

Graduate School of Business

**Determinants of post-bankruptcy performance:
An empirical study of insolvent companies in Thailand**

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**This thesis is presented for the Degree of
Doctor of Business Administration
of
Curtin University of Technology**

November 2007

Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: _____

Date: _____

Acknowledgements

I would like to acknowledge and express my gratitude to my supervisors, Professor Robert Evans, the Director of the Graduate School of Business, Curtin University of Technology and Dr. Theo Christopher from the School of Accounting, Finance and Economics, Edith Cowan University. Their valuable suggestions, comments and reviews, kindness and support were extremely meaningful for this thesis.

I would like to express my sincere thanks to the academic staff of the Curtin Graduate School of Business who taught me during the first year of the Doctor of Business Administration (DBA) program (Associate Professor Des Klass, Professor Mohammed Quaddus, Professor Alma Whiteley, Associate Professor Peter Galvin and Dr. Patricia Morigan). Their teaching has been invaluable not only for developing the research, but also for my career.

I am grateful to the Director Judge of the Central Bankruptcy Court, Bangkok, Thailand who permitted me to collect the data for study. I am also thankful to the Legal Court Officers for their services to me over the months of data collection.

I would like to acknowledge the Dhurakij Pundit University (DPU), Bangkok, Thailand for their financial support, Professor Boonserm Weesakul, Associate Professor Varakorn Samakoses and my colleagues for their help and support. I also wish to thank friends in Perth for making my stay in Western Australia memorable.

Special thanks go to my beloved family in Thailand. Their patience and understanding, especially words of encouragement, have inspired me throughout my long research journey.

Importantly, I would like to dedicate this thesis to my late mother and father for their love and all they have done for me. Thank you for being great parents. Finally, I would like to thank God for allowing me to fulfill this special purpose.

Abstract

This thesis examines determinants of post-bankruptcy performance by using insolvent firms under the bankruptcy reorganization proceedings of the 1940 Thai Bankruptcy Act. The purpose of the study is to investigate whether the key governance mechanisms within this process are factors which may contribute to successful reorganization and how they affect a firm's post-bankruptcy performance. Using agency theory, a sample of 111 filing companies whose plans have been confirmed by the Thai Central Bankruptcy Court during 1999-2002 provide the data of the study. Descriptive statistics and ordinary least squares regression analysis are employed for data analysis.

The results indicate that among three types of governance mechanisms in the bankruptcy reorganization process, namely, monitoring, incentive and restructuring mechanisms, monitoring and incentive mechanisms are significant determinants of a firm's post-bankruptcy performance. The key monitoring mechanism is ownership concentration of common shares held by the largest shareholder, whereas the critical incentive mechanisms are cash compensation for the plan administrator and percentage of common shares held by the plan administrator. Asset restructuring is statistically insignificant but positively links to post-bankruptcy performance. The results indicate that these mechanisms can mitigate agency problems of insolvent companies and increase post-bankruptcy performance over a three year period.

Key words: agency theory, bankruptcy reorganization, corporate governance, post-bankruptcy performance, Thailand

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Chapter 1

Introduction

1.1 Background to the study

In the event of bankruptcy, reorganization through the court is viewed as a strategic tool for resolving financial distress of insolvent companies (Moulton & Thomas 1993). It gives these companies an opportunity to restructure their assets, operations, liabilities and other obligations, enabling them to return to normal business operations and sound financial health (Bradley & Rosenzweig 1992; White 1989). In comparison to out-of-court reorganization - workouts, this legal process has become increasingly important since previous studies found that bankruptcy reorganization can overcome the holdout problems among creditors and mitigate information asymmetries between conflicting parties (Brown 1989; Chatterjee, Dhillon & Ramirez 1995; Gertner & Scharfstein 1991; Gilson, John & Lang 1990; Li & Li 1999; Roe 1987; Schwartz 1993). After the 1997 Asian economic crisis, it has been widely used in both Western and Asian countries around the world (Armstrong & Riddick 2000; Frankel 2003; Urapeepatanapong, Sethsathira & Okanurak 1998; Vongvipanond & Wichitaksorn 2004).

Evidence from empirical studies has shown that when firms face financial trouble, they prefer to choose bankruptcy reorganization to negotiate with a firm's creditors rather than liquidation (Berkovitch & Israel 1991; Denis & Rodgers 2002). The reason is the legal process allows debtor firms to continue managing their business and receive court protection from creditors' actions to exercise control over the property of a debtor. Creditors are unable to take action against the debtor during this period. The bankruptcy reorganization proceedings provide provisions, such as automatic stay, creditors' voting procedure and many rules relating to a plan of reorganization that facilitate insolvent firms to improve their financial stability.

However, some previous researchers have argued that the bankruptcy reorganization process is not the best filtering mechanism to provide firms the opportunity to reorganize. The process attracts all insolvent firms - both economically viable and nonviable firms to reorganize, even though nonviable firms should liquidate (Chatterjee, Dhillon & Ramirez 1996; Mooradian 1994; Routledge & Gadenne 2000; White 1994). Moreover, there is no set process that ensures success of the formal reorganization process (Denis & Rodgers 2002; Fisher & Martel 2003; Routledge & Gadenne 2000). There are many factors relating to successful bankruptcy reorganization such as the recontracting framework (Frank & Torous 1989), investment decisions (Gertner & Scharfstein 1991), debtor-in-possession (DIP) financing (Chatterjee, Dhillon & Ramirez 2004), the ability of the planner to establish a plan (Michel, Shaked & McHugh 1998), the accurate selection of restructuring methods (Datta & Datta-Iskandar 1995; Hotchkiss 1994), the feasibility of the reorganization plan which is associated with realistic projections (Michel et al. 1998) and the capability of the plan administrator to oversee business operations of an insolvent firm during the period of distress (Pornavalai 1998; Urapeepatanapong et al. 1998). It appears that successful rehabilitation is complex and needs substantial effort to deal with a distressed company's financial problems.

