IMPACT OF INTERNATIONALIZATION ON FOREIGN FINANCING IN AN EMERGING ECONOMY –EVIDENCE FROM TAIWAN LIATED FIRMS

Meijui Sun, Department of International Business, Ming Chuan University, 250, Chung Shan N. Rd., Sec. 5, Taipei, 111, Taiwan, R.O.C. mjsun@mail.mcu.edu.tw
K.C. Chen, Department of Finance and Business Law, California State University, Fresno, 5245 N. Backer Avenue, Fresno, CA 93740, U.S.A., kchen@csufresno.edu

Abstract: This paper examines the effect of internationalization on foreign financing through Taiwanese listed firms which launched depositary receipts, European convertible bonds, seasoned equity offerings, and corporate bonds from 2001 to 2006. Three indictors of the degree of internationalization, foreign sales as a percentage of total sales (FSTS), foreign assets as a percentage of total assets (FATA), and foreign institutional investors as a percentage of total stocks (FIV) are used in this paper. We used multinomial logistic regression models and Tobit models to analyze their relationships. Furthermore, we considered the impact of the interactive effect between market timing and the degree of internationalization on foreign financing. Finally, we utilized multiple regression analysis to discuss the influence of the related variables on foreign financing amount of Taiwanese firms. The empirical results show that FSTS and FATA have positive significant influence on the decision and level of foreign financing. It indicates that when a firm has a higher percentage of foreign sales and foreign assets to their total sales and total assets, it will tend to launch foreign securities to raise new capital and the level of foreign financing will be higher. When adding the interactive terms of market timing, there are partly significant for the difference of domestic and foreign interest rates and stock market trend. The foreign exchange rate has a little impact. Finally, the dollar amount of foreign financing has a negative significant relationship to FSTS and FATA. This is because the higher the degree of internationalization the firm has, the greater debt agency costs the firm takes, so the firm will stay at lower debt level and raise less new capital.

INTRODUCTION

Modigliani and Miller (1958) theorem implies that just as the type of securities a firm issues is irrelevant, the location in which these securities are issued is also irrelevant. In reality, however, imperfectly integrated capital markets and taxes render the choice of marketplace an important consideration for global practitioners. Important issues such as how firms decide on which geographic market they should raise various types of capital in have received little attention in the international corporate finance literature.

There are a number of reasons why firms could choose to raise capital internationally rather than in their own countries. For example, Stulz (1999) argues that expanding a shareholder base internationally improves risk sharing and thereby lowers the cost of capital. Furthermore, firms may raise capital abroad and trade their stock or bonds in foreign markets if transaction costs are lower than in domestic markets. Finally, as Coffee (1999) and Reese and Weisbach (2002) point out, when firms issue stock in countries with more stringent capital market regulations and reporting standards than in their home countries, they commit to abide by these higher standards. Such a commitment can facilitate capital-raising throughout the world. While all these factors undoubtedly influence firms' decisions about where to issue securities, a comprehensive evaluation of these motivations is well beyond the scope of this paper. Instead, this paper focuses on understanding whether market timing is one of the factors that play a role in the domestic and foreign capital-raising decisions.

As an emerging market, Taiwan had about 700 publicly traded companies in March 2008, with a total market capitalization of approximately NT$22 trillion. According to the Ministry of Finance, the percentage of financing amount in the foreign capital market of Taiwan Security Exchange (TSE) and Over-the-counter (OTC) firms raised from 20.65% in 1997 to the situation of overseas financing accessing after 2002. This points out overseas financing can be an important instrument in Taiwan corporate financing.

When the firm has a higher level of internationalization, the firm will have a stronger motivation to establish a foreign foothold and expand investment activities. Foreign financing not only increases firms' awareness, but also increases access to foreign new capital. Therefore, when the firm has capital demands, it is a better way to raise funds abroad. When the firms are big and they have lower debt levels, foreign investors will have more confidence in them, and it will be easier for them to get foreign financing.

This paper is separated into two parts. First, this paper discusses the impact of degree of internationalization and foreign financing, and then discusses the relationship of variables and degree of foreign financing. Second, this paper considers the interaction of market timing and internationalization, and then discusses the relationship of variables and foreign financing and degree of foreign

financing. Finally, we use the variables for the levels of internationalization to measure the impact on the amount of financing by issuing negotiable securities.

