

A Study for the Relationships of the Banking Loans, the Ratio of R&D Expenditure Ratio and the Performance of Debt Enterprises

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ABSTRACT

This study researches the relationships among the banking banks, the ratio of bank loans, the characteristics of debt enterprises, performance of debt enterprises, and the R&D expenditure ratio of debt enterprises from the perspectives of corporate governance and information asymmetry. Many public listed companies have abilities to borrow capital from direct financial market with bonds, but they still lend capitals from banks with private debts. The enterprises with higher R&D ratio may have higher growth potential, which may keep good relation with their banking banks for communicating the growing messages to outside investors and reducing the problem of information asymmetry. The banking banks may monitor the operation of enterprises will influence the performance of borrowers.

The research finds the debt enterprises with higher bank loan ratio have higher market performance and lower financial performance. The higher bank loan ratio may transfer the good operating information of the debt firms to the market investors and to reduce the information asymmetric problems. The result also shows the R&D expenditures ratio and debt ratio all have significantly negative impact on financial and market performance of the debt enterprises. The information asymmetric problems do exist for the outside investors.

Keywords: R&D ratio, Bank loans, Performance of debt enterprise, Information asymmetry

INTRODUCTION

The reasons for enterprises lending funds from their banking banks may be to communicate the inner messages of enterprises to outside investors and to avoid the investors underestimated the value of enterprises. If the banking banks have high ratio of creditor's rights, the banking banks monitor the operating of debt enterprises to protect their rights. The supervise stress of the banking banks could enhance the performance of debt enterprises. The prior literatures focused on the characteristic of bank loans (Fama, 1985; James, 1987). They argued that the debt enterprises could obtain additional benefits from the banking relationships except borrowing the funds. Smith and Warner (1979) and Diamond (1991) argued, under the situation of information asymmetric, the banking-debt firms could reduce the degree of enterprise value underestimating by outside investor than the public debt enterprises.

Several researchers (McConnell and Muscarella, 1985; Chan, Martina and Kensinger, 1990) verified that the enterprise increased their investment amounts will enhance the value of firm. It means the more expenditure of R&D and advertisement representing the higher potential of further growth abilities, which represents the better performance of the firm. The high growth firms may have valuable inner information that impacting seriously information asymmetric. When the firms have extended banking relationships with the banking banks that could assist the debt firms to obtain lower interest rate

of bank loans (Athavale and Edmister, 1999), enhance the volume of credit line (Petersen and Rajan, 1994), and communicate the accredited by the certification function of the with good reputation banking banks (Sudip, Mai and Ajay, 1999). So the firms prefer to use private debt by the banking banks when the firms' value were underestimated underlying the situation of information asymmetric. Several researchers (Matthew, Mark and Jon, 2003) suggested the banking banks could get the inner information of those debt firms to evaluate the credit line and others. The banking banks examine and evaluate the inner information of firms before lend out funds. The banking banks supervise the operating of debt firms to protect their rights, which will also reduce the moral risk of the managerial.

The objectives of this research are to explore the associations among banking relationships, performance of enterprises, the R&D ratio, and effects of communicating inner messages of debt enterprises from the perspectives of corporate governance and communicating information. The prior banking relations researches mainly focused on the topics of credit line, loan rate, the guarantee, and the moral hazard or adverse selection of banking banks. There has little researches looked into the banking relations from the perspectives of corporate governance and of communicating inner messages to outside investors. The rest of this paper is organized as follows. Section 2 provides the relative literatures review. In the next section, we describe the methodology and research samples of this research. Section 4 presents the research results. Section 5 is conclusion the findings of this study.

LITERATURE REVIEW

The academic literatures of corporate governance have examined the efficiency of alternative ownership structures for the board of directors. While, there has little evidence of the governance function of the banking banks. Many researchers (Fama, 1985; Sharpe, 1990; Rajan, 1992; Diamond, 1991) suggested that the banking relationships are very important and valuable for the debt enterprises to reducing the impact of information asymmetric and enhance the value of firms. Pugh and Jahera (1990) found the highly information asymmetric exist in the small size firms, which usually caused the market to ignore or underestimate the value of small firms. The small firms may buy back themselves stocks to convey the information of the value being underestimated. Denis and Mihov (2002) found the firms with high information asymmetric preferred to obtain funds by the private debts. But Weinstein and Yafeh (1998) proposed the banking banks would not reduce the relative fee and the interest rate for their closely clients because of they are risk sharing for each. The banking banks must bear the loss and provide other capital when the debt firms fail or go bankruptcy. The banking banks transfer themselves loss risks and capital costs to the debt firms by enhancing the interest rate of lending. The banking banks have better monitoring efficiency than the public bonds investors when the banks lend out funds to the debt firms by private debts (Diamond, 1984; Fama, 1985; Sudha, Paul and Venkat, 1999).