Previous researchers have attempted to find which factors are crucial to successful reorganization, but there has only been limited research examining the relationship between outcomes of the bankruptcy reorganization process and governance factors (e.g., board composition and equity ownership) of bankrupt firms (Daily 1995, 1996; Daily & Dalton 1994a; Gales & Kesner 1994). There is still doubt whether the mechanisms of the bankruptcy reorganization process only facilitate more opportunity for recovery of insolvent companies or enable an increase in overall financial performance. Thus, the present study will contribute to this investigation of determinants of post-bankruptcy performance of insolvent companies in Thailand.

1.2 Research question and objectives

As suggested by agency theory, this study will use monitoring, incentive and restructuring mechanisms to explain a firm's post-bankruptcy performance (Agrawal

& Knoeber 1996; Fama & Jensen 1983; Jensen & Meckling 1976; Keasey, Thompson & Wright 1997). The aim of the study is to investigate the effectiveness of governance mechanisms in the Thai bankruptcy reorganization process, that is, whether these can support a firm's post-bankruptcy performance to achieve the reorganization plan. The primary research question is:

How do the key governance mechanisms in the bankruptcy reorganization proceedings affect a firm's post - bankruptcy performance?

Based on the primary research question, the main governance mechanisms in the reorganization proceedings and a firm's actual post – bankruptcy performance during the first three-year period of rehabilitation will be investigated. The research objectives of the study are:

1. To examine the existing key governance mechanisms in the Thai bankruptcy reorganization proceedings from an agency perspective.
2. To examine the impact of the key governance mechanisms in the Thai bankruptcy reorganization proceedings on a firm's post-bankruptcy performance over a three year period.

1.3 Significance of the study

The results of this study are significant to regulators, debtor firms, creditors, shareholders and investors who are related to and may be impacted upon during the bankruptcy reorganization process. This research will extend and supplement prior research in this area by providing a unique contribution to the growing literature on agency theory in a number of directions.

First, this study will extend and adapt Agrawal & Knoeber's (1996) work by examining the effect of monitoring, incentive and market mechanisms of the bankruptcy reorganization process on a firm's post-bankruptcy performance.

Second, much previous research attempted to evaluate the total efficiency of mechanisms in the process by measuring post-bankruptcy performance in various ways, including the percentage of firms emerging from bankruptcy, accounting performance, cash flow performance compared with financial projections of the reorganization and stock performance (for example, the studies of Morse & Shaw (1988), Hotchkiss (1995) and Alderson & Betker (1999)). These measures produced mixed results and this study will adopt a new measure of post-bankruptcy performance.

Third, there has been minimal research investigating governance patterns in a bankrupt firm. Thus, the current study will attempt to extend research in this area by investigating governance mechanisms of the bankruptcy reorganization process implemented in Thai bankrupt firms.

Fourth, most previous studies used public companies which had traded in a national stock exchange for analysis. There is very little information on empirical studies regarding unlisted companies. Thus, this study will contribute through the investigation of both listed and unlisted bankrupt companies.

Fifth, limited prior research in this area has been undertaken in Asian countries; the current study will investigate the effectiveness of mechanisms in the formal reorganization process in Thailand.

The study will have relevance for decision-makers including debtor firms, creditors, shareholders, financial consultants, planners and plan administrators, the bankruptcy court and the official receiver as regulators. It will investigate important monitoring and incentive mechanisms of agency theory including outside directors, ownership concentration, prevalence of managerial remuneration, and restructuring methods in the Thai bankruptcy reorganization proceedings. The results will inform all parties about the quality and direction of mechanisms and their relationship with a firm's post-bankruptcy performance. This will assist decision-makers to understand more clearly the control mechanisms in the bankruptcy reorganization of Thai insolvent companies and may result in their being able to make better decisions in dealing with financial distress.

The results of the study will be important for understanding the effectiveness of the rules and regulations in the Thai bankruptcy reorganization process. The study aims to identify significant mechanisms of the process that enhance post-bankruptcy performance, which may enable regulators and other parties to gauge which regulations are efficient and should be retained or improved. Overall, the results will show the efficacy of the bankruptcy reorganization process and as a consequence, debtor firms, creditors, shareholders and related parties may have more confidence in the likely outcomes when employing this law to resolve their financial problems.

1.4 Organization of the thesis

The thesis contains seven chapters including the introduction. This chapter has provided the background to the study and addressed research question and objectives. It also elaborates on the significance of the study.

Chapter 2 reviews previous research concerning bankruptcy reorganization and post-bankruptcy performance including the literature of the Thai bankruptcy reorganization proceedings. Its objective is to investigate important mechanisms of the Thai process and seek the critical factors of a firm's post-bankruptcy performance.

Chapter 3 describes the theoretical framework of agency theory, the research model and hypothesis development. It presents the research paradigm of the study and then explains a model of agency theory and its governance mechanisms that aim to control agency problems and improve firm value. It examines previous studies concerned with the effects of governance mechanisms on a firm's post-bankruptcy performance and selects those of relevance to the present study.

Chapter 4 presents the research methodology. It provides definitions of the technical terms of the Thai reorganization proceedings and variable measurement of all variables of the study. It also describes data sources, sample selection, data collection methods and statistical analysis to be undertaken.

Chapters 5 and 6 report the results of the study and address the research question and objectives of Chapter 1. Chapter 5 describes the features of all the variables of the study and their inter-relationship with the view to highlighting the key mechanisms impacting on success in reorganization and the recovery rate of bankruptcy reorganization.

Chapter 6 focuses on the predictors of a firm's post-bankruptcy performance and the impact of governance mechanisms of the bankruptcy reorganization process on a firm's post – bankruptcy performance. A discussion of the main assumptions of univariate statistical analysis and ordinary least squares multiple regression analysis is also provided.

Finally, Chapter 7 contains a summary of the study and the implications of the research findings, describes its limitations and offers suggestions for future research.