LITERATURE REVIEW AND HYPOTHESIS

The influence of internationalization and foreign financing

In this paper, there are three indictors of the degree of internationalization: foreign sales as a percentage of total sales (FSTS), foreign assets as a percentage of total assets (FATA), and Foreign institutional investors as a percentage of total stocks (FIV).

Foreign sales as a percentage of total sales

Saudagaran (1988), Chu (1993), and Wu (2005) indicate foreign sales as a percentage of total sales is higher and the Multinational Corporations (MNCs) like to use foreign financing. Li (2002) suggests when MNCs have the higher degree of international trade dependence, and then they would like to set the foothold of global production overseas, that will enhance the demand for foreign currencies. We can say the degree of dependence on international trade is higher, and then the foreign financing would be higher. Accordingly, we propose the following hypothesis:

Hypothesis 1: When foreign sales as a percentage of total sales are higher, MNCs would be more likely to use foreign financing and the amount of foreign financing would be higher.

Foreign asset as a percentage of total assets

Burgman (1996) suggests that controlling size and industry effect, the debt ratio of MNCs will be lower and the profit will be stable. This is because of the good management abilities, avoidance of risk, and foreign exchange abilities, and higher agency costs that MNCs have. Hence, MNCs' financial leverage and profit volatility ratios are positive relationship. Financial leverage and agency cost have a negative relationship with internationalization. Firms that internationalize can lower profit volatility and enhance cross-boarder financing to avoid policy and foreign exchange risk.

Howe and Kelm (1987), Saudagaran (1988), and Biddle and Saudagaran (1991) indicate that firms' growing operating and listing in foreign country will help firms to increase the international awareness of firms and improve the marketing abilities. When the performance of firms that carry out stock options is good, foreign listing can help to carry out employee stock options. It can let the foreign subsidiaries of firms offer parent firms' stock.

Chi (1988), Foerster and Karolyi (1999), Miller (1999), Errunza and Miller (2000), and Wu and Kwok (2002) suggest that offering launch depositary receipts can enhance firm value. Beside, it also can improve firm awareness in the global capital market. It could be good at firms that use global distribution methods and increase the firms' or brands' global awareness. Accordingly, we propose the following hypothesis:

Hypothesis 2: When foreign assets as a percentage of total assets are higher, firms would be likely to use foreign financing and the amount of foreign financing would be higher.

Share percentage held by foreign institutional investors

Wu (2001) suggests that the stockholding level of foreign institutional investors could be an evidence of receipts offering of firms and the identity of perspective of firm development. Hence, the amount of stockholding of foreign institutional investors is the most important measurement of market supply power of receipts trading. It is also an important factor that affects the price premium of receipts. As the level of share percentage held by foreign institutional investors is higher, it will be accompanied by higher internationalization awareness. It will cause the demand of receipts of foreign investors to increase, and there is a positive effect discount and premium situation between depositary receipts and stocks.

Errunza and Miller (2003) suggest that firms' use of cross-listing can lower market segmentation and capital cost, and then increase the stock price and improve stock liquidity. If firms enhance use cross-listing mechanism, such as foreign equity financing,

they can increase stockholders' base to get compatriots and foreign identities. Forester (1999) points out those firms can satisfy the unique demand of different investors by financing opportunities in different markets. Firm-specific risk can be diversified by increasing investors, and it can lower capital cost and increase firm value.

This paper suggests when the share percentage held by foreign institutional investors is higher, there is a good management in this firm and it will be favored by foreign institutional investors. It also shows that when the financing process is unhindered overseas it will promote a firm's use of overseas financing when they have capital demands. Accordingly, we propose the following hypothesis:

Hypothesis 3: When the share percentage held by foreign institutional investors is higher, firms will tend to use foreign financing and the overseas financing leverage would be higher.