Denis and Mihov (2002) empirically found the firms with higher information asymmetric problems preferred the private debts, as well as the firms with lower information asymmetric problems preferred the public debts. Conversely, the debt firms preferred the public debt when the information asymmetric level was low (Bhattacharya and Chiesa, 1995; Yosha, 1995). Sudha et al. (1999) argued the debt enterprises borrowed capital by private debts to avoid the adverse selection, when they have the positive information for the further growth of themselves. Sharpe (1990) proposed that the loan banks consequence obtained the inner information of debt firms, and then the information monopolies occurred. Hadlock and James (1997) proposed the debt firms with prefer inner information selected higher ration bank loans to disclosure their characteristics, when the loan banks could realize the information of debt

firms than the creditors of public debts. The debt firm selects single one contact bank to avoid the inner information leak out (Padilla and Pagano, 1997). Rheinbaben and Ruckes (1998) argued the leak out of inner information has no concerns with the numbers of banking banks. Diamond (1984) proposed the single banking bank was a best way to transfer capital between the outside investors and the debt firms when there have information asymmetric problems. The banking banks could efficiently reduce the information asymmetric by its professional evaluation. Thadden (1992) suggested the contact bank has a monopoly of the inner information of the debt firm when the firm selected single contact bank, as well as there has the information lock-in problem. The contact bank may use this advantage to exploit the debt firm, such as enhancing the interest rate and bargaining strict contact that caused the holdup cost.

Bhattacharya and Chiesa (1995) argued the banking banks keep debt firms secret from the outside investors and supervise the operating of debt firms, which enhance the inner R&D and growth of debt firms. The stocks price have positive correlation with the announcement of the firms in America obtained capital from the banking banks released the supervise value of banking banks (James, 1987; Lummer and McConnell, 1989). The financial institutions, such as banks, hold the stocks of firms were seemed as the efficiency way to reduce the agency problem and increase the usage of capital. (Prowse, 1992; Ang, Cole and Lin, 2000). Merton (1992) suggested there has a positive relation between the reputation of banking banks and the verifying credit of banking banks if the banking relationships were substantial. Chemmanur and Fulghieri (1994) suggested that it convey positive information to outside investors when the firms obtained debt capital from the better reputation banking banks than others. Sharpe (1990) argued the reputation of banks reduce the holdup cost for debt enterprises. That caused the enterprises preferred to borrow funds from the reputation banks. Harris and Raviv (1991) argued that the high financial leverage caused the agency problem between the shareholders and debtors, which influenced the performance of debt firms. Brander and Lewis (1986) proposed that the enterprises selected the debt capital to express their aggressive strategies.

RESEARCH SAMPLE AND METHOD

This study interests to find the connection between the banking relationships and the performance of the debt enterprises. Three replace variables for the banking relationships are the numbers of banking banks, the bank loan ratio, and the weighted reputation of banking banks. There are four variables to replace the performance of enterprise, including earnings per share (EPS), return rate of assets (ROA), return rate of stock's price (ROSP), and the Tobin's Q (TsQ). Besides, it also takes five control variables to control the inherent factors. They are the ages of the enterprise, the scale of the enterprise, the debt ratio of the enterprise, the R&D expenditure rate, and the depreciation expense rate.

Data Collection

This study collects the financial statement data of total 463 firms (excluding the financial industry) that listed on Taiwan Stock Exchange Corporation (TSEC) and GreTai Securities Market of Taiwan (OCT) during the period of year 2002 to 2004. The data resources include Taiwan Economic Journal (TEJ), Taiwan Stock Exchange Corporation, GreTai Securities Market of Taiwan (OCT), and Financial Supervisory Commission.

