

ความสัมพันธ์ระหว่างการกระจายการลงทุนและความเป็นเจ้าของของเจ้าหน้าที่บริหารของกิจการในประเทศไทย



นางสาว นวกาญจน์ ขำแป้ง

สถาบันวิทยบริการ

จุฬาลงกรณ์มหาวิทยาลัย

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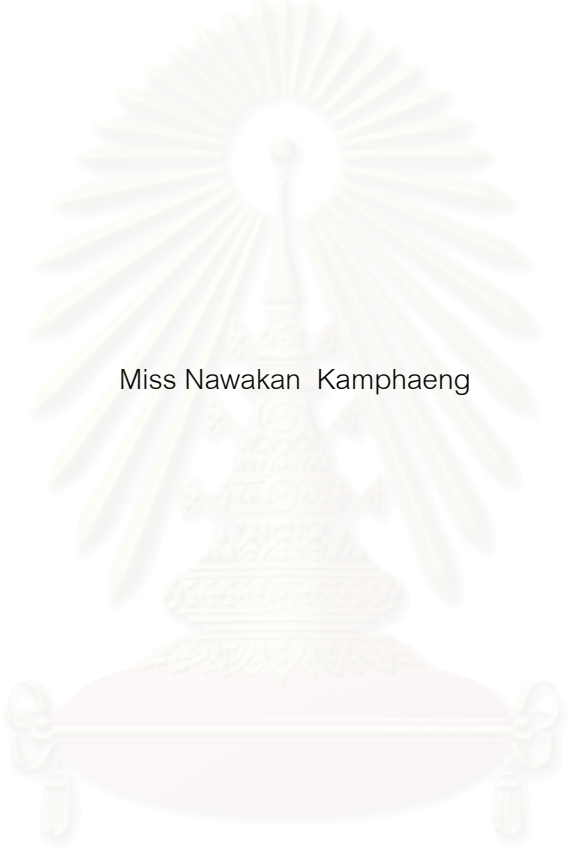
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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

THE RELATION BETWEEN CORPORATE DIVERSIFICATION AND MANAGERIAL EQUITY
OWNERSHIP IN THAILAND



Miss Nawakan Kamphaeng

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

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By MISS NAWAKAN KAMPHAENG
Department Banking and Finance
Thesis Advisor Sunti Tirapat, Ph.D.
Thesis Co-advisor -

Accepted by the Faculty of Commerce and Accountancy, Chulalongkorn University
in Partial Fulfillment of the Requirements for the Master 's Degree

..... Dean of Faculty of Commerce and Accountancy
(Assistant Professor Virach Aphimeteetamrong, Ph.D.)

THESIS COMMITTEE

..... Chairman
(Assistant Professor Virach Aphimeteetamrong, Ph.D.)

..... Thesis Advisor
(Sunti Tirapat, Ph.D.)

..... Member
(Charlie Charoenwong, Ph.D.)

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วิทยานิพนธ์ฉบับนี้มุ่งศึกษาถึงผลกระทบของการกระจายการลงทุนของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยว่า การดำเนินกลยุทธ์ดังกล่าวนี้จะก่อให้เกิดมูลค่าเพิ่มหรือมูลค่าความสูญเสียแก่กิจการหรือไม่ โดยข้อมูลที่น่ามาศึกษาจะเลือกข้อมูลในช่วงระหว่างปี 2539 – 2541 เพื่อนำมาประเมินผลกระทบจากการกระจายการลงทุนที่มีต่อมูลค่าของบริษัท ผลการศึกษาที่ได้ให้ผลเช่นเดียวกับงานศึกษาของประเทศที่พัฒนาแล้ว กล่าวคือ บริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยที่ดำเนินกลยุทธ์กระจายการลงทุนมักประสบกับมูลค่าความสูญเสียต่อกิจการโดยเฉลี่ยแล้วมากกว่า 20 เปอร์เซ็นต์ แต่อย่างไรก็ตาม ผลการศึกษายังไม่พบความสัมพันธ์ระหว่างระดับการกระจายการลงทุนกับระดับความขัดแย้งของตัวแทนและเจ้าของของกิจการ (Agency Problem) เพียงแต่มีหลักฐานระบุว่า มูลค่าความสูญเสียที่เกิดขึ้นจากการกระจายการลงทุนนี้มีสาเหตุหลักสืบเนื่องมาจากต้นทุนความขัดแย้งระหว่างตัวแทนและเจ้าของ (Agency Costs)

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

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ลายมือชื่อนิติ
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ลายมือชื่ออาจารย์ที่ปรึกษาร่วม

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NAWAKAN KAMPHAENG : THE RELATION BETWEEN CORPORATE DIVERSIFICATION AND MANAGERIAL EQUITY OWNERSHIP IN THAILAND. (ความสัมพันธ์ระหว่างการกระจายการลงทุน และความเป็นเจ้าของของเจ้าหน้าที่บริหารของกิจการในประเทศไทย) THESIS ADVISOR : SUNTI TIRAPAT, Ph.D., THESIS COADVISOR : -, 63 pp. ISBN 974-346-246-5.

This thesis investigates whether the corporate diversification of companies listed in the Stock Exchange of Thailand (SET) leads to value creation or value destruction. Using the data from 1996 to 1998, the study estimates the effect of diversification on firm value. The evidence shows that, like studies in developed countries, companies listed on the SET on average experience a value loss of more than 20 percent through their corporate diversification. While the study does not show whether there exists the relation between the level of diversification and the degree of agency problem, the empirical results suggest that the value loss due to diversification stem from the agency costs.

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

Department	Banking and Finance	Student's signature
Field of study	Finance	Advisor's signature
Academic year	2000	Co-advisor's signature

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สถาบันวิทยบริการ
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Chapter 1

Introduction

Background of the Study

In the organization, making the right decision on the proper strategy deems to be significant in leading the firm to accomplish and obtain value maximization. Diversification is the most frequently used. Previous theoretical studies suggest that corporate diversification has both benefits and costs. The potential benefits can be categorized as either operating or financial in character. The operating gain or operating efficiency generally involves diversified firms whose earning streams are perfectly, or nearly perfectly, correlated and vice versa. At this point, such operating gain comes from the opportunities for economies of scale, economies of scope or other direct efficiencies in manufacturing and marketing, the greater power in covering market share or monopoly, and a benefit sharing in research, basic technological expertise and managerial skills in the administrative improvement as well. In the part of financial synergy, taking advantage of transient errors in the market valuation of acquisition candidates is firstly made. That is, in the case of market imperfection, if the firm that is temporarily undervalued by the investment in public and can be acquired by the other firms at a lesser price than that of the theoretical true value, the acquiring company's stockholders will profit from the bargain purchase. Secondly, the unused debt capacity of an acquired firm is used to re-arrange an acquiring company's capital structure. Thirdly, either an expansion of debt capacity or more powerful compromising in obligation criteria can also be used due to the prospective negatively correlated earning cash flow. Consequently, saving in tax shield is automatically contributed. Diversification strategy sometimes helps lessen incentive to forgo positive net present value projects or under investment problem. In sum, diversified firm can broaden its internal capital market rather than stand-alone firm. The internal capital market can dominate the external one by allowing a better allocation of capital across competing uses, better sharing of inside information, and better investment control. It implies that diversification helps firm allocate resources more efficiently and provide some risk reduction benefits

to firm. Conversely, the potential costs of diversification could be obviously available, including the use of increased discretionary resources to undertake value-decreasing investment. It means that poor segments could drain resources from better-performing segments as cross-subsidization. Both the over investment in segments from industries with limited investment opportunities, as observed by a low Tobin's q ratio, and the inefficient investment are additional sources of loss in value. Moreover, the information asymmetry costs between central management and divisional managers can build value loss of diversification as well. Then the certainty of value effect of diversification on firm can hardly be predicted. However, the recent evidence suggests that, on average, the costs of diversification outweigh the benefits and argues that stockholders can not obtain risk reduction benefit from diversification since they themselves can adjust their target return of the investment with the desired level of risk through portfolio diversification.

Despite diversification contributes value decreasing of firm and simultaneously reducing shareholders wealth, then why this strategy is still highly acceptable to the firms. The reasonable explanation to this question is stated in the agency problem hypothesis that is the managers derive private benefits from diversification exceeding their private costs. According to the previous studies, the managers gain a wide range of private benefits from diversification; for instance, supervising the larger organization furnishes the managers more power and prestige, not to mention a greater amount of compensation. In addition, diversification inevitably makes the managers the valuable and indispensable persons to firm. Furthermore, managers' engagement in diversification is to decrease their largely undiversified personal portfolio. With all these factors, it is undoubtedly that diversification shall continuously be used.

As the agency problem is an interesting issue that many researchers have been trying to figure out, it is worth considering whether such agency problem, in this case measured by the relation between the managerial ownership and the corporate diversification, is available in Thailand and whether such equity ownership

structure may also affect the valuation consequences of diversification for Thai firms. So, this paper identifies evidence on the agency cost hypothesis by examining (1) the relation between the level of diversification and the fractional equity ownership of officers and directors (2) the relation between value of diversification and the level of managerial ownership for a sample of unrestricted firms in the Stock Exchange of Thailand (SET).

Objectives of the Study

Presently, it is noticeable that good governance becomes a significant topic to the administration of Thai firms since it enhances good distributions of the firm benefit to shareholders. However, the good governance could be deviated by some factors such as the agency problem which is the benefit loss and gain for the managers individually. This paper lies stress on the point about the agency problem and corporate diversification. The objectives are to evaluate the valuation consequence from diversification and to find the relation between the propensity of corporate diversification and the percentage of managerial equity ownership. Such relation can imply to whether the Thai firms are obviously confronting with severe agency problem. Additionally, this paper also observes whether the cost reduction from diversification would occur when the agency problem decreases in the firm by estimating the relation between value of diversification and the managerial ownership structure.