The relationship between foreign financing and the interaction of market timing and internationalization

The difference between domestic and foreign interest rates

Hubbard (1992) indicates that rediscount rate, consumer confidence index, and manufacturing capacity utilization have a significant relationship with firm overseas financing. Zhen (1995) also suggests that a firm considering using foreign financing will have some higher factors such as lending rate in domestic country, and there will be a selling discount for seasoned equity offerings (SEO).

Therefore, when a foreign country has lower interest rate, and there is a lower capital cost overseas, a firm using foreign financing will have an advantage getting the lower capital costs. It will increase a firm's interest in using foreign financing. Accordingly, we propose the following hypotheses:

Hypothesis 4-1: The difference between domestic and foreign interest rate will enhance the positive relationship of the degree of dependence on foreign markets with foreign financing and degree of foreign financing.

Hypothesis 4-2: The difference between domestic and foreign interest rate will enhance the positive relationship of foreign assets as a percentage of total assets with foreign financing and the degree of foreign financing.

Hypothesis 4-3: The difference between domestic and foreign interest rate will enhance the positive relationship of share percentage held by foreign institutional investors with foreign financing and the degree of foreign financing.

Foreign Exchange rate volatility

Xiao (2001) suggests that when a firm has the demand of foreign currency, no matter what the foreign currency will be refunded or invested in foreign country, and that it can be remitted back and deposit in foreign currency. It can avoid the foreign exchange risk. Tina (2001) indicates when the volatility of exchange rate is higher, it will generate a natural hedge function for a firm that operates overseas. Berkman and Bradbury (1996) also indicate that when a firm has higher foreign assets as a percentage of total assets, the percentage will be lower by using derivatives to hedge.

In the higher volatility of exchange rate situations, there exists a lot of exchange rate risk if a firm uses foreign finance and remits it back. Foreign institutional investors could trade stocks and bonds in domestic financial market. Therefore, the volatility of exchange rate is higher, and then it will lower the motivation for foreign financing. This paper suggests that when firms consider using financing, it might be a capital need for parent company or foreign subsidiaries. But when the volatility of exchange rate is higher, capital outward and inward could face higher exchange rate exposure. Hence, the firm may be more likely to use the conservative way i.e. domestic financing. Accordingly, we propose the following hypotheses:

Hypothesis 5-1: When the volatility of exchange rate is higher, it will mitigate the positive relationship of foreign sales as a percentage of total sales and foreign financing.

Hypothesis 5-2: When the volatility of exchange rate is higher, it will mitigate the positive relationship of foreign assets as a percentage of total assets and foreign financing.

Hypothesis 5-3: When the volatility of exchange rate is higher, it will mitigate the positive relationship of share percentage held by foreign investors and foreign financing.

Stock market trend

Wu and Kwok (2002) indicate when domestic market is pessimistic on issuing new stocks or if the need for stocks decline, firms can

use global market substitutes for domestic market. Chi (1998) explores the relationship of American depositary receipts (ADRs) offered by Japanese firms and Japanese economy at the same time. They find Japanese firms choose to launch ADRs when facing macroeconomics problems i.e. weak yen, recession in domestic country, and less demand, and when considering the equity globalization and global configurations.

This paper suggests when a domestic stock market is bullish, markets boom and stock goes up, investors have more confidence about the investment projects of firms. Therefore, firm would raise funds they need easily in public markets. But when stock market is bearish, markets are in a recession, and investors become conservative, firms will find it difficult to raise funds, and then turn to foreign capital markets. It can increase firm awareness overseas by offering negotiable securities and exploiting foreign market. Accordingly, we propose the following hypotheses:

Hypothesis 6-1: When a stock market is bullish, it will mitigate the positive relationship with the degree of depending on foreign markets and foreign financing.

Hypothesis 6-2: When a stock market is bullish, it will mitigate the positive relationship of foreign assets as a percentage of total assets and overseas financing.

Hypothesis 6-3: When a stock market is bullish, it will mitigate the positive relationship of the share percentage held by foreign institutional investors and foreign financing.