Chapter 2

Literature review

2.1 Introduction

This chapter reviews previous research to investigate important mechanisms for the bankruptcy reorganization proceedings and the critical factors impacting on post-bankruptcy performance. It is divided into two sections. Section 2.2 presents a general review of the literature regarding bankruptcy reorganization and post-bankruptcy performance while Section 2.3 describes the literature specific to the Thai bankruptcy reorganization process and its key governance mechanisms.

In Thailand, reorganization is an extensive alteration of a financially distressed firm regarding capital, organizational and management structure following a plan worked out during the reorganization proceedings under the Bankruptcy law. The objectives of reorganization are to eliminate the cause of the failure, settle with creditors and allow the firm to remain in business (Ross, Westerfield & Jordan 2000). Legally, there are two alternatives for firms which have filed for bankruptcy; liquidating and reorganizing. Liquidation is the process of winding up the operation of firms that are not viable whereas bankruptcy reorganization provides for rehabilitating the debtor. The reorganization process involves the debtor, who is known as the debtor-in-possession (DIP) or incumbent manager, remaining in possession of his or her property and developing a plan to generate funds, while the business's debts are restructured in order to allow the debtor to continue business operations. It enables valuable firms to improve and continue their operations by providing several mechanisms for ensuring that these firms can emerge from bankruptcy adequately (Brigham & Houston 2001; White 1989).

2.2 Bankruptcy reorganization and post-bankruptcy performance

In an attempt to investigate the practical worth of the bankruptcy reorganization process, a great deal of research has been undertaken. A summary of the major empirical studies relating to the bankruptcy reorganization proceedings is shown in Table 2.1. A literature review of previous research is given in the following sections.

2.2.1 Measures of success in the bankruptcy reorganization process

Initial studies of outcomes of bankruptcy reorganization were focused on an examination of a number of insolvent firms emerging from the reorganization process. Morse and Shaw (1988) studied the effect of the 1978 Bankrupt Reform Act by examining the proportion of US bankrupt firms that were reorganized or liquidated before and after the 1978 Act between 1973 and 1982 and found that of 162 firms that filed for Chapter 11 bankruptcy reorganization¹, 98 firms, 60%, had survived as independent companies and 11 firms, 7%, reorganized through a merger. Weiss (1990)'s study, however found 95 percent of 37 sample firms from 1979 to 1986 emerged from the process successfully but the sample was small.

Later, Moulton and Thomas (1993) tried to find the effectiveness of the process by classifying the reorganization outcomes into four categories; 1) successful reorganization, 2) partially successful reorganization, 3) mergers and acquisitions, and 4) liquidation. According to their definitions, successful reorganization means firms emerging from the reorganization process which maintain the original corporate identity, continue as publicly traded firms, and have assets after reorganization of more than 50 % of its pre-bankruptcy levels. Partially successful reorganization, however, is defined as emerging firms that fail to meet one or more of the qualifications of the first group. Mergers and acquisitions are emerging firms.

¹ In this study, Chapter 11 bankruptcy reorganization or Chapter 11 bankruptcy reorganization proceedings or Chapter 11 means Chapter 11, the bankruptcy reorganization proceedings of the U.S. Bankruptcy Code.

Therefore through mergers and acquisitions, the emerging firm is acquired by the existing firms. The last is the group of liquidating firms. Although their results were in line with the study of Morse & Shaw (1988), 44 of 73 sample firms, 61 %, emerged from bankruptcy but only 6 achieved successful reorganization and 12 firms attained partially successful reorganization while the remainder were mergers and acquisitions. Importantly, they found some reorganized firms remained weak and continued to decline. Hotchkiss's (1994, 1995) studies confirmed these results. She examined post-bankruptcy performance of reorganized firms in terms of accounting profits and a firm's ability to meet cash flow projections of the reorganization plan and found that the performance that emerged from Chapter 11 bankruptcy reorganization proceedings was significantly negative.

Hotchkiss's results in 1994 showed that nearly 40 percent of firms continued to experience operating losses within the two years following bankruptcy and more than 16 percent of the sample failed a second time. Firms emerging were not viable and needed further restructuring. A substantial number of these firms provided little evidence that the bankruptcy reorganization process effectively rehabilitated distressed firms. Hotchkiss's study in 1995 also provided support for this view. She documented the operating performance of firms emerging from Chapter 11 over the period 1979-1988. The findings showed that more than 40 percent of the firms continued to experience operating losses in the three years after emergence and 32 percent subsequently filed for bankruptcy again. The median industry-adjusted operating performance was negative. The median forecast errors between actual post-bankruptcy performance and projected performance in each year were also negative and significantly different from zero. Firms in the sample often failed to meet the cash flow projections prepared. From these results, she concluded that firms filing for Chapter 11 continued to perform poorly during a five-year period following reorganization.

Alderson and Betker (1999) in a similar approach to Hotchkiss (1995) on the accounting measures of performance, evaluated the operating performance of 62 sample reorganized firms from 1983-1993 for the first three years following emergence from bankruptcy. They found that during each of the three fiscal years following emergence from bankruptcy reorganization, at least 60% of the firms with

available information reported operating profit margins that fell below the median level for the industry. They concluded that their findings were similar to Hotchkiss's (1995) study i.e. that the majority of firms exhibited poor accounting performance. Consistent with these results, an investigation by Maksimovic and Phillips (1998) also confirmed that the mechanisms of Chapter 11 bankruptcy reorganization proceedings cannot enhance insolvent firms to reorganize efficiently.

Alderson and Betker (1999) tried to investigate another type of post-bankruptcy performance by refocusing their analysis on the post-bankruptcy cash flows provided by the firm. They explained that a firm which emerges from bankruptcy must show that its reorganization plan is in the best interests of all claimants. Thus, in their method, they used data from cash flow statements creating net cash flows paid to all claimants and then calculated an annualized return. They compared the annualized return on the reorganized firm with the annualized return on Standard & Poor (S&P)'s 500 index. The results showed that the total cash flow returns for their samples were significantly higher than the returns on the S&P 500 index. Obviously, the results of analyzing cash flow performance are different from the results of analyzing accounting performance.

