio of net worth increases. Owing to the financial industry primarily being involved in lending business, the ratio of net worth has little explanatory power in the financial industry. Table 6 shows that the rate of return of shareholder equity is significantly negative, and reveals that company performance tends to improve with increasing rate of return of shareholder equity, and thus private placements tend to sell at a discount.

Table 5 the robust test of OLS regression result

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	60.3506*	61.0929*	59.1471*	55.3804*	62.1604*	57.4992*	96.1197**	88.6629**
Times of share-earning violation (Gov1)	0.0020	0.0016	0.0023	0.0019	0.0023	0.0020	0.0021	0.0017
interaction of the percentage of shares held by director and supervisor and of which shares not collateralized (Gov3)	-0.0035*		-0.0023		-0.0013		-0.0038	
percentage of shares held by director and supervisor (Gov4)		-0.0025						
percentage of shares held by director and supervisor and of which are collateralized (Gov5)		0.0033		0.0033		0.0026		0.0037
Abnormal allowance for bad debts (Gov6)	-0.1471	-0.1277	-0.1862	-0.1632	-0.2205	-0.1845	-0.2153	-0.1882
Self –capital ratio (ET)							0.0023*	0.0022*
Rate of return on shareholders' equity (ROE)							-0.0027	-0.0018
Belong to financial holding company or not (BHC)			-0.1478	-0.2989*	-0.2566	-0.3273*	0.0533	-0.2130
Weighted index of financial industry share (Freturn)					0.0004	0.0008	-0.0077	-0.0057
Taiwan overall share weighted index (Treturn)					0.0045	0.0032	0.0151	0.0125
Gross domestic product	-4.1622**	-4.2245**	-4.0968*	-3.8760*	-4.2938*	-4.0076*	-6.4557**	-5.9942**

<i>(GDP)</i>									
Increasing rate on Currency supply		-0.1275**	-0.1378***	-0.1358**	-0.1373***	-0.1504**	-0.1450**	-0.1837***	-0.1814***
	<i>(M2)</i>								
Herfindahl-hirschman index		-0.0164	-0.0142	-0.0178	-0.0155	-0.0193	-0.0168	-0.0309	-0.0274
	<i>(HHI)</i>								
Issuing size	<i>(Info1)</i>	-0.1153	-0.1538	-0.1035	-0.1382	-0.0857	-0.1194	-0.0528	-0.0954
Issuing proportion	<i>(Info2)</i>	0.0096*	0.0103*	0.0094*	0.0097*	0.0091*	0.0093*	0.0074	0.0083
Financial institution size	<i>(Info3)</i>	0.2000**	0.2457**	0.2042**	0.2627**	0.1846*	0.2363**	0.1257	0.1891*
Founding years	<i>(Info4)</i>	0.2288*	0.1979	0.2431*	0.2060	0.2606*	0.2285	-0.1105	-0.1161
Adjusted R-square		0.4514	0.4389	0.4286	0.4715	0.4049	0.4365	0.4688	0.5025
F value		3.47***	3.13**	3.05**	3.43***	2.57**	2.79**	2.76**	3.02**

Footnotes:

a. *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.

b. Since the results of times of share-earnings violation (*Gov1*) and times of seat-earning violation (*Gov2*) are the same, for editing arrangement, we just present the results of *Gov1*.

Table 6 the robust test of Tobit regression result

independent	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	7.1935	8.7398	4.6301	6.4740	-17.3848	-14.9892	10.5030	12.7722
Times of share-earning violation (Gov1)	-0.0006	0.0001	-0.0000	0.0002	-0.0003	-0.0002	-0.0003	-0.0001
interaction of the percentage of shares held by director and supervisor and of which shares not collateralized (Gov3)	-0.0020		0.0005		0.0029		0.0009	
percentage of shares held by director and supervisor (Gov4)		-0.0032						
percentage of shares held by director and supervisor and of which are collateralized (Gov5)		-0.0015		-0.0013		-0.0020		-0.0015
Abnormal allowance for bad debts (Gov6)	0.0381	-0.0501	-0.0453	-0.0611	0.0642	0.0695	0.0492	0.0292
Self-capital ratio (ET)							0.0019*	0.0019*
Rate of return on shareholders' equity (ROE)							-0.0041*	-0.0044
Belong to financial holding company or not (BHC)			-0.3149	-0.2857	-0.4967	-0.2796	-0.2653	-0.2133
Weighted index of financial industry share (Freturn)					0.0165***	0.0153**	0.0097	0.0094
Taiwan overall share weighted index (Treturn)					0.0135*	0.0122*	0.0053	0.0046
Gross domestic product	-0.5118	-0.6196	-0.3726	-0.4844	1.0838	0.9454	-0.7080	-0.8491

<i>(GDP)</i>									
Increasing rate on Currency supply		-0.0981**	-0.1204**	-0.1157**	-0.1172**	-0.0724	-0.0669	-0.1045**	-0.1071**
	<i>(M2)</i>								
Herfindahl-hirschman index		-0.0117	-0.0156	-0.0148	-0.0158	-0.0092	-0.0101	-0.0195	-0.0208
	<i>(HHI)</i>								
Issuing size	<i>(Info1)</i>	-0.2140*	-0.1761	-0.1889*	-0.1743	-0.2295**	-0.2099*	-0.2039**	-0.1863*
Issuing proportion	<i>(Info2)</i>	0.0046	0.0040	0.0042	0.0041	0.0053	0.0048	0.0036	0.0034
Financial institution size	<i>(Info3)</i>	0.2428**	0.2170**	0.2518***	0.2286**	0.2709***	0.2363**	0.2402**	0.2156**
Founding years	<i>(Info4)</i>	0.2712**	0.3257**	0.3015**	0.3176**	0.4063***	0.4136***	0.1007	0.1186
Log likelihood		-5.7860	-5.1646	-5.3532	-5.2310	-2.1738	-2.2333	-0.4653	-0.3010
Wald value		13.5950	14.5875	15.0552	14.9943	16.0969	15.5680	13.7729	14.5400

Footnotes:

- a. *** denotes 1% significant level, ** denotes 5% significant level and * denotes 10% significant level.
- b. We define the dependent variable of discount as reference price/ declaration price in Tobit model.