The influence of degree of internationalization and the amount of foreign financing

Lee and Kwok (1988) suggest the internationalization activities of MNCs will enhance debt agency cost, and then lower debt level holding. The most important reason is the debt agency costs of MNCs are significantly higher than those of domestic firms, which increase the influence of MNCs by agency cost then decrease the operating risk by diversifying overseas. This means that there is a negative relationship between internationalization and debt ratio. However, Cheng and Han (1993) suggest MNCs could lower operating risk by expanding international operations. When the operating risk is lower, MNCs can bear more financial risk by financing. This paper suggests when firms have higher degree of internationalization; firms will consider financing with negotiable foreign securities. On one hand, one has to consider the increased expected bankruptcy cost; on the other hand, lots of foreign currency positions would be hold. When the firm has currency demands to expand overseas market, they can address one part of the currency demand by themselves. Accordingly, we propose the following hypotheses:

Hypothesis 7-1: The foreign sales as a percentage of total sales are higher, but then the amount of foreign financing would be smaller by issuing negotiable securities.

Hypothesis 7-2: The foreign assets as a percentage of total assets are higher, but then the amount of foreign financing would be smaller by issuing negotiable securities.

Hypothesis 7-3: The share percentage held by foreign institutional investors is higher, but then the amount of foreign financing would be smaller by issuing negotiable securities.

DATA AND CHARACTERISTICS OF THE SAMPLE

Period and target of the sample

The data was collected from 2001 to 2006, six years. In this period, the listed firms have been issued depositary receipts (DRs), European convertible bonds (ECBs), seasoned equity offerings (SEOs), corporate bonds, and convertible bonds (CBs) in Taiwanese market.

Criterion and source of the samples

The data of negotiable securities, market timing, and financial information are selected from TSE, TWSE, Taiwan Economic Journal (TEJ) database, and the annual reports and prospectuses of sampled firms. The firms must be listed on TSE. In this period, if a firm issues the same security in the same year more than twice, we used the first one of the year in our sample. If there is some missing data in the samples, we will delete the data from our samples, and we also exclude non-listed, financial and insurance companies.

Operational definitions of the variables

Foreign financing

This paper separates foreign financing into three parts: foreign financing, domestic financing, and both foreign and domestic financing at the same time. The definition of "at the same time" means a firm's finance in domestic country and in foreign countries in the same year. This variable is measured using a dummy variable.

Degree of foreign financing

$$\text{Degree of foreign financing} = \frac{\text{the amount of foreign financing}}{\text{the amount of domestic and foreign financing}}$$

The financing amount of foreign negotiable securities

It is the issuance amount of DRs or ECBs financing from foreign countries. The issuance amount is valued in million of US dollars.

Foreign sales as a percentage of total sales (FSTS)

$$\text{FSTS} = \frac{\text{foreign sales amount} + \text{foreign total sales amount of parent company}}{\text{the total sales of parent company and subsidiaries}}$$

Foreign assets as a percentage of total assets (FATA)

$$\text{FATA} = \frac{\text{the total assets of foreign subsidiaries}}{\text{the assets of parent company, domestic subsidiaries, and foreign subsidiaries}}$$

Share percentage held by foreign institutional investors (FIV)

$$\text{FIV} = \frac{\text{the stock amount of foreign institutional investors at the end of last year}}{\text{outstanding stock}}$$

The difference between domestic and foreign interest rates (DFI)

DFI = domestic inter bank offered rate before three months - LIBOR

Foreign exchange rate volatility (FX)

FX = the standard error of exchange rate before three months

Stock market trend (SM)

This paper selects high and low point of k line chart to represent to bullish market or bearish market of "the weighted stock index of trading amount in Taiwan securities market". The stock market trend is defined by dummy variable. 0=bullish market; 1=bear market.

Firm size (Size)

$$\text{Size} = \ln(\text{book value of total assets})$$

Financial leverage (LR)

$$\text{LR} = \frac{\text{total debt}}{\text{total assets}}$$

Growth opportunity (MB)

$$\text{MB} = \frac{\text{outstanding common stock} \times \text{price}}{\text{book value of common stock}}$$

Profitability (ROA)

$$\text{ROA} = \frac{\text{net income before issuing new securities}}{\text{total assets}}$$