The evidence from Japan of Eisenberg & Tagashira's (1994) study argued that reorganized firms under the Japanese bankruptcy reorganization proceedings in 1982 – 1987 could create firm value. Daily (1995) also tried to reinvestigate its effectiveness by using the four bankruptcy reorganization outcomes of Moulton & Thomas (1993). Daily (1995)'s results suggested that 79% of sample firms could survive and continue business operations efficiently even though some of them needed to merge with other companies. Further, the findings of reexamining the effectiveness of the process by Platt and Platt (2002) asserted that post-bankruptcy performance of sample emerging firms as measured by abnormal returns and forecast errors in both operating and net income were relatively strong. Only 20% of the sample received negative operating income after emerging from bankruptcy. Kalay, Singhal and Tashjian (2007) also examined whether firms filed for bankruptcy reorganization improve their operating performance during Chapter 11. They found that firms with higher ratios experienced greater improvements in operating

performance and concluded that Chapter 11 provided net benefits to their sample firms.

Hubbard and Stephenson (1997) investigated stock prices of 68 bankrupt firms that submitted reorganized plans during the period 1988-1993 and found that on average, during the reorganization, the market price of stocks in their sample was higher than the price that the shareholders expected to receive under the reorganization plan. Eberhart, Altman and Aggarwal (1999) also checked equity performance of emerging firms between 1980 and 1989 and found that the stock return performances of 131 sample firms were better than the market's expectation. Jayaraman, Sabherwal and Shrikhande (2001) considered recovery time and stock performance by a comparison of two companies in different countries (the US firms, the Colombia Gas system and the German firms, Metallgesellschaft). The results showed that country economic fundamentals made the post-reorganization performance of the US firms better than the performance of the German firms but the resolution time to emerge from bankruptcy of the US firms took longer than the German firms.

2.2.2 The critical factors influencing successful bankruptcy reorganization

Research studying the critical success factors include the institutional features of bankruptcy reorganization such as the recontracting framework and the automatic stay (Frank & Torous 1989; Gertner & Scharfstein 1991), DIP financing (Chatterjee, Dhillon & Ramirez 2004; Dahiya, John, Puri & Ramirez 2003), financial indicators (Chen 2003; Fisher & Martel 2003;), financial projections (Michel, Shaked & McHugh 1998; Platt & Platt 2002), refocusing and restructuring strategies (Datta & Iskandar-Datta 1995; Dawley 1999; Hotchkiss & Mooradian 1998;), and the efficiency of insolvent firms (Routledge & Gadenne 2000; White 1994). A review of this literature follows.

Frank and Torous (1989) attempted to investigate the institutional features of Chapter 11 bankruptcy reorganization proceedings in two applications; investment and financing decisions and found the recontracting process between creditors and stockholders in Chapter 11 can overcome the underinvestment problem. Gertner and

Scharfstein (1991) also studied investment in Chapter 11. Their model proved that underinvestment is likely to be a problem and Chapter 11 could be helpful. The option to file for Chapter 11 protection can increase the efficiency of investment. Mooradian (1994) built on Gertner & Scharfstein's (1991) work and believed that investment policy related to the maintenance of equity value. The bankruptcy code promotes bargaining in Chapter 11 bankruptcy reorganization proceedings among management, equity holders and debt holders. This allows stockholders to retain some valuable equity in the firm. According to Mooradian's (1994) simple model of a distressed firm, the bankruptcy reorganization process can reduce overinvestment for bad firms that file for Chapter 11 and allows more good firms to renegotiate with debtholders, reducing underinvestment. Chen, Weston & Altman's (1995) study also confirmed that the automatic stay of bankruptcy reorganization has the effect of extending debt maturity, thereby increasing the firm's ability to obtain new financing to make the investments required for its recovery.

Dahiya et al. (2003) studied the benefits of debtor-in-possession (DIP) financing in reorganized firms. Significantly, DIP financing was associated with a higher probability of emergence and a shorter time in bankrupt reorganization. There was little evidence indicating overinvestment of DIP financing. The findings suggested that it was helpful for investment in positive net present value projects of those firms. Consistent with these results, Chatterjee et al. (2004) also examined the effect of DIP financing on security prices. They considered DIP loans of sample firms by analyzing stock and bond prices and found that abnormal stock and bond returns at the announcement of DIP loans were significantly positive. Fayez and Meyer (2001) also found a positive and statistically significant impact of DIP financing on successful reorganization and a shortened duration under Chapter 11 bankruptcy reorganization proceedings. Much research accepted that DIP financing under Chapter 11 was valuable for a reorganized firm's future prospects (see Carapeto 2003; Chen, Weston & Altman 1995; Dhillon, Noe & Ramirez 1995; John 1993; John & Vasudevan 1996; John, John & Vasudevan 2000) However, there are arguments against DIP financing as some researchers have pointed out that this may influence managers to undertake risks by possibly investing in negative net present value projects. This may lead to overinvestment problems for firms in financial distress (Gertner & Scharfstein 1991; Triantis 1993).

Fisher and Martel (2003) examined the probability of reorganization by exploring the financial characteristics of reorganizing and liquidating firms filing for protection under the Bankruptcy Act. Their results showed that firms in reorganization had a mean asset/debt ratio of 57%, whereas firms in liquidation were in an even worse financial position with a mean asset/debt ratio of just 21 percent. The probability of reorganization increased with the level of free assets, the amount of debt reduction, and firm size, while it decreased with the firm's liquidation value. The results confirmed that the relative size of Crown (Government) claims, the legal form of the firm, and the asset/debt ratio are significant determinants of the reorganization decision. Chen (2003) also found the firm's financial structure was the important variable of a bankrupt firm to restructure its debt. Denis and Rodgers (2002, 2007) also examined reorganization success in the U.S.A. They used a sample of 224 Chapter 11 filings reported from 1985-1994. They related operating and financial characteristics to the decision to reorganize in Chapter 11 and measures of success following reorganization. The findings showed that the reorganization decision rather than selling a firm, whether piecemeal or as a whole, was related to the amount of restructuring methods done while in Chapter 11. Reorganization success was related to firm profitability measured as of the year-end just prior to Chapter 11 filing and to firm and industry profitability measured as of the year-end just prior to bankruptcy resolution. Importantly, the results also showed that reductions in assets and liabilities while in Chapter 11 were associated with reorganization success.