VII Conclusion and Research Limitation

1. Conclusion

This study examines factors impacting whether private placements sell at a discount or premium. This study use OLS and Tobit regression models for the analysis, and considers the following five dimensions, investor identity, corporate governance, operating performance, market structure and information asymmetry. The study findings and results are listed below.

- 1) In the dimension of investor identity, the ratio of foreign ownership (*Inv2*) is higher, improving financial institution operating system, thus making it easier to sell the private placement at a premium. Moreover, if the private placement involves insiders (*Inv3*), then according to the self-interest hypothesis, those insiders are probably purchasing the shares at a discount. However, if outsiders can receive a board seat (*Inv4*), they become willing to pay a premium. The empirical results support hypotheses 1 and 2.
- 2) In the dimension of corporate governance, the higher the number of share-earnings violations (*Gov 1*) and seat-earnings violations (*Gov 2*), the stronger the tendency of a private placements to sell at a premium, the empirical result meaning hypothesis 3 is not significantly supported. Furthermore, the higher the shareholding of directors and supervisors (*Gov4*), the lower the ratio of the shares held by directors and supervisors used for collateral (*Gov 5*), representing that when a financial institution has better corporate governance structure a private placement tends to sell at a premium, as is proved by the empirical test. As for the abnormal provision for allowance for bad debts (*Gov 6*), it is significantly negative, and shows that if financial institutions provide abnormal allowances for bad debts and window-dressing in their financial statements, the private placement will tend to sell at a premium, supporting] hypotheses 4 and 5.
- 3) In the dimension of operating performance, higher ratio of capital adequacy (*Per 1*) and rate of return on assets (*Per 2*) indicates better financial institution operating performance, resulting in the private placement tending to sell at a premium, but operating performance reduces with higher cost-revenue ratio, and therefore the private placement tends to sell at a discount. Only the cost-revenue ratio of this dimension is significant and supported by empirical testing, and thus hypothesis 6 is not supported.
- 4) Using the Herfindahl-hirschman Index; (*HHI*) to measure market structure, the greater the market power of the financial institution, the stronger its negotiating ability, therefore private placements tend to sell at a premium, and the result of the Tobit regression is significant at the 5% level, consistent with hypothesis 7.
- 5) In the information asymmetry dimension, the issuing scale is lager in the case of private placements] (*Info 1*), or if the financial institution itself is larger, or if has a longer history, in which case the information asymmetry will be smaller. Investors then receive less

compensation, reducing the discount level. The empirical results are significantly negative for issuing scale, inconsistent with the hypothesis, possibly because the issuing scale is larger. In this case the equity of the original shareholders is diluted, so they may ask the investor to purchase the private placement at a premium. The issuing percentage (*Info 2*), size of the financial institution and founding years are all consistent with hypothesis 8.

To summarize, this investigation found that collateralized percentage of shares held by directors and supervisors (*Gov 5*), insiders participation (*Inv 3*), issuing percentage (*Info 2*), financial institution size (*Info 3*) and founding years (*Info 4*) are positively associated with the private placement, meaning that the discount level of the private placement increases with the percentage of previous variables, and the remaining variables display an opposite association with the private placement.

In the robust test, the macro-economic variables include general domestic product (*GDP*) and the increasing ratio of money supply (*M2*). Both of these variables have a significant negative impact, meaning that private placements are more likely to sell at a premium when the macro-economic environment is positive. When financial institutions belong to the financial holding company (*BHC*), they outperform institutions not belonging to the financial holding company, meaning business risk is reduced, and therefore private placements tend to sell at a premium; regarding the market performance, the rate of return of the weighted index of the financial shares (*Freturn*) which significantly and positively impacts the private placement, shows that when the weighted index improves, the private placement tends to sell at a discount; from the perspective of financial structure, financial institution operating performance improves with increasing rate of return of shareholder equity, and therefore private placements tend to sell at a premium.

2. Research Limitations

Regarding its limitations, this study uses the higher of the closing price on days 1, 3 and 5, before the pricing day and the simple arithmetic average of 30 days of closing price before the pricing day as the reference price, which recently announced by the competent authority. When the legislative Yuan passed the financial holding company law in 2001, numerous financial institutions joined financial holding companies, and used those financial holding companies to list in 2002. This study is unable to get the share price data, therefore simply estimates the share price based on the market to book ratio (*M/B ratio*), which may be misleading. Chang (2009) used market value of equity to book value to measure whether growth opportunities impact private placement price, and this study tried to use same way to test the impact on the financial services industry. Unfortunately the present study cannot do this owing to lacking the data required to calculate the variables, including M/B ratio and Tobin's Q. Furthermore, the samples of financial institutions are far smaller than the total numbers of listed and OTC firms, so the limited sample impacts the

empirical results]. The final consideration is that the financial industry is special, so if the samples are sufficiently large to be separated into banking, securities and insurance companies for separate examination], they can be analyzed according to their specific regulations or characteristics, thus providing a useful reference.

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