METHODOLOGY

This paper uses SPSS13.0, Excel, and Limdep to analyze these variables. This paper also uses Multinomial Logistic Model, Multiple Regression Analysis, and Tobit Model to analyze the data. It consists of three parts: one-way ANOVA is used to analyze the differences and separating the foreign financing samples into three groups; Multinomial Logistic Model is used to test the effect of internationalization and market timing and foreign financing; Tobit Model is used to examine the effect of internationalization and control variables and degree of foreign financing; Multiple Regression Analysis is used to analyze the effect of internationalization and the amount of foreign financing.

$$Yi = \beta 0 + \beta 1\ FSTS(\beta 2\ FATA、\beta 3\ FIV) + \beta 4 SIZE + \beta 5\ LR + \beta 6 MB + \beta 7 ROA + \varepsilon i \quad (1)$$

$$Yi = \beta 0 + \beta 1\ FSTS(\beta 2\ FATA、\beta 3\ FIV) + \beta 4 SIZE + \beta 5\ LR + \beta 6 MB + \beta 7 ROA + \beta 8\ FDI \times FSTS + \beta 9\ FX \times FSTS + \beta 10\ SM \times FSTS(\beta 11\ FDI \times FATA + \beta 12\ FX \times FATA + \beta 13\ SM \times FATA、\beta 14\ FDI \times FIV + \beta 15\ FX \times FIV + \beta 16\ SM \times FIV + \varepsilon i) \quad (2)$$

Yi=foreign financing, degree of foreign financing and amount of foreign financing, individually; β0=constant; βi=the coefficient of i independence of regression; DFI=the difference of domestic and foreign interest rate; FX=volatility of exchange rate; SM=stock market trend; SIZE=firm size; LR=financial leverage; MB=growth opportunities; ROA= profitability; FSTS=foreign sales as a percentage of total sales; FATA= foreign assets as a percentage of total assets; FIV= share percentage held by foreign investors; εi=error terms.

RESULTS AND ANALYSIS

Sample and descriptive statistics

Form 2001 to 2006, there were 603 cases of issuing securities for raising new funds in Taiwan. The largest category of securities is the CBs in Taiwan and the issuing amount is the most during six years. The 147 documents of ECB were 3 times of the foreign equity financing. The listed companies that used foreign financing and financing both in foreign and domestic country were the most in the research period. In the three types of the sample, the most of total amounts was domestic financing (65.96%), then foreign financing (29.04%), and the lowest one was both financing in domestic and foreign country (5%).

In table 1, this paper differentiated three financing places into domestic financing, foreign financing, and both financing in domestic and foreign country, when firms used financing. We used one-way ANOVA to analyze the variables if there were significant different in internationalization and characters of firms in this three groups. This provided initial information about the three groups.

[Table 1 here]

In table 1, FSTS shows that mean of only financing in domestic country is less than other two groups, foreign financing and both financing in foreign and domestic countries. In FATA, the mean of foreign financing is significant more than domestic financing. FIV shows that mean of foreign financing and both financing in foreign and domestic countries are more than only financing in domestic. Above all, firms have foreign financing which also have a higher internationalization, a bigger firm size and a lower debt ratio.

Internationalization, foreign financing and degree of foreign financing

This paper analyzes the interaction of internationalization, the variables of foreign sales as a percentage of total sales, foreign assets as a percentage of total assets, share percentage held by foreign institutional investors, firm size, financial leverage, growth opportunities and profitability and three variables of difference of domestic and foreign interest rate, exchange rate volatility and stock market trend. We use Multinomial Logistic Regression Analysis and Tobit Regression Model to analyze the relationship of these variables and foreign financing and degree of foreign financing.

Before using regression analysis, we tested the collinearity in the regression. This paper used VIF and Pearson correlation coefficient to test collinearity in the regression. The results presented in table 2, shows that the VIF of dependent variables and control variables are below 10. It also shows absolute value of dependent variables in the correlation coefficient table. Most of the correlation coefficients are lower than 0.4, beside FSTS and FATA (0.518) and FIV and SIZE (0.472). This shows the collinearity is not significant high, and the impact is not serious.