Scope of the Study

The observations are selected from the firms registered in the Stock Exchange of Thailand (SET) as of year-end 1997. The sample is restricted to the firms with no reported segments in financial services and insurance industry. Segment sales of each firm and the percentage of managerial equity shareholdings derive from 56-1 and 56-2 report which are prepared by the firm board of directors. The number of analysts is gathered from Institutional Brokers Estimate System (IBES). Additional

necessary data come from Integrated-SET Information Management System(I-SIM C.D.). Besides, this study displays the robustness of the results over time; consequently, the sample years are extended covering 1996 and 1998 as well.

Contribution

This research provides evidence on the effects of diversification on firm value in Thailand and also the studies in the association between agency problem and corporate diversification strategy. The results could be an indication to whether the conflicts of interests between managers and shareholders applying diversification strategy would obviously occur and whether such agency costs severely affect the value of firm. If the outcome shows seriously negative signal, it will lead to the stimulation of all stakeholders to pay more attention in monitoring and controlling the firm. So, this will help reduce agency problems within the firm and enhance the firm to operate its own business more efficiently than previously practiced.

Methodology in Brief

Berger and Ofek's (1995a) method was employed for calculating the excess value which was the proxy of value from diversification. Besides, t-test statistic and the Nonparametric Wilcoxon Rank Sum Test were used for expressing the significant difference of mean and median excess value when comparing non diversified with diversified companies. Cross-sectional regression estimation was also made to evaluate both the relation between the level of corporate diversification and managerial equity ownership; and the relation between the value of diversification and managerial ownership structure with other essential control variables.

Organization of the Study

The remaining of this thesis is organized as follows. Chapter 2 contains the literature review where the relevant theoretical models and research hypotheses are briefly outlined. Chapter 3 gives the sample and data descriptions as well as the computation of necessary data including segment sales, measures of the level of diversification and excess value. Chapter 4 examines the hypothesis, methodology and results including the robustness over time. Chapter 5 refers to conclusions and suggestions.



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Chapter 2

Literature Review

Literature Review

Literature review involving the theme of this study could be classified into three main groups – the value of diversification, the evidence on managers' private benefits from the diversification strategy application, and the agency problem showing the related characters between managerial equity ownership and the degree of corporate diversification. Explanation of each group is given below and is guideline procedures to be used in this paper.

To begin with the value of diversification, theoretical arguments developed during 1960s and early' 70s generally addressed the benefits of diversification, whereas more recent papers addressed the costs. *In the part of benefit*, **Chandler (1977)** emphasized on greater operating efficiency and documented that multi division firms could create a level of management concerned with coordination of specialized departments. Then, such diversified firms were naturally more efficient and more profitable than their line of business would be separately.

Another potential benefit from combining enterprises with imperfectly correlated income streaming was test by Lewellen. **Lewellen (1971)** implied that this coinsurance effect provided multi segment firms greater opportunity of debt capacity expansion than single segment firms of similar size did. At this point, increasing debt capacity did not mean to utilize the unused debt capacity of an acquired firm by taking advantage of rearranging capital structure from merging but it expressed in case of inducing creditors to establish a new aggregate limit on lending which could be higher than the sum of the original limits established for the two merger partners individually. The concept using in this study involved in the reluctance of a potential lender to provide debt financing to an enterprise which logically depended on the ability to meet the interest and repayment commitments of the borrowers. In doing this, the necessary

factors were (1) an appraisal of the probabilities associated with events of the distribution or sequence of borrower's annual cash flow and (2) the universe of cash flow events occurred to the operations of two debtors corporations who were contemplating merger. Comparing the probability that the two separate corporations happened to realize a cash flow outcome below contractual obligations with the likelihood of the same disaster from the merger companies, the results identified that the probability of disaster from the merger companies was less than that from the sum of the two separate ones. In this manner, it implied that a single legal entity or merger company of the two income streams which had imperfectly correlation contributed to a kind of partial co-insurance of loan obligations, not be available in the separate legal entities. In the other words, the likelihood of default for any given aggregate level of debt obligations was decreased when merger occurred. Accordingly, such diversified firm was more attractive to creditors and then could expand firm's debt capacity in both extending the limitation on lending and relieving debt service criteria which enabled the firm to effectively operate its business.

Furthermore, in a world of corporate taxes, raising debt capacity could create value by increasing interest tax shields. At this point, **Majd and Myers (1987)** supported that undiversified firms were at a significant tax disadvantage because tax was paid to the government when income was positive, but the government did not pay back the firm when income was negative.

In the part of costs from diversification, **Jensen (1986)** suggested that conflict of interest between shareholders and managers over diversification strategy occurred when the firm created substantial free cash flow. Disgorging such cash to shareholders reduced the resources under managers' control; consequently, diversification was an alternative which encouraged the managers to push up the firm to grow beyond the optimal size. As you can see, managers of firms with unused borrowing power and large free cash flow were more likely to undertake low-benefit or even value destroying investment.

Furthermore, **Rajan, Servaes, and Zingales (2000)** had shown that diversification discounted the firm value due to its inefficient investment or inefficient resource allocation. This study developed the capital allocation model, which was different from the previous ones, under the assumptions that (1) headquarter had limited power over its division and (2) surplus from diversification strategy had to share among divisions through negotiation and their choices of investment. The study emphasized on diversified U.S. firms during the period 1980 to 1993 using the segment data on COMPUSTAT. The hypothesis described whether transferability among the segments in diversified firm did not depend so much on its size-weighted opportunities, proxied by Tobin's q ratio. Such wrong direction of resource allocation implying inefficient investment characterized as allocations toward the relatively low q segments of a diversified firm exceeded allocations to its relatively high q segments. Eventually, the empirical results provided strong evidence that there were inefficient resource allocations in diversified firm and these indicated the diversified firm's value was lower than the stand-alone one.

Meanwhile, **Stultz (1990)** supported that diversified firms would invest too much in lines of business with poor investment opportunities. **Meyer, Milgrom, and Roberts (1992)** made a related argument regarding the cross-subsidization of failing business segments. Since a failing business could not have a value below zero if operated on its own, but could have a negative value if it was the part of conglomerate that provided cross-subsidies. As a result, Meyer, Milgrom, and Roberts referred that such unprofitable lines of business built greater value losses in conglomerates than they would as stand-alone firms.

Besides, **Myerson (1982)** and **Harris, Kriebel, and Raviv (1982)** documented the information asymmetry costs arose between central management and divisional managers in decentralized firms. Since individual divisional managers had special information or expertise concerning their particular sphere of activity and therefore it was a disadvantage to reveal such privileged information freely to top management. Additionally, the research showed these costs were higher in

conglomerates than in focused firms to disperse information within the firm, leading to the prediction that diversified firms were less profitable than their lines of business would be separately.

Comment and Jarrell (1994) found that greater corporate focus was consistent with shareholder wealth maximization due to the positive relation between stock returns and focus increases. In the other word, this paper confirmed the negative correlation between excess return, proxied by abnormal stock returns, and the degree of diversification. In doing so, data was restricted on NYSE- and ASE- listed firms from COMPUSTAT during fiscal year 1978 to 1989. The results provided the diversified firms could absolutely not exploit financial economies of scope (for instance, greater debt capacity or reliance on internal capital markets) through diversification strategy. Furthermore, such failure of diversification attributed a trend toward focus strategy which meant that the firm preferred to reverse to concentrate to its core business since it could create a larger amount of gain. Similarly, **Lang and Stulz (1994)** presented evidence of negative relation between Tobin's q ratio and the level of diversification.

Finally, **Berger and Ofek (1995a)** strongly studied the effects of diversification on firm value by estimating the value of a diversified firm's segments as if they were operated as separated firms. All data were taken from the Compustat Industry Segment (CIS) database tape of the 1986, 91 periods. All sample firms had total sales of at least \$20 million and had no reported segments in the financial services industry (SIC codes between 6000 and 6999). From these procedures resulted in 16,181 observations, 5,233 of which were the multi-segmented. Of the multi-segment observations, 2,473 were the two-segmented, 1,577 were the three-segmented, 752 were the four-segmented, and 451 were reported to be of the five or more segmented. For computing whether diversification would enhance or decrease corporate value, the excess value was then used as the measure of the overall value effect. The excess value was the natural logarithm of the ratio of a firm's actual value to the sum of imputed values for its segments as stand-alone entities. The imputed value of each segment was calculated by multiplying the median ratio, for single-segment firms in the same industry,

of the total capital to one of three accounting items (assets, sales, or earning) by the segment's level of aforementioned accounting items. At this point, you can see that the paper adopted three multiplier approaches in increasing the validity of the result and fortunately, all information necessary for this method were available. The results were consistently across the three multipliers with the value loss from diversification ranging from 12.7% by using the asset multiplier to 15.2% by using the EBIT multiplier. This paper also examined how the value loss varied between related and unrelated diversified firm and then discovered that relatedness mitigated the value loss from diversification. In order to extend the reliability of outcomes, the study employed profitability as an alternative measure of overall effect. From this process documented that the segments of diversified firms had lower operating profitability than single-line businesses and it was also the additional support for the conclusion of value-decreasing diversification.