Research Variables

The dependent variables are the performance of the debt firms. The EPS and ROA are the two financial performance measures; we also use the ROSP and TsQ to be the two market performance measures of the debt enterprises. Their definitions describe as follows.

- EPS: The earnings per share are the profit ability of the shareholder. Total earnings divided by the number of shares outstanding. It measures the profit for a common share in an accounting period.
- ROA: The return rate of assets is the profit ability of the investing assets. It measures the performance of the accounting statement for a firm. We use the earnings before tax and interests to be the numerator for excluding the impact of tax and interests expense.
- ROSP: The return rate of stock price is the market value measure. It measures the operating and whole performance of the firm by the view of the investors. The components of the following equation are described as follows. P_t is the closing price of t term; P_{t-1} is the closing price of t-1 term; α is the ex-right subscription rate of t term; β is the gratis share allotment on rate of t term; C is the ex-right buy price of t term; and D is the received cash dividends of t term.
- TsQ: Tobin's Q ratio is the whole value measure of the firm. It evaluates the value of intangible assets, growth opportunities, and other valuable characteristics of the firm. Many researchers (McConnell and Servaes, 1990; Morck, Shleifer and Vishny, 1988) used Tobin's Q to represent the value of firms in their researches. Some researchers (Lang, Stulz and Watts, 1989; Strulz, 1994) also used Tobin's Q to replace the managerial performance and investing opportunity in their researches. The merits of Tobin's Q are it can be use to evaluate the value of intangible assets, like as high quality management, goodwill, and growth opportunity. In this study, we use the approximate value method (Chung and Pruitt, 1994) to replace the complex computing of Tobin's Q, owing to it is difficult to obtain the data for evaluating the value of Tobin's Q.

The independent variables include the numbers of banking banks (*BANK*), the bank loans ratio (*Bdebt*), the weighted reputation of the banking banks (*Breput*), ages of the enterprise, scale of the enterprise, debt ratio of the enterprise, and the expenditure rate of research and development. The definitions of variables are described as follows.

- The numbers of banking banks (*BANK*): that were the numbers of the loan banks at the end of each year during 2002-2004. The banking banks were defined as the local or foreign banks that have lent out capital to the debt enterprises.
- The bank loans ratio (*Bdebt*): that measured the percentage of the total bank loans against the total liabilities.
- Reputation of contact bank (*Breput*): There were totally 82 banks were included in the data at the end of 2004, yet there were 100 banks included in our research period. We use the net value ranking of banks to replace the reputation ranking of banks. Additionally, because many foreign banks were the branch companies and had less net value, which were not included in the ranking list, were ranked as 83 in this study. Several local banks that had taken by government because of poor performance were ranked as 84 in this research. The total standing includes 84. The weighted reputation of the contact bank was used to measure the reputation of banking banks, because that one debt firms maybe borrowed capital form several banking banks.
- Life time of the enterprise: The life time measures the ages from the firm bring into existence to the point of this study. The enterprise with shorter life time usually has lower fame, as well as the investors have little realization and attention about its operation.

- Scale of the enterprise: The scale of the firm represents the market ability and efficiency of the firm. The larger scale or scale enterprise will get the attention and concern from the authority in the practical situation. The large scale enterprises were asked to disclose the relevant information of their operations, as well as their operations was supervised by the authority. So the larger scale firms have better operating performance, and the larger scale firms usually have higher fame and lower asymmetric information.
- The debt ratio of the enterprise: According to the pecking order theory, the higher debt ratio caused the lower profit ratio for the debt firms. The high debt ratio reduced the value of the debt firms, raised the costs of debt capital, and enhanced the risk of bankruptcy. The degree of the debt ratio of enterprise affects its performance depends on the result of the empirical examines. The debt ratio is measured as follow.
- The future growth of the enterprise: We use the gross operation revenues as denominator and the R&D expenditure as the numerator to measure the R&D expenditure ratio.

Due to the operations of the enterprises are continued, as well as the prior operating performance of enterprise may have impact on the performance of this term. We take the t-1 term performance of enterprise as one control variable to eliminate the influence from the t-1 term when the multi-regression analysis has used.