Michel et al. (1998) focused their research on evaluating the reliability of financial and operational projections that are a crucial part of a reorganization plan. They stated that the appropriate projections can explain the success of a firm's emergence from bankruptcy, therefore, the projections should not be overestimated. By investigating deviations between actual and projected performance of sample firms, their findings disclosed that the operational and financial projections that filing firms provided to the bankruptcy court prior to their emergence from Chapter 11 were frequently overstated. In a different approach, Gilson, Hotchkiss and Ruback (2000) used the market value of bankrupt firms to compare with estimates of value based on management's published cash flow projections. Their findings show that the ratio of estimated value to market value in the sample was very wide. It varies from less than

20% to greater than 250%. They pointed out that the reason for the variation in these errors were claimholders' incentives to overstate and understate the firm's value. In a similar manner, Platt and Platt (2002) also compared pro forma forecasts from the plan of reorganization with actual financial performance. They found that empirical evidence concerning the accuracy of operational and financial forecasts in reorganization plans were mixed. Large variance in forecast errors in both operating income and net income indicated that firms were inconsistent in their forecasting ability within their reorganization plan. However, the median forecast error for operating income was not significantly different from zero. Furthermore, median and mean forecast errors for net sales and net income were not significantly different from zero as well. This implied that on average, forecasts of reorganization plans were not significantly different from actual results.

Regarding turnaround strategy, the study found that a great deal of previous research suggested the utility of corporate refocusing and restructuring for improving post-bankruptcy performance (Dawley 1999; Dawley, Hoffman & Lamont 2002; Denis & Rodgers 2002; Hotchkiss 1994; Sudarsanam & Lai 2001). Dawley (1999) and Dawley et al. (2002) examined how the performance effects of refocusing or the reduction in the scope of a firm's business activities in the case of bankrupt firms. In their results, post-bankruptcy performance as measured by 3-5 year averages of industry adjusted return on assets (ROA), return on sales (ROS) and Altman's Z-score improved significantly in bankrupt firms that implemented this strategy. They suggested that refocusing was an effective bankruptcy management strategy. Similarly, much evidence confirmed that most bankrupt firms engaged in turnaround strategies, particularly, strategic restructuring methods. Hotchkiss (1994) examined the asset sale decision by large public companies that filed for Chapter 11 bankruptcy reorganization and found that abnormal announcement returns were positively related to the restructuring strategy. Datta and Iskandar-Datta (1995) also examined the restructuring strategy in four types – financial restructuring (i.e. extension of maturity, reduced interest rates), asset restructuring (i.e. divestitures, sale and leaseback) and governance restructuring (i.e. Chief Executive Officer (CEO) turnover, turnover in the boards) including labor recontracting (i.e. employee layoffs, wage concessions) before and during a Chapter 11 filing. They found that divestitures played a significant role in restructuring firms both before and after

filing. Consistent with Datta & Iskandar-Datta (1995), Sudarsanam and Lai (2001) also examined various types of restructuring strategy – managerial, operational, asset, and financial restructuring methods. They found that recovery firms preferred to choose investment and acquisition whereas non-recovery firms focused on operational and financial restructuring. Their results confirmed the efficiency of asset restructuring methods. Chatterjee et al. (1996) studied determinants of debt restructuring decision of financial distressed firms by examining the firms that undertook Chapter 11 bankruptcy reorganization, prepackaged bankruptcies, and workouts. They found that firms facing economic distress chose to file for bankruptcy reorganization, while economically viable firms used workouts and economically viable firms that faced immediate liquidity problems preferred prepackaged bankruptcies. A firm's debt restructuring decision depended on the degree of the firm's leverage, the severity of the liquidity crisis, the extent of the creditor's coordination, and the magnitude of the firm's economic distress.

To investigate the efficiency of insolvent firms, White (1994) examined bankruptcy as a screening mechanism by developing a game theoretic model of the interaction between the two corporate bankruptcy procedures, Chapter 11 - the reorganization proceedings and Chapter 7 - the liquidation proceedings². White's (1994) conclusions showed that Chapter 11 is not a perfect screening device; it encourages managers to reorganize when they should liquidate. The results are similar to the studies of other researchers (e.g., Chatterjee et al. 1996; Mooradian 1994; Routledge & Gadenne 2000). Mooradian's (1994) study also found that Chapter 11 procedure provided an incentive for inefficient firms to reorganize rather than mimic out-of-court restructurings. The procedure allowed firms that should be liquidated to continue operation. A significant proportion of firms filing for Chapter 11 were inefficient. In addition, Mooradian (1994) stated that economically viable firms file for Chapter 11 because it was the most effective mechanism for resolving the creditor's coordination problem. Chatterjee et al. (1996) confirmed that empirically, most firms filing for Chapter 11 were not economically viable. However,

² Chapter 7 – the liquidation proceedings in this study means Chapter 7, the liquidation proceedings of the U.S. Bankruptcy Code.

economically viable firms may choose a formal Chapter 11 bankruptcy to restructure their debt due to strategic reasons such as severe information asymmetries, and the need for funding. The advantages of Chapter 11 bankruptcy reorganization proceedings, according to Berkovitch and Israel (1991) were that creditors preferred to renegotiate under Chapter 11 rather than provide debt relief to firms facing overinvestments via a workout. Thus, when distressed firms faced an overinvestment problem, firms often opted for Chapter 11 bankruptcy reorganization over a workout. Routledge and Gadenne (2000) studied the model of successful/unsuccessful reorganization by using data of financially distressed companies in Australia. Their study was undertaken after Australia's insolvency law had offered a chance for distressed companies to reorganize their affairs by the introduction of voluntary administration as an alternative to liquidation. They stated that the insolvency law should provide an important filtering mechanism by providing the opportunity for inefficient firms to be liquidated. The law should be designed to ensure that only efficient firms reorganize. In their results, it appeared that the reorganization decision was biased towards permitting inefficient firms to reorganize.