Berger and Ofek also regarded the possible sources of gain and loss from diversification. This study found evidence suggesting that over investment and the subsidization of poorly performing segment contributed to the value loss from diversification. In the section of benefits of diversification such as increasing debt capacity and interest tax shields, the result expressed that the multi-segment firms could increase borrowing capacity. But such amount did not appear economically significant and then led to support the evidence that diversified firms were rarely to achieve benefit in saving from higher interest tax shields. Other empirical studies had generally produced mixed results on diversification's overall effect. However, the inclination of recent studies provided evidence of a negative relation between diversification and firm's value.

Now come to the agency problem in the case that diversification strategy is involved. At this point, if the manager were the firm's sole security holder, there would be no incentive problems to transfer wealth from shareholder to manager since the manager had to pay directly for all consumption on the job. In contrast, when the manager were no longer sole security holder but the corporate manager served as the

agent of shareholders, then a relationship would be fraught with conflict of interest. The manager had an incentive to take advantage from shareholders through diversification strategy in order to obtain greater amount of private gains.

Jensen (1986) discussed the manager of the firm with large free cash flow were more likely to aggressively expand the firm. Such firm growth implied increasing the resources under the manager's control and simultaneously established more power and prestige to manager, not to mention the increase in manager's compensation which positively related to the firm growth in sale. Meanwhile, **Jensen and Murphy (1990)** provided the evidence supporting above idea that managerial compensation also was related to the firm size.

In the others' point of view, **Shleifer and Vishny's assertion (1989)** described that since the managers were the represent of shareholders, it was unavoidable to operate firm under many pressures such as monitoring mechanism, the managerial labor market and product market competition. Accordingly, the managers tried to entrench themselves by making themselves valuable to shareholders and costly to replace them. In doing this, Shleifer and Vishny suggested the manager-specific investment which was spending the firm's resources in projects whose value was greater under the current manager than best value-maximizing one. This meant corporate managers made excessive investment in business related to their own background and experience, even when such investments were not profitable for firm. That manager-specific investment provided managers valuable and indispensable to shareholders, reduced the probability of being replaced and increased the power in negotiation for higher compensation and larger perquisites as well. Besides, this paper founded that acquisition and divestiture were the interesting way outs to entrench managers especially when the firm was underperforming its industry or lacked growth opportunities in its existing business. On this matter, diversification created managers' private benefit by decreasing their employment risks.

Furthermore, **Amihud and Lev (1981)** presented that managers engaged the diversification to diminish the risk of their undiversified personal portfolio and their undiversified employment risks; for example, risk of losing job and professional reputation as well. Amihud and Lev gave reason that as it is known that manager employment income had strongly positive correlation with the firm's risk and firm's performance. If the business failed, it absolutely affected the manager's future employment and earning potential. Unfortunately, such employment risk could not diversify by trading in capital market like many other sources such as financial securities. Consequently, diversification like conglomerate merger which could stabilize the firm's income stream was an incentive means to reduce both undiversified manager employment risk and undiversified manager personal portfolio simultaneously.

Eventually, in regard to the relation between managerial equity ownership and the degree of corporate diversification, previous literatures indicated both of positive and negative correlation. **Amihud and Lev (1981)** stated that as managers owned more of the equity of their own firms they would be more likely to diversify due to their greater need for personal risk reduction. The observations in this study included 309 firms, which focused on at least ten million dollars of the total asset size of the acquired firms. Amihud and Lev applied the number of mergers as a proxy of level of diversification and characterized the type of managerial control into three groups. The first group was strong owner control where one party or a specific group owned at least 30% of the outstanding common stock of the corporation. The second one was weak owner control where a single party held between 10% and 29.9% of the stock and the last one was management control where no single party held 10% or more of the outstanding stock of the company. The empirical was consistent with the expectation and also identified the coefficient of three types of control groups ascended from strong owner through weak owner to manager owner control. It implied that the propensity of firms to engage in diversification strategy was monotonically increasing when the proportion of managerial equity ownership in the firm raised.

Conversely, David J. Denis, Diane K. Denis and Sarin (1997) examined such positive relation could dominate only at very high level of managerial ownership but overall effect trended toward the level of diversification was negatively related to managerial ownership. To test this, all of 933 observations were restricted to those firms with fiscal year 1985 data on COMPUSTAT's Industry Segment (CIS) file that had consolidated sales of at least \$20 million and had no reported segments in the financial services industry or in the regulated utilities industry. The proxies for the level of diversification following Comment and Jarrell (1995) were the fraction of firms with multiple segments, the number of reported segments, the number of 4-digit SIC code assigned to the firm by COMPUSTAT, a revenue-based Herfindahl index and an asset-based Herfindahl index. The results from all proxies of the level of diversification documented the strongly negative correlation with the managerial equity ownership. Moreover, this paper also computed the value of diversification using the excess value which was employed Berger and Ofek's (1995a) method and insisted that diversification strategy provided firm's value loss that probably stemmed from agency problems.

Looking into the content of the previous studies, almost all of them emphasized only on the value-enhancing and value-decreasing effect from diversification, but disregarded the factors affecting the propensity of using such strategy. As the manager whose main function is to operate and control the firm is one of the key factors in dominating the corporate strategy, it is a good opportunity to make further study on the manager's roles towards diversification. This thesis then focuses on the relation between the level of diversification and the managerial equity ownership; and the correlation between the value of diversification and the managerial ownership. These issues have never been researched before so far in Thailand.

Chapter 3

Sample and Data Description

Computing somewhat about diversification, it is essential to clearly stipulate the diversification concept and how to measure it. Meanwhile, the connection between agency problem and diversification that is consistent with the objective of this study is one of the key factors to carefully be concentrated on. Accordingly, the scope of study such as the selected observations, the length of period and the relevant information have to cover all important details and subsidize the calculation procedures efficiently. This section therefore consists of the general overview of sample selection and characteristics, the main variables such as the percentage of managerial equity ownership, the number of analysts, the measure of sale in each sector, the measures of the level of diversification and the measure of the excess value. Details of each items are given as followed.

A. Sample Selection and Characteristics

The sample is restricted to firms in SET with calendar year 1997 as the base year and has no reported segments in the financial services and insurance industry. The reason for excluding such industries from the whole sample is that they are regulated industries of which investment policies are controlled under government regulations. Additionally, the study evaluates the robustness of the results by calculating the data from 1996 and 1998 which are adjacent to 1997, the base year. Details will be defined later. The information used in this paper is collected from various resources, which are

- The data base of the Stock Exchange of Thailand such as the Integrated-SET Information Management System (I-SIM C.D.) version 1998 (Q3–Q4) providing the comprehensive listed companies information database during 1996 to 1998; for instance, the companies' profiles, financial

statements, auditor's reports, the companies' announcements or relevant news and other main highlights as well.

- The 1996, 1997 and 1998 annual reports which are derived directly from the companies and collected from SET.
- The 56-1 and 56-2 reports of the year 1996, 1997 and 1998.¹
- The data from Institutional Brokers Estimated System (IBES) by which the firms' performance and other main activities as well as the future status of those firms are analyzed and predicted.
- The information provided by the firms such as the segment sales (sales in each sector), the percentage of managerial equity ownership and the R&D expenditure.²

From the criteria of the data selection mentioned above, the overall sample firms are 288, 293 and 269 in the years 1996, 1997 and 1998 respectively.

Table I defines descriptive statistics for the sample firms in the year 1997. It shows that as the universe of the sample has covered almost all Thailand Equity Market, considerable variation has occurred in data distribution. For instance, the average book value of total asset is ฿8.83 billion and ranges from ฿260.63 million to ฿345.73 billion. In the same way, the average sale is ฿3.62 billion and ranges from ฿35.81 million to ฿111.73 billion, whereas the average adjust consolidated sale is ฿7.05 billion. Besides, the market value of equity covers from ฿8.26 million to ฿127.1 billion; meanwhile, total capital (book value of debt plus market value of equity) covers from ฿166.15 million to ฿297.9 billion.

¹ These reports which are made by the boards of the firm indicate the additional information of the firm necessarily declaring to SET; for example, the percentage of investment in the subsidiary firms, the percentage of managerial equity ownership and segment sales or sales in each sector that are defined in the form of the subsidiaries' sales and the revenue structure.

² All information mentioned above are obtained directly in written from the sample firms.

Table I

Descriptive Statistics

Descriptive Statistics for the sample of 293 firms in the base year, 1997. Data derives from I-SIM C.D. and 56-1 report. All Baht value is expressed in millions.

	Mean	Median	Minimum	Maximum
Book value of total assets	8,833.05	2,688.06	260.63	345,728.57
Sales revenue	3,615.51	1,303.78	35.81	111,725.75
Adjusted consolidated sales	7,048.96	1,419.65	35.81	482,224.96
Market value of equity	2,246.42	334.13	8.26	127,100.00
Total capital	9,301.30	2,696.37	166.15	297,900.89
Percentage ownership of officers and directors	18.57	10.65	0.00	87.87

Note Descriptive Statistics for data in year 1996 and 1998 define in Appendix B - Table IX

From all ranges of data above, it confirms that the selected samples cover from the small firms to the larger ones. However, considering on the significant difference between mean and median of such variable values, it implies a right skewness in the distributions of the data. It means that almost all of the Thai listed companies are the small and medium enterprises (SMEs); consequently, median values are a little low. Although, the large enterprises of the obviously bigger in size than the others are only the small number in the whole market, it can significantly push the mean values of all variables up and make it greatly different from medians. Accordingly, it provides an evidence that the median values are rather below than the mean ones due to the effect of the irregularity of large enterprises.