Research Hypotheses

The higher bank loan ratio causes the banking banks to pay highly attention to the performance of debt enterprises to assure their rights. These banking banks may throw themselves into interfering and supervising the business operating decisions, and that may achieve the function of inner corporate governance. Due to the banking banks are able to obtain more inner and exhaustive information of debt enterprises than those public bonds holders. By the supervising of those banking banks, the managerial moral risk for asset substitution and underinvestment are eliminated and the operating performance enhance.

Hypothesis 1: The debt enterprises with higher bank loans ratio may have better market performance.

It is instinctively considers the high reputation banks prudently choose their debt clients to maintain their good reputation. The banking banks with good reputation have abilities and high motion to supervise operating of the debt enterprises.

Hypothesis 2: The debt enterprises with higher reputation of banking banks may have better performance.

It is more difficult and expensive for an enterprise to get funds from public debts than the private debts. Because of the highly information asymmetry, the demands of funds may highly rely on the banking banks for the young and small enterprises.

Hypothesis 3: The enterprises with shorter life time and smaller scale may have higher bank loans ratio.

The high growth enterprises may have high R&D expenditure ratio and seriously information asymmetry problems that cause firms' value are under-evaluated by the market investors. High further growth firms can reduce the information asymmetry situation and convey the further growth messages to the outside investors by lending funds from the banking banks.

Hypothesis 4: The further growth enterprises with high R&D ratio may have high bank loan ratio.

Performance Measure

The study examines the association with banking relationships and the performance of debt enterprises. We use the performance of debt enterprises, including earnings per share (EPS) and return

rate of assets (ROA) of financial statement performance and return of stock's price (ROSP) and Tobin's Q (TsQ) of market value performance, to be the dependent variables. Three independent variables used, including banking banks (BANK), the bank loans ratio (Bdebt), and the weighted reputation of the contact bank (Breput), the life time of the firm (HIS), the scale for the firm (SIZE), the debt ratio of the firm (DEBT), and the expenditures ratio of research and development (R&D). The research multi-regression models and the definitions of the variables show as follows.

$$EPS_{it} = b_0 + b_1 BANK_{it} + b_2 Bdebt_{it} + b_3 Breput_{it} + b_4 EPS_{it-1} + b_5 HIS_{it} + b_6 SIZE_{it} + b_7 DEBT_{it} + b_8 R \& D_{it} + \varepsilon_{it} \dots (1)$$

$$ROA_{it} = b_0 + b_1 BANK_{it} + b_2 Bdebt_{it} + b_3 Breput_{it} + b_4 ROA_{it-1} + b_5 HIS_{it} + b_6 SIZE_{it} + b_7 DEBT_{it} + b_8 R \& D_{it} + \varepsilon_{it} \dots (2)$$

$$ROSP_{it} = b_0 + b_1 BANK_{it} + b_2 Bdebt_{it} + b_3 Breput_{it} + b_4 ROSP_{it-1} + b_5 HIS_{it} + b_6 SIZE_{it} + b_7 DEBT_{it} + b_8 R \& D_{it} + \varepsilon_{it} \dots (3)$$

$$TsQ_{it} = b_0 + b_1 BANK_{it} + b_2 Bdebt_{it} + b_3 Breput_{it} + b_4 TsQ_{it-1} + b_5 HIS_{it} + b_6 SIZE_{it} + b_7 DEBT_{it} + b_8 R \& D_{it} + \varepsilon_{it} \dots (4)$$

Where EPS_{it} is earnings per share for the i^{th} enterprise on t term; EPS_{it-1} is earnings per share for the i^{th} enterprise on $t-1$ term; ROA_{it} is return rate of assets for the i^{th} enterprise on t term; ROA_{it-1} is return rate of assets for the i^{th} enterprise on $t-1$ term; $ROSP_{it}$ is return rate of stock price for the i^{th} enterprise on t term; $ROSP_{it-1}$ is return rate of stock price for the i^{th} enterprise on $t-1$ term; TsQ_{it} is Tobin's Q for the i^{th} enterprise on t term; TsQ_{it-1} is Tobin's Q for the i^{th} enterprise on $t-1$ term. While, $BANK_{it}$ is the numbers of banking banks for the i^{th} enterprise on t term; $Bdebt_{it}$ is the bank loans ratio for the i^{th} enterprise on t term; $Breput_{it}$ is the weighted reputation of the banking banks for the i^{th} enterprise on t term; HIS_{it} is the life time of the i^{th} enterprise on t term; $SIZE_{it}$ is the scale for the i^{th} enterprise on t term; $DEBT_{it}$ is the debt ratio of the i^{th} enterprise on t term; $R \& D_{it}$ is the expenditure rate for research and development of the i^{th} enterprise on t term; ε_{it} is the error of the i^{th} enterprise on t term.