2.2.3 The critical governance factors influencing successful bankruptcy reorganization

Research involving governance patterns includes board size and composition (Daily 1995; Daily & Dalton 1994a, 1994b; Gales & Kesner 1994), Chief Executive Officer (CEO) - board chairperson structure/CEO duality (Brockmann 1997; Brockmann, Hoffman, Dawley & Fornaciari 2004; Daily 1995), CEO turnover (Daily & Dalton 1995; Hotchkiss 1995), equity ownership (Daily 1996; Daily & Dalton 1994a; Kim 2006), and audit committee (Charitou, Lambertides & Trigeorgis 2007; Chen 2003; Daily 1996;). A review of this literature related to each pattern is as follows:

Gales and Kesner (1994) analyzed board of director (BOD) composition and size in bankrupt firms and found that at the time of bankruptcy, the BOD size of bankrupt firms was smaller than non-bankrupt firms but interestingly, the percent of outside directors in the board for bankrupt and non-bankrupt firms was almost the same (i.e. 54% vs. 55%). These results suggested that although corporate boards are

significantly affected by bankruptcy, outside directors still play an important role in monitoring management in bankrupt firms. Daily and Dalton (1994a, 1994b) also found BOD quality as a significant predictor of bankruptcy. They indicated that boards with many outsiders are more likely to be highly involved in performance improvement. Daily's (1995) findings also showed that the proportion of outside/independent directors were positively related to the success of reorganization. Daily (1995) confirmed the role of outside director members in the board of bankrupt firms and suggested that a board with a high proportion of outsiders was an effective board.

Daily and Dalton (1994a, 1994b) attempted to investigate board leadership structure particularly the structure of chief executive officer (CEO) - board chairperson positions in bankrupt firms while Daily (1995) tried to examine the relationship between board leadership structure and outcomes of the bankruptcy reorganization process. Daily and Dalton (1994a, 1994b) found that bankrupt firms in the sample have joint CEO - board chairperson structures and higher proportions of affiliated directors than the survivor firms. On the other hand, Daily (1995) found that CEO duality was not significantly associated with the success of the bankruptcy reorganization. Daily and Dalton (1995) extended their research to changes in leadership structure and found evidence supporting changes in CEO structure were toward a separate CEO and board chairperson. Further, Brockmann (1997) and Brockmann et al. (2004) found a significant impact of a separate CEO - board chairperson structure on bankruptcy reorganization. Bankrupt firms that have the incumbent CEO separated from the board chairperson position can reduce the reorganization time. However, they also found that CEO power - duality can increase the odds of survival. These results suggest that board leadership structures have significant influence on firms during bankruptcy reorganization.

In addition, Daily and Dalton (1995), who focused their research on CEO and director turnover in failing firms and its impact on board structure and composition in the 5-year period prior to bankruptcy, found that the rate of CEO and director turnover for the bankrupt firms was significantly different from the non-bankrupt control firms. These changes may lead to greater proportions of outside directors in the bankrupt firms. Hotchkiss (1995) also concentrated her study on management

turnover of firms under the reorganization process by investigating CEO replacements of firms emerging from bankruptcy. She found that 70% of sample firms had CEO turnover and these changes were significantly associated with high post-bankruptcy profitability. Consistent with these results, Charitou, Lambertides and Trigeorgis's (2007) findings also showed that top-level management turnovers in bankruptcy-filing firms can mitigate the negative abnormal returns during the distressed period.

Regarding equity ownership, Daily & Dalton's (1994a) study that used equity ownership by institutional investors, the officers and directors of a firm and holders of 5 percent or more as control variables for studying governance patterns in bankrupt firms, common stock holdings by institutional investors had a significant relation to profitability (net income divided by total assets) of these firms at $p < .05$ level. This was an interesting discovery that has become increasingly important in the area of bankruptcy reorganization. Later, Daily (1996) tried to investigate institutional equity holdings again as a monitoring mechanism of bankruptcy reorganization. However, Daily's (1996) results did not confirm the efficiency of this mechanism on successful reorganization. The relationship between equity holdings by institutional investors and a bankruptcy reorganization filing were not statistically significant. Contrary to Daily's (1996) results, the studies of Kim (2006) and Charitou et al. (2007) provided evidence suggesting that equity shareholdings by managers and institutional investors played a significant role in improving post-bankruptcy performance.

The audit committee is another governance pattern that Daily (1996) attempted to examine, i.e. the proportion of affiliated directors on an audit committee and the incidence of a bankruptcy reorganization filing for the 5-year period preceding the filing. The results did not find the significant relationship between the incidence of bankruptcy and the proportion of affiliated directors on a bankrupt firm's audit committee. Chen (2003) also investigated auditor's opinions as the proxy for the asymmetric information that may affect the choice between the Chapter 11 bankruptcy reorganization proceedings and workouts of distressed firms. The findings showed that Chapter 11 firms received more adverse opinions from the auditors than workout firms. These results suggested that firms that suffer from

severe problems in accounting report had only Chapter 11 as the choice for reorganization. Evidence from Charitou et al.'s (2007) research asserted that qualified audit opinions during bankruptcy reorganization were important and affected the quality of earnings and the level of abnormal returns.