B. Percentage of Managerial Equity Ownership

The definition of Managerial Equity Ownership used in this paper is the equity ownership of the directors and management officers of the firms. From Table I, the average managerial equity ownership is 18.57 percent of the firm's shares and ranges from zero percent to 87.87 percent which shows the variation in data distribution.

In addition, this paper categorizes the percentage of managerial equity ownership into four subsamples with response to necessary hypothesis testing. The classification criteria depends on the proper sample size in each group. That is;

- The first group refers to the firms with managerial shareholding less than 1 percent which includes 68 observations in 1997.
- The second group refers to the firms with managerial shareholding between 1 to 10 percent which includes 76 observations in 1997.
- The third group refers to the firms with managerial shareholding from 10 to 30 percent which includes 68 observations in 1997.
- The last group refers to the firms with managerial shareholding more than 30 percent which includes 81 observations in 1997.

C. The Number of Analysts

Such data is obtained from Institutional Brokers Estimate System (IBES). Since the number of analysts collected by IBES is available only until year 1997, the variable in the regression equation in the year 1998 must be excluded. This could illustrate as the limitation in data for this paper.

D. Measure of Sale in Each Sector

Sale in each sector of the firm is one of the main resources for calculating the level and the value of diversification. At this matter, the diversification could be considered from the basis of investment of firm. If the sample firm or parent firm invests in the subsidiary firms more than 20 percent of the whole subsidiary firm equity shares and the sectors of such subsidiary firms are different from their own parent firm's sector, the diversification concept is held. In contrast, if the sectors of the subsidiary firms are still the same as the parent firm, this parent firm is defined as the single firm or non-diversified firm.

Parent firm's sale	Subsidiary firm's sale in which parent firm invests at least 50% of subsidiary firm equity share			Subsidiary firm's sale in which parent firm invests 20 to 50% of subsidiary firm equity share		
	sector A	sector B	sector C	sector A	sector B	sector C
item 1	item 2	item 3	item 4	item 5	item 6	item 7

Note If the parent firm invests in the subsidiary firms more than 50% of the subsidiary's shares, Item 1 is the consolidated sale of the parent firm. If the parent firm do not invest in the subsidiary ones more than 50% of the subsidiary's shares, Item 1 is its own parent firm's sale due to the consolidated financial statement not available.

The information about the percentage of the parent firm's investment in its subsidiary firms and each subsidiary firms' sales derive from 56-1 report. The criteria in classification of the subsidiary firms' sector bases on the regulation of SET which is summarized in the Appendix A. In the part of the parent firm's sector using in this study refers to the sector already provided by SET.

As mentioned earlier, the subsidiary firms are the firms whose at least 20 percent of shares are owned by the parent firm. However, the consolidated sale expressed in parent firm's financial statement would consolidate for at least 50 percent-share subsidiary firms only, not including 20 to 50 percent-share ones. Consequently, such consolidated sale must be adjusted in order to be consistent with the structure of data. Adjusted consolidated sales can calculate as follow;

- Assumption**
- 1) The universe of the sector in the whole market is sector A, sector B and sector C
 - 2) The sector of the parent firm is sector A.

Adjusted consolidated sale	=	item 1 + item 5 + item 6 + item 7
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Additionally, sale in each sector can compute by

- 1) For the sectors which are different from the parent firm sector

In this case refers to sector B and sector C

$$\text{Sales in sector B} = \text{item 3} + \text{item 6}$$

$$\text{Sales in sector C} = \text{item 4} + \text{item 7}$$

- 2) For the parent firm sector

In this case refers to sector A

$$\begin{aligned} \text{Sales in sector A} &= \text{Adjusted consolidated sale} - \text{Sales in} \\ &\quad \text{sector B} - \text{Sales in sector C} \\ &= (\text{item 1} + \text{item 5}) - (\text{item 3} + \text{item 4}) \end{aligned}$$

E. Measures of the Level of Diversification

This paper examines three different proxies for the level of diversification

- 1) The fraction of firms with multiple segments

$$= \frac{\text{the number of firms with multiple segments}}{\text{Total sample firms}}$$

- 2) The number of segments

- 3) Diversification Index (DI)

The diversification index is defined by inverting a Herfindahl index. That is

$$DI = \frac{1}{HI}$$

where Herfindahl index, HI, is calculated across n business segments as sum of the squares of each segment i's sale, s_i , as a proportion of total sales :

$$\begin{aligned}
 HI &= \sum_{i=1}^n \left(\frac{s_i}{\sum s_i} \right)^2 \\
 &= \sum_{i=1}^n s_i^2 / \left(\sum_{i=1}^n s_i \right)^2
 \end{aligned}$$

Thus, the closer HI is to one, the more the firm's sales are concentrated within a few of its segments. And this implies that the high DI means the high level of diversification.

Panel A of Table II reports descriptive statistics for the level of diversification within the sample firms in the base year, 1997. Forty two percent of firms are defined more than one business segment. The number of segments averages 1.82 and ranges from one to twelve whereas the number of segments excluding the non-diversified firms averages 2.97. On average, the diversification index expresses 1.23 measured by the whole samples and 1.56 measured by diversified firms only and ranges from 1 to 13.13. However, this study also provides descriptive statistics for the level of diversification in year 1996 and 1998 in Appendix C – Table X. From all results of data distribution indicate the satisfying variation of data.

F. Measure of the Excess Value

The Excess value, a proxy of the value of diversification, is measured as the natural logarithm of the ratio of the firm's actual value to its imputed value, calculated using Berger and Ofek's (1995a) method. A firm's actual value is defined as the market value of equity plus the book value of debt. To calculate the firm's imputed value, Berger and Ofek's (1995a) method sums the imputed value of each of the firm's segments as stand-alone firms. Each segment's imputed value is calculated by multiplying the industry median ratio, for single-segment firms, of total capital to sales by the level of sales for the segment to obtain the imputed capital of the segment. Accordingly, the sum of these imputed values across the segments within the firm provides an estimate of imputed value for the entire firm. That is;

$$EXVAL = \ln(V / I(V))$$

$$I(V) = \sum_{i=1}^n AI_i * (Ind_i(V/AI)_{mf})$$

where

EXVAL	=	firm's excess value
I(V)	=	imputed value of the sum of a firm's segments as stand-alone firms
AI _i	=	segment i's value of sales
Ind _i (V/AI) _{mf}	=	multiple of total capital to sales for the median single-segment firm in segment i's industry
V	=	firm's total capital (market value of common equity plus book value of debt)
n	=	total number of segments in segment i's firm

Thus, positive excess value indicates that diversification enhances the value of segments beyond that of their stand-alone counterparts. Negative excess value indicates that diversification reduces value.

Panel B of Table II reports descriptive statistics for the excess value in year 1997. As you can see, the diversified firms express significant negative excess values considering both by mean and median. In the other words, the value of the diversified firm is significantly below the sum of the imputed values for the firms' segments as stand-alone entities. It implies diversification decreases the firm value since the excess value of diversified firms are significantly below those of the single-segment firms.

Table II

Descriptive Statistics for the Level of Diversification and Excess Value Measures

Diversification is measured by the fraction of firms reporting multiple segments, the number of segments and Diversification Index. Excess Value is measured as the natural logarithm of the ratio of the firm's actual value to its imputed value, calculated using Berger and Ofek's (1995a) method. A firm's imputed value is the sum of the imputed values of its segments, with each segment's imputed value equal to the segment's sale multiplied by its industry median ratio of capital to sale. A firm's actual value is defined as the market value of equity plus the book value of debt. The sample includes 293 observations. Significant levels indicate the difference between multi-segment and single-segment firms. Significance of excess value is assessed by using a t-statistic for mean and the Nonparametric Wilcoxon Rank Sums Test for median.

	mean	median	minimum	maximum
Panel A : Measure of the level of Diversification				
Fraction of multi-segment firms	0.42	n.a.	n.a.	n.a.
Number of segments	1.82	1.00	1	12
Number of segments <u>excluding the non-diversified firms</u>	2.97	2.00	1	12
Diversification index	1.23	1.00	1.00	13.13
Diversification index <u>excluding the non-diversified firms</u>	1.56	1.20	1.00	13.13
Panel B : Excess Value Measures				
Single-segment	0.0268	0.0000	-2.7820	3.5367
Multiple-segment	-0.2703	-0.1302	-4.8561	1.8549
P-value (different)	0.0087	0.0312		

Note Descriptive Statistics for the Level of Diversification and Excess Value Measures of the year 1996 and 1998 denote in Appendix C - Table X

Chapter 4

Hypotheses, Methodology and Results

Hypotheses

A. The Level of Diversification and Managerial Equity Ownership

If the agency problem, as described in the previous section, is responsible for the increase in corporate diversification and the increase in managerial ownership makes managers bear a higher costs associated with diversification, then the study hypothesizes that there will be the negative relation between the level of diversification and the percentage of managerial equity ownership.

B. The Value of Diversification and Managerial Equity Ownership

If value loss associated with corporate diversification is due to the agency problem, it is possible that firms without agency problem may engage in diversification with no value loss. Thus, the study would expect that high managerial ownership firms will not experience value loss associated with diversification while low managerial ownership firms will.

Methodology

A. Measuring the Relation between Corporate Diversification and Managerial Equity Ownership

As alluded to earlier, the agency problem predicts that if, on average, diversification strategy cuts down the firm value, when the managers hold significant part of ownership by increasing their stock proportion in the firm, they automatically likely less employ such strategy. And then it is consistent with the first hypothesis that

analyzes whether the level of diversification has negative correlation with the fraction of managerial equity ownership.