RESEARCH RESULTS

Corrective Coefficient Analysis

Table 1 shows the correlative coefficients of all the research variables. The correlative coefficient shows EPS and ROA have high correction level. The coefficient of ROSP and TsQ is 0.157, and the corrective level is lower because of the different evaluation base. ROSP is used to measure the return rate of stocks' investment, and the TsQ is used to measure the market value of the enterprises. We find the coefficient of ROSP and EPS and of ROSP and ROA are 0.329 and 0.336. They are higher than the coefficient of ROSP and TsQ, 0.157. The market investors maybe use the data of financial statement to evaluate the stocks price of the enterprises. Moreover, the coefficients of the bank loans ratio and EPS and of the bank loans ratio and ROA are -0.296 and -0.264. The coefficients of the debt ratio and EPS and of the debt ratio and ROA are -0.342 and -0.348. It reveals the enterprise with high bank loans ratio or with high debt ratio may have poor financial performance on EPS and ROA. The correlative coefficient of the numbers of banking banks and EPS and ROA are small and significantly negative. It shows the more banking banks may bring the less financial performance. But, the coefficient of the numbers of banking banks and ROSP and TsQ are small and significantly positive which shows the more banking banks may bring the better market value performance.

Table 1: Correlative coefficients of the variable

	<i>EPS</i>	<i>ROA</i>	<i>ROSP</i>	<i>TsQ</i>	<i>BANK</i>	<i>Bdebt</i>	<i>Breput</i>	<i>HIS</i>	<i>SIZE</i>	<i>DEBT</i>	<i>R & D</i>
<i>EPS</i>	1	.952** *	.329** *	.199** *	-.077** *	-.296** *	-.025	.040	.257***	-.342** *	.052
<i>ROA</i>		1	.336** *	.228** *	-.066** *	-.264** *	-.036	.042	.250***	-.348** *	.067**
<i>ROSP</i>			1	.157** *	.072***	.033	-.055**	.153** *	.108***	-.095** *	-.232** *
<i>TsQ</i>				1	.055**	.040	-.028	-.027	.152***	-.079** *	.108***
<i>BANK</i>					1	.390***	-.309** *	.167** *	.396***	.323***	-.157** *
<i>Bdebt</i>						1	-.071** *	-.008	-.143** *	.194***	-.225** *
<i>Breput</i>							1	-.057* *	-.100** *	-.124** *	.075***
<i>HIS</i>								1	.157***	-.064**	-.215** *
<i>SIZE</i>									1	.046	-.022
<i>DEBT</i>										1	-.236** *
<i>R & D</i>											1

*, **, and *** indicate significant at .1, .05 and .01 levels, respectively

The correlative coefficient of the R&D ratio and ROSP is significantly negative -0.232, which shows the enterprises with high R&D ratio may have lower ROSP. Yet the correlative coefficient of the R&D ratio and TsQ is significantly positive 0.108, which shows the enterprises with high R&D ratio may have higher market value (or Tobin's Q).

Table 2: The data analysis of variables

	<i>EPS</i>	<i>ROA</i>	<i>ROSP</i>	<i>TsQ</i>	<i>BANK</i>	<i>Bdebt</i>	<i>Breput</i>	<i>HIS</i>	<i>SIZE</i>	<i>DEBT</i>	<i>R & D</i>
Mean	.4122	1.5437	20.5072	.5540	8.17	40.9804	69.1461	37.81	6.4843	47.1516	1.6439
Median	.3511	2.4621	9.9300	.5095	7.00	41.4514	70.5980	37.00	6.4477	45.8550	.4993
Std. Deviation	2.2221	9.5676	63.2413	.3774	6.001	21.3077	8.3056	11.490	.5736	15.7404	4.0893
Minimum	-11.5402	-76.8804	-85.8600	-.2819	1	.1018	.3442	15	4.0447	4.4634	.0000
Maximum	11.2790	40.0829	639.1300	6.7403	37	96.8168	83.0000	70	8.5111	96.2105	79.2494
Percentiles 25	-.6903	-1.8227	-15.0550	.3451	4.00	25.2877	66.5858	28.00	6.1156	36.4256	.0000
Percentiles 50	.3511	2.4621	9.9300	.5095	7.00	41.4514	70.5980	37.00	6.4477	45.8550	.4993
Percentiles 75	1.4039	6.5871	41.5350	.7025	11.00	56.6323	73.8629	46.00	6.8318	56.5365	2.1592