[Table 2 here]

Analysis of the Foreign Financing in Multinomial Logistic Regression

In table 3, model 1 tests the internationalization, and hypothesis 1 is supported. There are positive relationships between FSTS and foreign financing and both financing in domestic and foreign countries. When a firm has a greater dependence on foreign markets and international trade, it will increase the demand of setting production location overseas and generate higher demand of capital and foreign currency. Therefore, they would have foreign financing. This result is the same as Saudagaran (1988), Zhu (1993), and Li (2002). In addition, hypothesis 2 is supported in model 2. There is a positive relationship between foreign financing and foreign assets as a percentage of total assets. It shows the foreign operating growth of firms and enhancing international awareness can also increase marketing abilities and advantages firms to carry out employee stock options. (Howe & Kelm, 1987; Saudagaran, 1988; Biddle & Saudagaran, 1988) In model 3, the relationship of share percentage held by foreign institutional investors and foreign financing is positive.

[Table 3 here]

According to control variables, in model 1, 2, and 3, the firm size of using foreign financing is significantly larger than the firm financed in domestic country, because the large firm size usually needs more funds to maintain higher operating capital. Hence,

considering both the limited of capital market in Taiwan and the economic efficiency of publishing, when the firm's size is large they tend to use foreign financing. The outcome is the same as Saudagaran (1988) and Hubbard's (1992) findings. The relationship of debt ratio and foreign financing is negative. In other words, when the debt ratio is lower, then firms tend to use foreign financing. If the debt ratio of the firm is higher, foreign investors will face larger financial risk, higher possibility of bankruptcy, and they will doubt the firm's operating ability. When they can not raise the funds successfully by issuing foreign securities, it will destroy the firm's fame. The consequence is the same as Ke (2005). The firm has more growth opportunities and tends to use foreign financing, that is to say, the firm has higher growth potential, and then they usually engage in expanding activities, and require greater capital. Foreign financing also can reduce large stockholders that gain profit from holding the controls, which is advantageous to the growth of the firm. The finding is the same as Hamaifar, Zietz & Benkato (1994), and Doidge, Karolyi & Stulz (2003).

Multinomial Logistic Regression Analysis of the interaction of timing of market and foreign financing

The result shows in table 4, the interaction of the difference of domestic and foreign interest rate and foreign sales as a percentage of total sales, support hypothesis 4-1. The difference of domestic and foreign interest rate will improve the positive relationship of foreign sales as a percentage of total sales and foreign financing. When a firm has higher foreign sales as a percentage of total sales, it will have higher degree of dependence on foreign markets and increase the demand of setting foreign foothold. The demand for funds also increases. Hence, when the interest of domestic to foreign country is higher, it shows that the capital costs of domestic transactions are higher than in foreign countries. When a firm has large capital needs, it will be the first choice that the plan has lower financing cost (Hubbard, 1999; Zheng, 1995). Therefore, when the interest rates in the domestic country are higher than in foreign countries, it will improve the inclination to engage in foreign financing.

[Table 4 here]

The hypothesis of the interaction of difference of domestic and foreign interest rates and foreign assets, hypothesis 4-2, is supported. The difference of domestic and foreign interest will improve the positive relationship of foreign assets as a percentage of total assets and foreign financing. When the firm has capital demands, the capital cost of foreign financing will be lower and foreign financing can enhance firm's foreign awareness. The interaction of the difference between domestic and foreign interest rates and the share percentage held by foreign institutional investors shows the direction is the same as this paper expected but not significant. Therefore, hypothesis 4-3 is not supported.

Regarding the interaction of exchange volatility and foreign sales as a percentage of total sales, when exchange volatility is higher, it will mitigate financing for the firm with higher foreign sales as a percentage of total sales, finance both in domestic country and foreign country at the same time. Only finance in foreign country is the same as the inference of hypothesis 5-1 but it is not significant. Hypothesis 5-1 is partially supported. In another words, when exchange volatility is higher, it will mitigate the positive relationship of foreign sales as a percentage of total sales and the firm financing both in domestic and foreign country. Therefore, it can account for what Xiao (2001) suggests in term of firms with foreign currency demands, whether they are going to refund or invest overseas. It can be backed up directly this way and does not settle exchange rates in New Taiwan dollars. The exchange risk could be removed, but this paper suggests when firms consider using financing, it shows the parent company or foreign subsidiaries most likely have capital needs. When exchange volatility is higher, it will impose higher exchange risks whether the capital flows in or out of the country. Hence, the firm may be using a conservative financing way, which is domestic financing.