Basically, this paper examined roughly on such relation by matching only two variables which were the level of diversification and the percentage of directors and officers. As stated in the part of sample and data description, the level of diversification was measured by the fraction with multiple segments, the number of segments and diversification index. In doing so, the results showed the overall effect whether an aspect of ownership structure influenced the propensity of diversification and which types of the connections among them would be observed.

Previous studies insisted that the ownership structure influenced the level of diversification but that correlation could be examined into both positive and negative signs. Amihud and Lev (1981) found the positive relation and mentioned that the average number of acquisitions per firm, measured as the proxy of the level of diversification increased from 0.512 by strong ownership control group to 1.356 by the management control group. It referred to the increase in the proportion of managerial equity ownership contributed intense degree of diversification.

In contrast, David J. Denis, Diane K. Denis and Sarin (1997) indicated a monotonic negative relation between managerial ownership and the level of diversification for each of the five-diversification measures. The fraction of multi-segment firms declined from 0.79 for firms with managerial ownership less than 1 percent to 0.39 for firms in which managers owned more than 25 percent of the firm shares. Similarly, the number of reported segments reduced from 3.0 to 1.9 and the number of SIC codes derived from COMPUSTAT also decreased from 5.3 to 3.2. Ultimately, the asset-based Herfindahl index increased from 0.59 to 0.81, while the revenue-based Herfindahl index increased from 0.6 to 0.81. At this point, the previous studies provided mixed evidence of such relation depending on the characteristic of each paper observations.

Table III

Mean Levels of Diversification and Managerial Equity Ownership

The sample includes 293 firms as of year-end 1997. The percentage of officers and directors equity ownership derives from 56-1 report. Diversification proxies are the number of reported segments, the fraction of multi-segment firms and the Diversification Index.

The percentage of Managerial Equity	Number of Firms	Number of Segments	Fraction with Multiple Segments	Diversification Index
less than 1%	68	1.90	0.38	1.19
1% <= own <= 10%	76	1.91	0.43	1.22
10% < own <= 30%	68	1.72	0.43	1.15
more than 30%	81	1.75	0.43	1.35

Looking back to this paper in which the observations gathered from Thai firms registered in SET as of year-end 1997, Table III expresses the overview relation between the level of corporate diversification and managerial equity ownership structure in Thailand. The results are completely different from all previous researches abroad because the patterns across groups are not generally uniform. As a result, it implies that these two variables probably may not be related or in the other words, in Thailand the managerial equity ownership does not influence the propensity of diversification. Applying diversification strategy in an organization likely depends on other factors.

On this matter, to make the study more accurate and reliable, this paper also took into account the other factors which could be the criteria in decision making on the exploitation of diversification strategy of firm. For instance, the corporate of less diversification may be because of their smaller size and their fewer opportunities for profitable expansion into new lines of business. Likewise, since the characteristics of the corporates require high potential of firm-specific knowledge, they are unable to transfer to other lines of business. Besides, the corporates may be those operating in industries with smaller information asymmetries, thereby the need for an internal capital market through diversification is not necessary. And another factor is that the corporates may

be the younger firms of which the capability constraint in expanding into other lines of business.

Accordingly, this paper estimated cross-sectional regression to control the effects from all involving factors as mentioned above. The dependent variable was the number of reported segments. The independent variables were the percentage of equity ownership of officers and directors, the natural logarithm of the book value of total assets to control for any firm size effects, a dummy variable equal to one if the company prepared some R&D expenditure to control firm-specific knowledge, the number of analysts following the firm as a proxy for information asymmetries, and the natural logarithm of the number of years the firms running their business to control for any firm age effects.

At this point, the negative coefficient of the percentage of managerial equity ownership variable is expected. This refers to the managers with higher significant part of shareholdings likely to lesser employ diversification. Both coefficients of the natural logarithm of book value of total assets and the number of years would probably be positive. The negative coefficient of R&D dummy variable is seemingly occurred since firm-specific knowledge is contingent upon the limitation of diversification; where as, the coefficient of the number of analysts is feasibly negative as well because the higher number of analysts reflects to the lower information asymmetry denoting fewer essentialness of diversification.

Looking to the results in Table IV, the information from cross-sectional regression supports the results from Table III indicating the non-connection between the propensity of diversification and the managerial equity ownership in Thailand. The coefficient estimate of managerial ownership is insignificant and that the managerial ownership structure does not influence nor explain the degree of diversification³.

³ This paper also estimated model with the diversification index as a dependent variable but do not report the result because the managerial equity ownership is still not significant and the coefficients on the other variables are not seriously affected.

Table IV

Cross-Sectional Regressions Relating Diversification to Managerial Equity Ownership

The observations include 293 firms selected at year-end 1997. Coefficient estimates ordinary least square regression relating the number of reported segments to the equity ownership of officers and directors, the natural logarithm of the book value of total assets, dummy variable denoting the firm's decision in preparing some R&D expenditures, the natural logarithm of the firm age, and the number of analysts following the firm. P-value are reported below.

Independent Variables	Coefficient and p-value
Intercept	-10.0484 0.0000
Ownership of officers and directors	0.0025 0.5451
Ln (assets)	0.4522 0.0000
R & D dummy	0.2572 0.1134
Ln (firm age)	0.6424 0.0000
Number of analysts	-0.0131 0.6324
Adjusted R ²	0.1680
Number of observations	293

However, the significant effects are obtained from firm size and firm age which are characterized into significantly positive coefficient. That is the increase in both firm size and firm age relating to the greater level of diversification. In my opinion, this result corresponds with the traditional or conventional Thai firm operating style of which the decision making rather ties up with the size and age. It is believed that the firms with a large amount of assets or with a long-standing fame would be the terrific potential or firmly financial healthy ones. Not surprisingly that the firm with greater number of assets or age trends toward more diversifiable than the others. For the rest of variables, the coefficients are insignificant and then no clear explanation is available.

B. Measuring the Relation between the Value of Diversification and Managerial Equity Ownership

This section provides the methodology for testing the second hypothesis stating that if value-decreasing diversification stems from agency problems, reducing such agency problems may diminish the value loss from diversification. On this matter, the firm without agency problems probably may engage in diversification with no value loss. In the other words, the firm with no agency problems would efficiently take benefits from diversification due to no agency costs. Primarily, the study was roughly made on the relation between the value of diversification and managerial ownership by comparing excess value, classified by the level of managerial ownership, of the single segment firms with those of multiple segment firms. Table V reports mean and median excess value, categorized by the level of managerial ownership structure, for both single segment and multi-segment firms.

As you can see, the results can not be interpreted due to the insignificant p-value (different) in any of the level of managerial ownership which is caused by unrelated correlation between managerial ownership structure and the degree of diversification as described earlier in Table III and IV. Accordingly, when comparing the value of diversification measured by such ownership structure, it provides unclear

Table V

Excess Value classified by Managerial Ownership Structure

The sample includes 293 firms during year 1997. Excess value is computed as the natural logarithm of the ratio of the firm's actual value to its imputed value following Berger and Ofek's (1995a) method. Means are reported with medians below. The significance of p-value difference is estimated by using the t-test for means and the Nonparametric Wilcoxon Rank Sums Test for medians.

The percentage of Managerial Equity Ownership	Excess Value		
	Single Segment	Multiple Segment	P-value (difference)
less than 1%	0.05	-0.17	0.3231
	-0.01	-0.17	0.3873
1% <= own <= 10%	0.02	-0.31	0.2041
	0.00	-0.07	0.4696
10% < own <= 30%	-0.03	-0.36	0.1036
	0.00	-0.14	0.1803
more than 30%	0.07	-0.23	0.1601
	0.14	-0.13	0.2352

outcomes. To further study on the association between the worth of diversification and the percentage ownership of officers and directors, this paper established cross-sectional regressions relating excess value to the level of diversification and other factors which should account for the excess value. In this case, the level of diversification was proxied by multisegment dummy which was equal one if it was the multiple segment firm. The other variables included firm size measured by the natural logarithm of the book value of total assets, profitability proxied by the ratio of earning before interest and taxed to sales, growth opportunities evaluated by a dummy of R&D expenditure, and the ratio of total debt to total assets. The results are summarized in Table VI.

Firstly, considering the first column of Table VI, the whole 293 observations are applied for running the ordinary least square regression. The significant negative coefficient of multisegment dummy variable, which is equal to -0.48

Table VI

The Impact of Managerial Ownership on the Value of Diversification

All 293 firms of the whole sample are collected as of year-end 1997. Coefficient is estimated from cross-sectional regressions of excess value on multi segment dummy and other control variables. Berger and ofek's (1995a) method is used for excess value. P-values are reported below.

	All	Percentage Ownership of Officers and Directors			
		less than 1%	1% <= own <= 10%	10% < own <= 30%	more than 30%
Intercept	-2.8002	-1.6003	-4.4079	-3.6882	-1.8609
	0.0014	0.3399	0.0258	0.0695	0.3345
Multisegment dummy	-0.4823	-0.3551	-0.7123	-0.5490	-0.3495
	0.0000	0.1627	0.0038	0.0076	0.0693
Ln (assets)	0.1084	0.0436	0.1883	0.1322	0.0678
	0.0095	0.5901	0.0444	0.1763	0.4633
EBIT / Sales	-0.1657	0.0068	-0.1791	0.4582	-0.1904
	0.0000	0.9653	0.0133	0.4466	0.0011
R & D dummy	-0.0191	0.0675	-0.0421	0.2400	-0.2134
	0.8464	0.7710	0.8507	0.2184	0.2615
Total debt / assets	0.7598	1.0157	0.6405	1.0773	0.7418
	0.0000	0.0357	0.0498	0.0249	0.0243
Adjusted R2	0.1968	0.0409	0.2120	0.1561	0.2392
Number of observations	293	68	76	68	81

($t = -4.66$), insists the value loss from diversification and also be associated with the overall valuation consequences of diversification denoting in Table II in the section of sample and data description.