2.2.4 Related Thai research

In Thailand, many previous studies have been undertaken on private workouts rather than restructuring via a legal reorganization procedure (Claessens, Djankov & Klapper 1999; Claessens, Djankov & Wu 2000; Dasri 2001; Haksar & Kongsamut 2003; Santiphaphob 2003; Siamwalla 2001). To date, only three research studies about formal methods of corporate workout have been conducted. It may be that the legal procedure about the reorganization of the Thai Bankruptcy Act is a new issue for practitioners and researchers. The first research was the study of Vongvipanond, Jumpa and Wichitaksorn (2002) regarding systematic analysis and empirical evidence of court - supervised corporate restructuring in Thailand in terms of economic and legal perspectives. The second study was undertaken by Pipatsitee, Kuldilouk and Ekukara (2003), at the Center for Applied Economics Research, Faculty of Economics, Kasetsart University, Thailand. They extended the first piece of research concerning the efficiency and effectiveness of the Thai bankruptcy court in terms of managing and controlling debt restructuring proceedings comparing it with the Corporate Restructuring Group, Bank of Thailand and the Thai Asset Management Corporation. The third study was also undertaken by Pipatsitee, Kuldilouk, Ekukara and Kuntong (2004) who extended their previous research by referring to their 2003 research results in order to determine ways for law development and the development of the law enforcement to improve debt restructuring efficiency. It was found that only the first, the research of Vongvipanond et al. (2002) investigated the implementation of the reorganization plan and a firm's post-bankruptcy performance.

Vongvipanond, Jumpa and Wichitaksorn (2002) attempted to study the process, problem and outcome of Thai corporate restructuring in the post-1997 crisis during the period 1998 - 2002. They used a survey research method to examine attitudes and

opinions of various stakeholders about the role of the Thai bankruptcy law towards the formal reorganization process. Their findings showed that the pattern of business restructuring under Thai Bankruptcy Act represents a US-based quasi-Chapter 11 which gives priority to debtors in managing filing firm during the bankruptcy reorganization process. More than 80% of bankruptcy petitions were voluntary petitions filed by debtors, who were also plan preparers and plan administrators. When they examined reorganization plans and actual post-bankruptcy performance, the findings revealed that the average recovery rate for reorganization was higher than the percentage of bankruptcy liquidation. This study found 49% as the average recovery rate for reorganization while the rate of bankruptcy liquidation was only 17%. They emphasized that this ratio showed the effectiveness of the reorganization plan that enhanced the firm's financial performance. In addition, the survey results also showed that most stakeholders were quite happy with the Thai bankruptcy law regarding the formal reorganization process because court-based corporate reorganization through the Central Bankruptcy Court had both facilitated and quickened debt settlement and business restructuring.

The Thai research thus concentrated very much on the law development to debt reorganization procedure rather than investigating financial characteristics of the process. No research has been done about the effectiveness of mechanisms of the formal reorganization process of the Thai Bankruptcy Act and post - bankruptcy performance in the finance field. It has not been researched whether governance mechanisms in the Thai reorganization proceedings are critical variables to revive bankrupt companies. This study will, therefore, consider these variables based on the theoretical framework of agency theory and endeavour to find the importance of governance mechanisms in the Thai reorganization proceedings.

2.3 The Thai bankruptcy reorganization process

The study proposes to examine determinants of post-bankruptcy performance by using insolvent firms under the Thai bankruptcy reorganization process. Some knowledge concerning the Thai reorganization process is required to understand the

administration process in reorganized firms and key governance mechanisms within the process. A brief review of this literature is as follows.

2.3.1 General background

The Bankruptcy Court in Thailand opened on June 18, 1999 after the National Assembly passed an amended 1940 Bankruptcy Act and approved the establishment of special bankruptcy courts in March 1998 (Debt Restructuring Regimes in Thailand n.d.; Urapeepatanapong, Sethsathira & Okanurak 1998). The primary purpose of the establishment of new reorganization provisions was to deal with the economic fallout from the Asian economic crisis in 1997. This was the first time Thailand had had a formal reorganization procedure in bankruptcy law since the original Thai Bankruptcy Act established in 1940.

The original Act included no provisions for the reorganization of a debtor. Under the old law, there was only one result of the proceedings, the liquidation of the debtor. Often these proceedings did not lead to a full realization of the debtor's assets. It never gave a good prognosis for the business survival of the debtor company and there was no chance for the restructuring of his/her business. In addition, it did not have the concept of a voluntary bankruptcy. There were only creditors initiating bankruptcy (Chandler, Sarawichitr & Nimmansomboon 2004; Pornavalai 1998).

A judicial process for the reorganization of debtors was established by Bankruptcy Act Amendment No. 4 B.E. 2541 which came into force in April 1998. It added a new Chapter 3/1 which involved sections 90/1 through 90/90 to the original Bankruptcy Act. The Amendment introduced a new legal proceeding - the reorganization proceeding intended to achieve the financial rehabilitation of insolvent companies. The new chapter was entitled "Proceedings for Reorganizing Business of Debtor".

However, there remained several issues unanswered for future legislation. Thus, in April 1999, the Bankruptcy Act No. 5 B.E. 2542 came into effect. This was a refinement of the new principles established in the 1998 Amendment. It covered a number of editorial and substantive subjects such as monetary thresholds, capital

injection, creditor voting, and approval of the plan. It may be said that the 1999 amendment was a step forward and could always be used as a basis for further legal development (Pornavalai 1999).

The new Bankruptcy Act includes elements of the US bankruptcy Code's Chapter 11, British Insolvency law and the Singapore Companies Act concerning Judicial Management (Anonymous 1997; Pornavalai 1998; Urapeepatanapong, Sethsathira & Okanurak 1998). Being similar to Chapter 11, the aim of amending the 1940 Bankruptcy Act was to give an opportunity to economically distressed companies to restructure their assets, operations, liabilities, and other obligations. The amendment was designed to encourage creditors and debtor companies to cooperate in maintaining future viability of debtor companies. In addition, it allows creditors to extend additional loans to insolvent firms in the hope that the new investment can keep the firm in operation without losing the right to claim compensation during a future restructuring or liquidation process (Pornavalai 1999; Sullivan 2002). The Amendments are important contributions for they seek to greatly enhance the success of reorganization (Bankruptcy Act of 1940 - in Thai n.d.; Chandler, Sarawichitr & Nimmansomboon 2004; Pornavalai 1998, 1999; Urapeepatanapong, Sethsathira & Okanurak 1998).