We further divide the samples of each variable into 4 clusters by the quartiles for executing ANOVA analysis and the descriptive analysis of the variables are showed in table 2. The 1th cluster is the lowest percentiles 25, the 2th cluster is larger than percentiles 25 to percentiles 50, the 3th cluster is larger than percentiles 50 to percentiles 75, and the 4th cluster is larger than percentiles 75 to percentiles 100.

Multiregression Analysis

We use the EPS, ROA, ROSP, and Tobin's Q to be the performance variables and to run the multiregression analysis with the enter method. The p-value of the four regression formulation are significant but with low adjusted R^2 . It means all the independent variables have significantly impact on the performance variables with very low explanation for the performance measures. Especially, the adjusted R^2 of performance measure variable ROSP is 0.056. The control variables, including EPS_{t-1} , ROA_{t-1} , $ROSP_{t-1}$ and TSQ_{t-1} , do have significantly impact on the performance variables on t term. It is interesting that the coefficient of $ROSP_{t-1}$ is -0.124, and it means that has negatively impact on the $ROSP_t$. The numbers of banking banks and the reputation of banking banks have no significantly influence on the financial and market performance of the enterprises. The numbers of banking banks has no significantly impact on the market performance of the debt enterprises. For the respect of enterprises' characteristics, the life time has slightly positive impact on the market performance variables. The scale of enterprises has significantly positive impact on the financial and market performance variables. And the debt ratio of enterprises and the R&D expenditure ratio have significantly negative impact on those financial and market performance variables. That means the enterprises with longer life time may have better market performance, and the enterprises with higher bank loans ratio have significantly negative impact on financial and market performance. The debt ratio and the R&D ratio have significantly negative impact on the performance variables.

ANOVA Analysis

The results of ANOVA analysis show in table 3. The results reveal the numbers of banking banks, the bank loans ratio, the life time, the scale, the debt ratio, and the R&D ratio (further growth of enterprises) have very significantly impact on the financial performance and market performance of the enterprises, except the reputation of banking banks. The reputation of banking banks has slightly positive impact on Tobin's Q.

Table 3: ANOVA results of the four performance variables

	<i>EPS</i>	<i>ROA</i>	<i>ROSP</i>	<i>TsQ</i>
<i>BANK</i>	4.816***	10.503***	3.056**	2.735**
<i>Bdebt</i>	45.867***	36.517***	7.808***	2.123*
<i>Breput</i>	1.119	1.872	0.134	2.115*
<i>HIS</i>	7.132***	8.826***	23.857***	0.981
<i>SIZE</i>	33.219***	33.312***	6.84***	13.015***
<i>DEBT</i>	73.909***	64.008***	7.918***	4.523***
<i>R & D</i>	6.108***	11.610***	29.290***	12.606***

*, **, and *** indicate significant at .1, .05 and .01 levels, respectively.

We further examine the Scheffe test to find the difference of the four clusters. The results of Scheffe tests show in table 4. We find the clusters with minor banking banks have significantly better financial performance and have slightly poor market performance. The clusters with lower bank loans ratio have better financial performance. On the market performance of ROSP, the results are interesting; the 1th cluster with lowest bank loans ratio has better market performance than others; but the 3th and 4th clusters with higher and highest bank loans ratio also have better market performance on ROSP. This result shows the enterprises with lowest and highest bank loans ratio may have better performance of their stock price because of the lower interest expenses or the credit of banking banks.