Stock market trend

Regarding the relationship of the stock market trends and foreign sales as a percentage of total sales, hypothesis 6-1 is supported. When the domestic stock market is a bull market, it will mitigate the relationship of foreign sales as a percentage of total sales and foreign financing. Because when the stock market is a bull market, it is easy for firms to get financing in domestic countries. If a domestic stock market is better, large capital needs can be met when expanding investment activities in domestic or foreign countries, and it may be considered financing in domestic rather than foreign country. The findings are the same as Wu and Kwok (2002) and Chi (1998). When some country face bad macroeconomics and demand is lower, it will cause firms to find another capital market, whereas if the country has good economics, investors have higher motivation to invest and be willing to invest firm's investment

activates. The firm can finance easily.

Regarding the interaction of stock market trend and foreign assets as a percentage of total assets, when the stock market is better and has higher foreign assets as a percentage of total assets, it will use less financing both in domestic and foreign countries and only financing in foreign country is negative and not significant. It is partially supported in 6-3. When the economics is better in a domestic country, for financing both in domestic and foreign countries, a firm can finance inside and outside, but it can have large funds inside at the time. It might be lower foreign financing, but it also can lower the publishing cost. In model 3, the direction of interaction of stock market trend and share percentage held by foreign institutional investors is the same as expected, but it is not significant.

Tobit Regression Analysis in internationalization and foreign financing

The dependent variable in this paper is the proportion of foreign financing for firms which issuing five different securities over the last six years. The outcome of Tobit Regression is shown in table 5.

[Table 5 here]

Table 5 model 1 shows that the relationship of foreign financing and foreign sales as a percentage of total sales is positive. As a result, hypothesis 1 is supported. The reason is that firms with a higher foreign sales as a percentage of total sales will have the demand of setting foreign foothold, purchasing mechanism, and setting up factories than the firm that has only one nationality. They need foreign currency; hence, foreign financing is higher. In model 2, when foreign assets as a percentage of total assets are higher, foreign financing is also higher. Hypothesis 2 is supported. On one hand, firms will improve international firm awareness by foreign financing. On the other hand, when firm has higher foreign assets and it is well-known abroad, foreign investors will be not unfamiliar with the firm and will receive them, and they could finance successfully. Similarly, in model 3, the share percentage held by foreign institutional investors is not significant. This paper infers that foreign institutional investors have been buying and selling stocks in Taiwan, and firms might consider that foreign institutional investors already invest a great amount in Taiwan, and therefore they don't need to use foreign financing. In this case, the result is not significant.

In terms of the control variables, the findings show the relationship of firm size to growth opportunities and foreign financing is significant and positive in model 1, 2, and 3. These findings are the same as Saudagaran (1988) and Li (2002). They point out when the firm size is larger, it will generate larger capital demands in the firm than when the firm size is small. When the capital market in the domestic country is limited, whether in debt or equity financing, larger scale financing can also generate capital a crowding-out effect. The firm which is large has better ability to attract foreign investors, and therefore, they will turn to foreign markets to find sources of capital. Doidge, Karolyi & Stulz (2003) suggest that foreign financing can lower large stockholders ability to control private gains, and it can enhance a firm's financing ability which will be advantageous for the firm's growth opportunities. The relationship of debt ratio and foreign financing are significant negative. Barton & Gordon (1988) and Homaifar, Zietz & Benkato (1994) suggest the debt ratio and foreign financing have a negative relationship, and they consider that when the debt ratio is higher, there are more obstacles when they do foreign financing. This inference shows the firm has lower debt ratio, and this is because foreign investors believe in firms that have higher foreign financing. Furthermore, this paper follows foreign financing model to put market timing in it. In this part, this paper continues to use Tobit Regression Analysis and to discuss the interaction effect of market timing and internationalization and foreign financing, as seen in table 6.