Column (2) – (5), divided as the group of managerial ownership structure, are designed to test whether the value loss of diversification is diminished or disappeared when the firm could reduce its agency problem or operates without such problem respectively. Accordingly, the paper estimated the regression of excess value on diversification within different managerial ownership categories and evaluated whether such excess value was significantly affected within each ownership category. In doing this, it is assumed that the agency problem between managers and shareholders probably be decreased when those managers increase their proportion of the firm stocks. Consequently, lower or no value loss is expected in the higher managerial ownership category with lesser or no agency problem respectively.

Back to column (2) – (5), no clear conclusion is shown for the managerial ownership less than 1 percent. However, the results of the rest somewhat are consistent with the hypothesis. The negative coefficients of multisegment dummy variable decrease from -0.71 , in managerial ownership between 1 percent and 10 percent, to -0.35 , in managerial ownership of more than 30 percent and the significant also decrease from t-statistic -2.99 (p-value = 0.00) to t-statistic -1.84 (p-value = 0.07). It implies the value loss of diversification is greater in firms with low managerial shareholdings than in firms with high managerial shareholdings. Nevertheless, the results still indicate that diversification contributes reduction in firm value since the coefficients of multisegment dummy variable are negative, on average, in any managerial ownership categories. At this point, it could be possible that such high level of managerial shareholdings can not absolutely eliminate agency problem but make such cost lessen only. Consequently, the cost from diversification remains outweighed its benefit.

C. Measuring Robustness Over Time

To enhance the accuracy and reliability of the outcomes as well as the robustness of the results over time, all the same approaches are also applied including

roughly matching the relation between only two concerning variables and reestimating the cross-sectional regression models with regarding on the other control variables. Data are selected as of year-end 1996 and 1998 which are adjacent to 1997, the base year.

1) *Considering the Relation between the Level of Diversification and Managerial Equity Ownership*

Panel A in Table VII reports the results similar to the 1997 outcomes in Table III. The patterns of both in 1996 and 1998 across groups are still not generally uniform. Furthermore, insignificant coefficient of ownership of officers and directors variable provides supporting evidence for the two variables are unrelated. Similarly, it is referred that the managerial ownership structure does not affect the propensity of diversification in Thailand. The main factors influencing the firm decision making for diversification remain the firm size and age. That is the larger and older firms trend to take the higher level of diversification which describe in the coefficients of 0.4639 ($t = 5.53$) and 0.3983 ($t = 6.73$) respectively.

2) *Considering the Relation between the Valuation Consequence from Diversification and Managerial Equity Ownership*

As described earlier, managerial ownership can not give clear explanation on diversification so it is not surprised that the results in Table VIII Panel A are inconclusive, neither are the results in Table V. However, regarding the coefficient of all sample groups in Panel B, the results both in 1996 and 1998 are parallel to the idea of value decreasing from diversification with the significant coefficients of -0.31 ($t = -3.39$) and -0.38 ($t = -3.29$) respectively. Although, these results suggest that diversification strongly reduce excess value in each of these sample years, there is little support for the effect of managerial ownership on the valuation consequences of diversification. In 1996, there is no solution for the managerial shareholdings less than

10 percent but the lesser negative coefficient from -0.64 , in managerial shareholdings between 10 to 30 percent, to -0.39 , in managerial shareholdings more than 30 percent, and reducing significant level of such coefficients refer to the higher managerial equity ownership firm that is confronted with the lesser value loss of diversification. In contrast, the results in 1998 are unclear for almost all managerial categories except the level between 10 to 30 percent. As a result, it is difficult to confirm the consistency over time with respect to the association between the effects of managerial ownership proportion on the value of diversification.



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Table VII

Robustness of the Relation between Managerial ownership and the Level of Diversification

The results are categorized into two parts, Panel A and Panel B. Panel A reports the overview of the relation between managerial equity ownership and the level of diversification. Panel B reports coefficient estimates from regression of the number of segments on managerial ownership and other control variables. The p-values are indicated below. The sample includes 288 observations in 1996 and 269 ones in 1998.

Panel A : Matching only two concerning variables, diversification measures and the managerial ownership structure								
Managerial Ownership Structure	1996				1998			
	Number of Firms	Number of Segments	Fraction with Multiple Segments	Diversification Index	Number of Firms	Number of Segments	Fraction with Multiple Segments	Diversification Index
less than 1%	72	1.78	0.39	1.16	63	1.84	0.41	1.12
1% <= own <= 10%	74	2.03	0.43	1.22	60	1.97	0.38	1.21
10% < own <= 30%	63	1.57	0.35	1.17	69	1.67	0.39	1.17
more than 30%	79	1.66	0.38	1.15	77	1.70	0.42	1.20
Panel B : Cross-sectional regression of the number of segments on managerial equity ownership and other control variables								
Independent Variables	1996		1998					
	Coefficient	p-value	Coefficient	p-value				
Intercept	-9.9927	0.0000	-9.0513	0.0000				
Ownership of officers and directors	-0.0009	0.8210	0.0022	0.5923				
Ln (assets)	0.4639	0.0000	0.3983	0.0000				
R & D dummy	0.1493	0.3509	0.1498	0.3441				
Ln (firm age)	0.5954	0.0000	0.7001	0.0000				
Number of analysts	-0.0197	0.4550	n.a	n.a				
Adjusted R ²	0.1653		0.1809					
Number of observations	288		269					

Table VIII
Robustness of the relation between Managerial Structure and the Value of Diversification

Panel A reports the valuation consequences from diversification in any managerial ownership classifications. Means of excess value are reported with medians below. Panel B reports coefficient estimates from cross-sectional regressions of excess value, following Berger and Ofek's (1995a) method, on a measure of diversification and other control variables as in Table VI. Only the coefficients on the multisegment dummy variable are reported with the p-value below.

Panel A : Excess value in any managerial ownership structure						
The percentage of Managerial Shareholding	1996			1998		
	Single Segment	Multiple Segment	P-value (difference)	Single Segment	Multiple Segment	P-value (difference)
less than 1%	-0.02	-0.19	0.3411	-0.07	-0.13	0.8001
	0.00	-0.12	0.2905	0.00	-0.07	0.9277
1% <= own <= 10%	-0.16	-0.20	0.8058	-0.06	-0.45	0.2040
	-0.12	-0.19	0.8915	-0.17	-0.36	0.2070
10% < own <= 30%	0.00	-0.41	0.0671	0.15	-0.19	0.1232
	0.00	-0.64	0.0525	0.00	0.06	0.2818
more than 30%	0.09	-0.31	0.0205	0.18	0.08	0.6675
	0.01	-0.27	0.0352	0.14	-0.03	0.6089
Panel B : Coefficient of Multisegment Dummy Variable with p-value below						
Managerial Ownership Categories	1996			1998		
All Firms		-0.3072			-0.3777	
		0.0008			0.0011	
less than 1%		-0.2042			-0.1827	
		0.3092			0.4933	
1% <= own <= 10%		-0.0777			-0.3461	
		0.6291			0.1897	
10% < own <= 30%		-0.6361			-0.6296	
		0.0040			0.0013	
more than 30%		-0.3854			-0.1781	
		0.0233			0.4377	

Chapter 5

Summary of the Study

This paper emphasizes on the agency problem which relates to corporate diversification. The recent researches abroad documented that the firms are unable to exploit such strategy efficiently and such strategy was the cause of firm value reduction as well. As far as agency problem concerned, diversification, which is the value decreasing strategy, is still widely used due to the managerial private benefits. This conflict of interest is one of the significant issues that the firms should carefully regard. The mismatching between the firms' strategy and their status could cause the organization failure. On this matter, this paper makes an observation whether diversification creates value loss to firm and such agency problem characteristic seriously occurs within Thai corporates. All observations are selected from firms registered in SET during 1997 as the base year. The study also includes the consistency of the results over time; consequently, all approaches used in 1997 are recalculated in the adjacent years, 1996 and 1998 as well. The empirical test in Thailand indicates that managerial ownership structure does not affect the propensity of diversification policy. Making such decision is positively contingent upon the firm size and age. Furthermore, this result holds over time as well as after controlling for other necessary factors which could account for the level of diversification. However, this paper finds that, on average, the cost of diversification exceeds its benefit but there is unclear evidence supporting that such value loss from diversification is associated with managerial equity ownership structure. The results from each subsample show nearly monotonically decreasing in value loss when the percentage of managerial shareholdings increases but unfortunately, such outcomes do not have robustness over time. Additionally, this research clarifies although higher managerial shareholdings, which imply to lesser in agency problem, are able to diminish the value loss, it is not eliminated. And such decreasing in value loss is insufficient to reverse diversification to be the valuable one. In summary, the empirical test in Thailand identifies that diversification remains destroyed firm value due to the agency costs of the firm. At this point, if all stakeholders

of the firm sincerely render their full cooperation in clearing out all conflicts of interest, diversification strategy is then worth creating the benefits to firm value and automatically increasing the efficiency of organization operating as well.