Table 4: Scheffe Test for the performance variables of the four clusters

variable		EPS			ROA			ROSP			TsQ		
	cluster	Q2	Q3	Q4	Q2	Q3	Q4	Q2	Q3	Q4	Q2	Q3	Q4
<i>BANK</i>	Q1	-.09	.02	.22*	-.27**	-.14	.18	.03	-.07	-.21	.03	-.19	-.11
	Q2		.12	.31***		.13	.45***		-.10	-.23*		-.21*	-.14
	Q3			.20			.32***			-.13			.07
<i>Bdebt</i>	Q1	.20	.47***	.90***	.13	.38***	.79***	.24**	.21*	-.10	-.08	-.21*	-.09
	Q2		.27***	.70***		.25**	.66***		-.03	-.34***		-.13	-.01
	Q3			.43***			.41***			-.31***			012

<i>Breput</i>	Q1	.08	.15	.06	.10	.20	.09	.00	.04	.17	-.15	.02	.03
	Q2		0.7	-.02		.10	-.01		.04	.17		.18	.19
	Q3			-.09			-.11			.14			.01
<i>HIS</i>	Q1	-.33***	-.31***	-.14	-.42***	-.27**	-.19	-.58***	-.60***	-.50***	-.03	-.04	.09
	Q2		.02	.20		.15	.23*		-.02	.08		-.01	.12
	Q3			.17			.08			.10			.13
<i>SIZE</i>	Q1	-.31***	-.47***	-.80***	-.46***	-.57***	-.80***	-.11	-.33***	-.29***	.05	-.23*	-.41***
	Q2		-.16	-.49***		-.11	-.34***		-.22*	-.18		-.28***	-.46***
	Q3			-.33***			-.23*			.04			-.18
<i>DEBT</i>	Q1	.64***	1.02***	1.02***	.41***	.73***	1.05***	.30***	.38***	.29***	.20	.11	.30***
	Q2		.37***	.37***		.33***	.64***		.08	-.01		-.10	.09
	Q3			.00			.32***			-.09			.19
<i>R & D</i>	Q1	.26***	.05	-.12	.36***	.12	-.16	.50***	.59***	.80***	-.51***	-.32***	-.45***
	Q2		-.22	-.38***		-.24*	-.52***		.09	.31***		.19	.05
	Q3			-.16			-.28**			.22			-.14

*, **, and *** indicate significant at .1, .05 and .01 levels, respectively

On the respect of characteristics, the enterprises with shorter life time and smaller scale do have significantly negative impact on their financial and market performance. On the respect of debt ratio, we find the enterprises with lower debt ratio have better financial and market performance. On the respect of further development, we find that the 1th cluster with lowest R&D ratio has better financial performance, and the 4th cluster with highest R&D ratio have poor market performance. The 1th cluster with lowest R&D ratio has better performance of ROSP and poor performance of Tobin's Q.

CONCLUSION

The results this study shows the numbers of banking banks has no significantly impact on the performance of the debt enterprises. The results support hypothesis 1 that show the bank loan ratio has negatively impact on the financial performance and positive impact on the market performance. The reasonable reason is that the enterprise has higher bank loan ratio will pay more interests cost than the public debt. Then the debt enterprises with higher bank loan ratio have less financial performance. But the higher bank loan ratio will transfer the good operating information to market investors and to reduce the information asymmetric problems. Most market investors will be a free rider and they trust the governance function of the banking banks. So the debt enterprises with higher bank loan ratio have better market performance.

The research results not support hypothesis 2. The reputation of banking bank has no significantly impact on the financial or market performance of debt enterprises. The reason may be all banks of Taiwan

have the professional governance function, either the higher reputation banks or not. It also may be the calculations of the bank reputation of this study are not enough to measure the real bank reputation.

The life time has slightly positive impact on the market performance of the return rate of stock price and Tobin's Q. But the results of Scheffe test reveal the enterprises with longer life time may have poor financial and market performance on EPS, ROA and ROSP. The results of Scheffe test also show the enterprises with larger scale have better financial and market performance. The result also shows the information asymmetric problems do exist in the small scale and younger enterprises and that will influence the performance of the debt enterprises. The results support the hypothesis 3, the enterprises with shorter life time and small scale may have higher bank loans ratio. The banking banks play the important funds supplier for those enterprises with seriously information asymmetric problems. The R&D expenditures ratio and debt ratio all have significantly negative impact on financial and market performance of the debt enterprises. This result does not support the hypothesis 4. Obviously, the results of Scheffe test show that the outside investors have seriously doubt on the R&D ratio of the debt enterprises, as well as the information asymmetric problems do exist of the enterprises with high R&D ratio.

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