[Table 6 here]

Table 6 shows the outcome is similar to table 4, which discusses the interaction of market timing and foreign financing by adding market timing. In model 1, the difference of domestic and foreign interest rate is higher. It will enhance the relationship of foreign sales as a percentage of total sales and foreign financing. When the stock market is bullish, it will mitigate the positive relationship of foreign assets as a percentage of total assets and foreign financing. But the interaction of exchange rate volatility and foreign sales as a percentage of total sales is not significant with this paper as expected. In model 2, when the stock market is bullish, it will mitigate the positive relationship of foreign assets as a percentage of total assets and foreign financing. The effect of the difference between

domestic and foreign interest rates and exchange rate volatility is not significant. This finding is almost the same as the model that added the interaction and foreign financing. It shows the robustness of the results.

The relationship of internationalization and foreign financing amount

This part used Multiple Regression Analysis to discuss the effect of the variables of internationalization and the amount of foreign financing. The empirical analysis is shown in Table 7.

[Table 7 here]

In the case of internationalization, model 1 and model 2 show that hypotheses 7-1 and 7-2 are supported. It means the relationships between foreign sales as a percentage of total sales, foreign assets as a percentage of total assets and foreign financing size are both significantly negative. It shows that when the foreign sales as a percentage of total sales and foreign assets as a percentage of total assets of the firm are higher, foreign financing size is smaller. Therefore, MNCs may face more political risk, imperfection of national markets, exchange rate risks and complexity of national operating than single nationality firms. Therefore, MNCs have larger debt agency costs than single nationality firms. When the internationalization of the firms is higher, it will enhance debt agency cost of the firms and debt level they hold will be lower. The result is the same as the findings of Lee and Kwok (1988). On the other hand, when the internationalization of the firms is higher, because they have large foreign sales and foreign assets, they have greater foreign currency positions. When they need more capital to expand in foreign markets, they can access the capital they need, or even help back up parent companies. However, firms with lower level of internationalization have lower foreign sales and foreign assets. It shows the firm's ability is not good enough. When they want to expand to foreign markets and need capital, they will enhance their financing amounts. In model 3, the relationship of share percentage held by foreign institutional investors and the foreign financing size is positive, and it is the opposite with the hypothesis of this paper, but it is not significant.

The control variables in model 1, 2, and 3 show the relationship of firm size and the amount of foreign financing is positive. In other words, when firm size is large, the amount of financing is higher. However, when the firm size is large, and information transparency is high, investors have more confidence and the capital needs are also increased. Debt ratio to foreign financing amount is significantly negative. This shows that the debt ratio is lower, and then financing amount will be higher. The firm will face lower financial risk and has more flexibility to access large financing amount. Therefore, the issuing size will be bigger. The findings of this empirical analysis of firm size and debt ratio to foreign financing size are the same as Zeng and Zhang (2003). The profitability is significantly positive and related with the foreign financing amount. When the profitability is higher, the firm will have more financing capital to engage the large investments and expanding activities to earn a higher profit.

CONCLUSIONS

Due to the increasing degree of depending on foreign markets and more frequent international trades, firms generate more demand for capital and foreign currencies, when foreign sales as a percentage of total sales is higher. Firms will be possible to do more foreign financing and have a higher degree of foreign financing. When foreign assets are huge, it shows that foreign operations of firms are growing. Listing abroad can increase firms' international awareness. Furthermore, it can improve marketing abilities, and also practice giving employees' stock options. Therefore, firms will tend to use foreign financing.

When the foreign sales as a percentage of total sales are higher, the difference between domestic and foreign interest rates is higher. That means the capital costs in foreign countries are lower. When firms make the financing decision, they will be more likely to using foreign financing. When the economy is booming in domestic country, investors have more aspirations to invest, and have more confidence in investment projects. Firm can raise funds more easily in domestic countries, and it lowers their motivation for foreign financing.

When the degree of internationalization is higher, a firm will have a large debt agency cost. Hence, the firm will issue the smaller amount of foreign securities. Because they have more foreign sales and foreign assets, they will have huge foreign currency positions. When the firm has capital demands to expand to foreign markets, it will provide itself the funds, even help a parent company that needs capital. Whereas, firms with lower degree of internationalization will show the less ability to raise the new capital aboard.

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[Tables are available upon request.]