This paper, however, has some constraints in collecting information. According to the diversification concept used in this study, the parent firm's investment on the subsidiary firms at the rate of 20 percent upwards and 50 percent upwards are taken into account. The parent firm whose investment on the subsidiary firms of 20 percent upwards or called parent firm's diversification do not need to disclose its subsidiary firms' general information such as assets, sales, profits and other related data to public while that of 50 percent upwards, according to the regulation, must declare such information of its subsidiaries to public by submitting its report to the Stock Exchange of Thailand. Therefore, information on the subsidiaries whose 20 percent to 50 percent shares held by parent firm is scarce and affects the adjusted consolidated sale. In preparing consolidated profit and loss statement, the consolidated sale is calculated by summing the parent firm's sale and its subsidiaries' sales and subtracting the transaction between companies. Practically, the parent firm voluntarily declares only sales of its 20 percent to 50 percent shareholdings subsidiaries but not sale transaction between companies. It then becomes the constraints of this study but, on average, such transaction data are in the very small amount comparing to that of the sales. At this point, the transaction is disregarded in this paper. Consequently, the result is an approximated value rather than an exact one. However, the interpretation of the result is not significantly bias since this methodology is applied in every sample firm and it is the standard calculating means used in this paper.

Suggestion for Policy Making

In the future, if there is a regulation which requires the parent firm to also give the transaction information, it would be very helpful in providing the most accurate data for further studies. In this case, the researchers need to be circumspect since the

procedure in adjusting the transaction and sales is rather complicated. Additionally, if the Stock Exchange of Thailand's policy requiring the parent firm's disclosure of its segment sales becomes effective, the data used for computation would be more reliable and accurate. However, the Stock Exchange of Thailand must clarify the definition of "segment" stated in this policy to the firms in order that the information preparation lies on the same standardization. In summary, the effectiveness and accuracy of data helps enhance further studies on this topic to be of great beneficial to the organization since it encourages all stakeholders of the firms to devotedly provide their cooperation in correcting the right point of problem.



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References

- Amihud, Yakov, and Baruch Lev. 1981. Risk reduction as a managerial motive for conglomerate mergers. Bell Journal of Economic 12: 605-617.
- Berger, Phillip G., and Eli Ofek. 1995a. Diversification's effects of firm value. Journal of Financial Economics 37: 39-65.
- Chandler, Alfred D.. 1977. The Visible Hand (Belknap Press, Cambridge, Mass.).
- Comment, Robert, and Gregg A. Jarrell. 1995. Corporate focus and stock returns. Journal of Financial Economics 37: 67-87.
- David J. Denis, Diane K. Denis, and Atulya Sarin. 1997. Agency Problems, Equity Ownership, and Corporate Diversification. Journal of Finance 52: 135-160.
- Harris, Milton, C. H. Kriebel, and Artur Raviv. 1982. Asymmetric information, incentive, and intrafirm resource allocation. Management Science 28: 604-620.
- Jensen, Michael C.. 1986. Agency cost of free cash flow, corporate finance, and takeovers. American Economic Review 76: 323-329.
- Jensen, Michael C., and Kevin J. Murphy. 1990. Performance pay and top management incentives. Journal of Political Economy 98: 225-264.
- Lang, Larry H. P., and Rene' M. Stulz. 1994. Tobin's q, corporate diversification and firm performance. Journal of Political Economy 102: 1248-1280.
- Lewellen, Wilbur. 1971. A pure financial rationale for the conglomerate merger. Journal of Finance 26: 521-537.
- Lewellen, Wilbur G., Claudio Loderer, and Ahron Rosenfeld. 1989. Mergers, executive risk reduction, and stockholder wealth. Journal of Financial and Quantitative Analysis 24: 459-472.
- Majd, S., and Stewart C. Myers. 1987. Tax asymmetries and corporate income tax reform, in: Martin Feldstein, ed.. Effects of Taxation on Capital Accumulation (University of Chicago Press, Chicago, Ill.).
- Rajan, Servaes, and Zingales. 2000. The Cost of Diversity : The Diversification Discount and Inefficient Investment. Journal of Finance 55: 35-80.
- Servaes, Henri. 1996. The value of diversification during the conglomerate merger wave. Journal of Finance 51: 1201-1225.

Shleifer, Andrei, and Robert Vishny. Large shareholder and corporate control. Journal of Political Economy 94: 461-468.

Shleifer, Andrei, and Robert Vishny. 1989. Managerial entrenchment: The case of manager-specific investments. Journal of Financial Economics 25: 123-139.

Stulz, Rene' M.. 1990. Managerial discretion and optimal financing policies. Journal of Financial Economics 26: 3-27.



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Bibliography

- Anderson, Ronald C., and D. Scott Lee. 1995. Ownership studies: Does the data source matter?. Working paper, Texas A&M University.
- Berger, Phillip G., and Eli Ofek. 1996. Bustup takeovers of value-destroying diversified firms. Journal of Finance 51: 1175-1200.
- Berger, Phillip G., and Eli Ofek. 1995b. Causes and effects of corporate refocusing programs. Working paper, New York University.
- Bhagat, Sanjai, Andrei Shleifer, and Robert Vishny. 1990. Hostile takeovers in the 1980s: The return to corporate specialization. Brookings Paper on Economics 20: 267-292.
- Fama, Eugene F.. 1980. Agency problems and the theory of the firm. Journal of Political Economy 88: 288-307.
- Hart, Oliver D.. 1983. The market mechanism as an incentive scheme. Bell Journal of Economics 14: 366-382.
- Jensen, Michael C., and Richard Ruback. 1983. The market for corporate control: The scientific evidence. Journal of Financial Economics 11: 5-50.
- John, Kose, Larry H. P. Lang, and Jeffrey Netter. 1992. The voluntary restructuring of large firms in response to performance declines. Journal of Finance 47: 891-918.
- John, Kose, and Eli Ofek. 1995. Asset sales and increase in focus. Journal of Financial Economics 37: 105-126.
- Kaplan, Steven, and Michael S. Weisbach. 1992. The success of acquisitions: Evidence from divestitures. Journal of Finance 47: 107-138.
- Liebeskind, Julia P., and Tim C. Opler. 1994. Corporate diversification and agency costs: Evidence from privately held firms. Working paper, Ohio State University.
- Matusaka, John G.. 1993. Takeover motives during the conglomerate merger wave. Rand Journal of Economics 24: 357-379.
- Matusaka, John G.. 1995. Match-seeking: A dynamic theory of corporate diversification. Working paper, University of Southern California.
- May, Don O.. 1995. Do managerial motives influence firm risk-reduction strategies? . Journal of Finance 50: 1291-1308.

- McConnell, John J., and Henri Servaes. 1990. Additional evidence on equity ownership and corporate value. Journal of Financial Economics 26: 595-612.
- McConnell, John J., and Henri Servaes. 1995. Equity ownership and the two faces of debt. Journal of Financial Economics 39: 131-157.
- Mitchell, Mark L., and J. Harold Mulherin. 1994. The impact of industry shocks on takeover and restructuring activity. Working paper, University of Chicago.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny. 1998. Managerial ownership and market valuation: An empirical analysis. Journal of Financial Economics 20: 293-315.
- Ofek, Eli. 1993. Capital structure and firm response to poor performance. Journal of Financial Economics 34: 3-30.
- Shin, Hyun-Han, and Rene' M. Stulz. 1995. An analysis of divisional investment policies of diversified firms. Working paper, Ohio State University.
- Shleifer, Andrei, and Robert Vishny. 1991. The takeover wave of the 1980s. Journal of Applied Corporate Finance 4: 49-56.
- Shleifer, Andrei, and Robert Vishny. 1992. Liquidation values and debt capacity: A market equilibrium approach. Journal of Finance 47:1343-1366.
- Weisbach, Michael S.. 1995. CEO turnover and the firm's investment decisions. Journal of Financial Economics 37: 159-188.
- Weston, J. Fred. 1970. The nature and significance of conglomerate firms. St. John's Law Review 44: 66-80.
- Williamson, Oliver E.. 1986. Economic Organization: Firms, Markets and Policy Control New York: (New York University Press).



Appendices

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Appendix A

Definition of sector

1. Agribusiness

Business of which the main income is earned from plantation, forestry and forestry products, livestock, farm, veterinary, abattoir and abattoir management, storage, processing, procurement, sale, import, export, sale agents for plant, cereal, vegetables, fruit, flowers livestock, livestock products, fishery, sea animal products, animal food, animal food ingredients, medical treatment for animals, food substance for plants and its mix, rubber plantation and planting management, the production from rubber juice, rubber sheet and rubber sheet processing. Business on chemical fertilizer and pesticide as well as on fiber plants is excluded.

2. Banking

Business of which the main income is earned from ant activities operated under the Commercial Bank Act and other relevant laws including those the same category established under special law.

3. Building and Furnishing Materials

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, and distributing agents for building materials, interior and exterior furnishing materials, sanitary equipment and accessories, water system equipment, various kind of glass, other building and furnishing materials of any elements. Business on electricity and electronic is excluded.

4. Chemical and Plastics

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export, and sale agent for

chemical solution, chemical product, chemical product processing, intermediate and final chemical product, any materials produced from chemical products, fertilizer, pesticide, initial state of plastic, resin, raw material to be used in producing basic plastic and resin, any products of resin.

5. Commerce

Business of which the main income is earned from procurement, wholesale, retail, import, export or sale agent for various goods with no specific kinds or groups of goods and no bias on any kinds or groups of goods in particular.

6. Communication

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for telecommunication equipment such as telephone, FAX, teletype, traffic light system including parts, spare parts, and components of such equipment, services and advice for the telecommunication.

7. Electrical Products and Computer

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for home electrical appliances, electrical appliances for office and industrial use, other electrical equipment, computer, accessories of the aforementioned equipment and relevant services.

8. Electronical Components

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for electronical equipment and components including parts, spare parts and accessories of such goods.

9. Energy

Business of which the main income is earned from surveying, or hire surveying of energy resources, drilling, finery, manufacturing, hire manufacturing, distribution, import / export and sale agent for crude-oil, natural gas, coal, other forms of natural petroleum, fuel, cooking gas, other kinds and types of petroleum products, engineering services and consults on energy.

10. Entertainment and Recreation

Business of which the main income is earned from activities on sports fields, sport and recreation club (not as part of a hotel or a place to stay), restaurant and entertaining place, social club including activities of which the main income earned from manufacturing, hired-manufacturing, management, distribution, import / export, re-export, sale agent for sports equipment, field components, competition, media for performance and exhibition of arts / culture and entertainment; theatre and place of exhibition of arts, culture and entertainment. No advertisement is involved.

11. Finance and Securities

Business of which the main income is earned from activities operated under the Act of Finance and Securities and Credit Foncier and other relevant laws including other activities of the same category established under special laws.

12. Foods and Beverages

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, or sale agent of food products, ingredients for foods and beverages.

13. Health Care Services

Business of which the main income is earned from medical services, dentistry and public health, sale agent for medical tools and equipment including parts, spare parts and accessories of such equipment.

14. Hotels and Travel Services

Business of which the main income is earned from management and distribution, managing and distributing agent as well as giving services on travel; organizing conference, exhibition, travelling program and lodging, providing and making reservation for accommodation, arrangement on hotel and lodging (hotels or lodging may have sports field or sports and recreation club).

15. Household Goods

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for the household goods, kitchen wares, kitchen equipment and accessories, toys, souvenirs, home and building decorations, furniture of all kinds of materials; except business on electrical and electronical equipment and machinery.

16. Insurance

Business of which the main income is earned from activities operated under Act of Insurance Against Loss, Life Insurance Act and relevant laws including activities in the same category established under special law.

17. Investment Companies

Business of which the main income is earned from shareholding, investment, joint-venture, business agent of affiliated companies or of other companies including venture capital business.

18. Jewelry and Ornaments

Business of which the main income is earned from cutting and processing raw jewelry and valuable metal, manufacturing, hired-manufacturing settings and forms, procurement, distribution, import / export, re-export or sale agent for jewelry, valuable metal, ornaments produced from jewelry, valuable metal and other materials.

19. Machinery and Equipment

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for all sizes of machinery, light and heavy machine propellant engine operated by power or fuel, including components, spare parts and accessories of these goods.

Additionally, business in this category includes those of which the main income earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for the products produced or processed from metal. Such goods are neither building and furnishing materials, household equipment nor vehicle's components.

20. Mining

Business of which the main income is earned from mineral resource survey, mining, mining management, smeltery, manufacturing, hired-manufacturing, distribution, import / export, and sale agent for ores, ore products, raw jewelry except those of energy.

21. Packaging

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement for distribution, import / export, and sale agent for packaging components and materials or products to be used for producing packaging, container and packaging components.

22. Pharmaceutical Products and Cosmetics

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement for distribution, import / export, re-export and sale agent for medicine, medical substance, medical solution, any products for health and treatment, cosmetic and raw materials for such manufacturing except medical tools and equipment.

23. Printing and Publishing

Business of which the main income is earned from printing house and office, printing house and office management, manufacturing, hired-manufacturing, distribution, import / export and sale agent for books, journals, magazines, printing papers, daily and other periodical newspapers.

24. Professional Services

Business of which the main income is earned from giving services and facilities to corporates and public such as advertisement, personnel recruitment, security, auditory, accounting services and legal services.

25. Property Development

Business of which the main income is earned from contract for construction, land development, construction of housing, commercial building and condominium for sale, procurement distribution, leasing, hire purchase, sale agent and a go-between for land, housing, commercial building and condominium, giving advices on or services for architectural decorating and engineering construction and furnishing.

26. Pulp and Paper

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export, re-export or sale agent for pulp, paper and all products of paper including materials to be used in this manufacturing.

27. Textiles, Clothing and Footwear

Business of which the main income is earned from the fiber plants plantation, spinning, weaving, bleaching, dyeing fiber, thread and cloth, manufacturing, hired-manufacturing, procurement, distribution, import / export, and sale agent for natural fiber, synthetic fiber, fabric, cloths, clothing, products from fabric and shoes except business on toys, souvenirs and home decorations.

28. Transportation

Business of which the main income is earned from passenger and goods transportation by land, sea and air, vehicle leasing services, concession to construct express ways, roads, bridges with legal rights to collect toll for using these facilities.

29. Vehicles and Parts

Business of which the main income is earned from manufacturing, hired-manufacturing, procurement, distribution, import / export and sale agent for various vehicles, components, equipment, parts, spare parts, vehicle accessories and vehicle decorations produced from all kinds of material.

30. Warehouse and Silo

Business of which the main income is earned from undertake to delivery services, goods storage, goods depot leasing including other relevant services such as unloading goods etc.

31. Others

Business of which the main income is earned from other activities besides the above-mentioned ones.



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Appendix B

Table IX

Descriptive Statistics for the year 1996 and 1998

Descriptive Statistics of the 288 and 269 sample firms in the year 1996 and 1998. Data derives from I-SIM C.D. and 56-1 report. All Baht value is expressed in millions.

	1996				1998			
	Mean	Median	Minimum	Maximum	Mean	Median	Minimum	Maximum
Book value of total assets	7,079.44	2,374.90	248.14	179,784.96	8,851.23	2,345.28	285.01	311,490.34
Sales revenue	3,401.42	1,501.01	11.31	107,273.01	3,871.80	1,241.32	30.09	110,903.84
Adjust consolidated sales	3,925.79	1,635.11	11.31	107,273.01	6,342.79	1,375.25	30.09	550,433.67
Market value of equity	4,494.42	868.56	51.92	118,930.50	2,564.97	348.50	8.26	83,456.00
Total capital	8,972.90	2,530.64	230.78	234,476.56	9,181.94	2,290.32	108.22	290,676.88
Percentage ownership of officers and directors	18.51	9.13	0.00	88.90	18.64	11.79	0.00	88.20

Appendix C

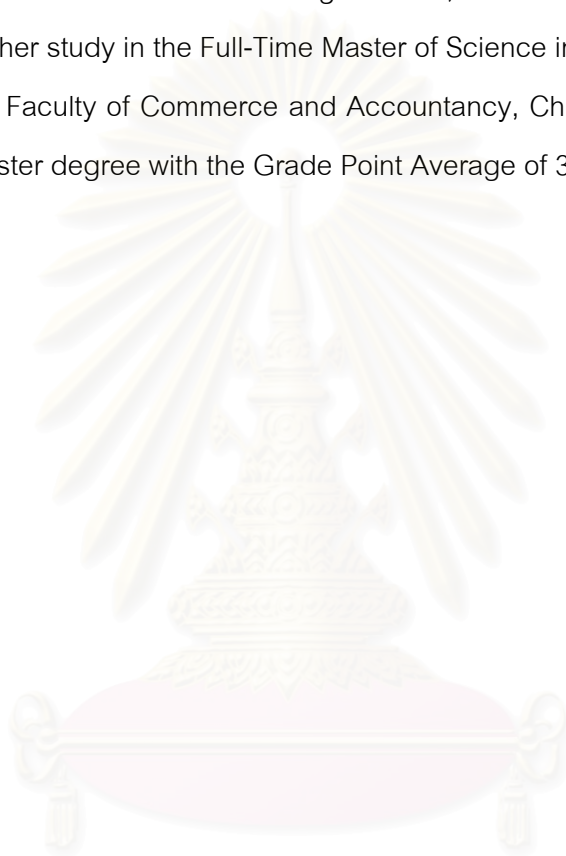
Table X

Descriptive Statistics for the Level of Diversification and Excess Value Measures of the year 1996 and 1998

	1996				1998			
	mean	median	minimum	maximum	mean	median	minimum	maximum
	Panel A : Measure of the level of Diversification				Panel A : Measure of the level of Diversification			
Fraction of multi-segment firms	0.39	n.a.	n.a.	n.a.	0.40	n.a.	n.a.	n.a.
Number of segments	1.76	1.00	1	12	1.78	1.00	1	10
Number of segments <u>excluding the non-diversified firms</u>	2.98	2.00	2	12	2.95	2.00	1	10
Diversification index	1.17	1.00	1.00	3.98	1.17	1.00	1.00	3.83
Diversification index <u>excluding the non-diversified firms</u>	1.45	1.20	1.00	3.98	1.43	1.20	1.00	3.83
	Panel B : Excess Value Measures				Panel B : Excess Value Measures			
Single-segment	-0.0197	0.0000	-2.3445	1.9700	0.0598	0.0000	-2.6310	3.5677
Multiple-segment	-0.2658	-0.2199	-2.4253	1.3312	-0.1506	-0.0836	-4.5195	2.9150
P-value (different)	0.0049	0.0056			0.0819	0.1468		

Biography

Miss Nawakan Kamphaeng was born on 21st January 1979 in Bangkok. In 1995, she took the tertiary education at the Faculty of Commerce and Accountancy, Thammasat University with Finance and Banking as the major subject and English as the minor one. In 1998, she graduated with a Bachelor degree of Business Administration and the Grade Point Average of 3.32, the Second Class Honors. In 1999, she then further her study in the Full-Time Master of Science in Finance Program (MS in Finance) at the Faculty of Commerce and Accountancy, Chulalongkorn University and received the Master degree with the Grade Point Average of 3.5 in the same year.



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