2.3.2 The legislative reorganization procedure

Based on the legislative reorganization procedure of the Business Reorganization office, Legal Execution Department, Ministry of Justice, Thailand (see Appendix 1: Chart of Business Reorganization Process), its important points are shown in Figures 2.1 - 2.3 (Bankruptcy Act of 1940 - in Thai n.d.; Chandler et al. 2004; Chart of Business Reorganization Process n.d.; Pornavalai 1998, 1999; Urapeepatanapong et al. 1998). These are as follows.

Figure 2.1 presents the process of filing a petition for reorganization. It starts when a firm files a petition for reorganization giving the court two alternatives; dismissal or acceptance of the petition. The petition will be accepted if the person who petitions for reorganization is: 1) a creditor(s) to whom the debtor owes at least 10 million

Baht, 2) an insolvent debtor owing creditor(s) at least 10 million Baht, 3) the Bank of Thailand, Securities and Exchange Commission, the Insurance Department and other certain government agencies being responsible for overseeing the operations of the debtor (see Figure 2.2: a petitioner and criteria for bankruptcy reorganization). If the petition is accepted, the court will examine the facts following the criteria for reorganization (see Figure 2.2). These include four main items; firstly, the debtor must be a juristic person (section 90/1). Secondly, the debtor must be insolvent, have more liabilities than total assets (section 90/3). Thirdly, the debtor owes creditor(s) at least 10 million Baht and fourthly, the reasons for and methods of reorganizing have been prepared. In addition, the nomination of the reorganization planner must have qualifications as specified by ministerial regulations. After examining the facts, the court will then decide whether to order business reorganization and appoint a plan preparer or dismiss the petition.

Once the court orders reorganization, proceedings commence and automatic stay comes into effect (see Figure 2.3: an insolvent firm during the bankruptcy reorganization proceedings). The debtor may no longer manage the business but the firm can continue business operations under the governance mechanisms of the reorganization process. Shareholders will retain only the right to dividend payments. The court will appoint an interim manager to act under the official receiver's supervision until the planner is appointed. However, the interim manager may be the management of the debtor's operation. When a planner is appointed, powers to manage the business and shareholder rights will be vested in the planner who must have qualifications as required by ministerial regulations. If the planner is not appointed at this stage, the process of the selection of the planner will be organized by the official receiver (see the selection process of the planner in Figure 2.4).

As shown in Figure 2.3, the planner has three to five months or around 90-150 days to prepare a reorganization plan for approval at the creditors' meeting or creditor committee and confirmation by the Bankruptcy Court. In the reorganization plan, the Bankruptcy Act only specifies broad requirements of the plan (section 90/42). They comprise reasons for the reorganization, details of the debtor's assets, guidelines and methods for reorganization, and releases of the security of secured creditors. Moreover, the reorganization plan must involve guidelines for the transfer of rights

of claim, a period for the implementation not exceeding five years, and the name and qualifications of the plan administrator including creditors' approval of the plan. Specifically, the plan must be able to show to the court that reorganization value exceeds liquidation value.

When the court issues an order accepting the reorganization plan, it will appoint a plan administrator who has rights and duties pursuant to section 90/59 of the Bankruptcy Act. The plan administrator must also have qualifications as stated in ministerial regulations. Once the court appoints the administrator, the duties of the planner immediately pass to the plan administrator who must manage the debtor's business in accordance with the plan until reorganization of the debtor's business operations is achieved. At this stage, according to the Act, the plan may be amended or the time period may be extended. Furthermore, a number of corporate activities such as an increase of capital and a sale of assets can be waived without shareholder approval as long as they are carried out in cooperation with the plan. During the implementation of the approved plan, the plan administrator must continuously report its progress to the official receiver.

If the plan administrator or the official receiver by the court or even the debtor's previous management believes that reorganization has been achieved, he/she may request the court to order the cancellation of the business reorganization. The court will schedule a hearing to determine whether the reorganization has been accomplished. When the court orders a termination of the reorganization process owing to successful reorganization, a debtor firm's executives resume the authority to run the business. If the implemented plan has been unsuccessful, it will examine the evidence in order to adjudge the debtor company as bankrupt by issuing an absolute receiving order or only declare the organization terminated.

It should be noted that the success of the process is directly related to the reorganization plan and its implementation. Two important persons are involved in this success: first the planner as the person who propose the plan and second the plan administrator who implements it. The planner is nominated by a petitioner and approved by the Bankruptcy Court while the plan administrator is determined within the plan by the planner. Once the plan is approved by the court, the plan

administrator is also approved and appointed automatically. The law only specifies broadly that they must have an academic degree and work experience in this field. There is no restriction regarding the kind of person. They may be the existing management of a debtor company or external experts and may be the same person, the planner and the plan administrator. The critical factor is their ability to help the firm survive by making a fresh start. It will be interesting to examine who the real experts are - the planner and plan administrator – insiders or outsiders and how they influence post-bankruptcy performance. These factors will be analyzed in this study.

2.3.3 The administration process of a reorganized firm during the bankruptcy reorganization proceedings

Based on Chapter 3/1 bankruptcy reorganization, a reorganized firm's administration process has been described in this study. It has particular procedures for managing the debtor company which are unique in its Thai style (see Figure 2.5: the administration process of a reorganized firm during the bankruptcy reorganization proceedings). The debtor cannot continue to manage its assets, or even prepare the reorganization plan, that has to be done by an appointed planner during the planning period and by an appointed plan administrator after the plan has been approved.

If the court orders a business reorganization but has not yet appointed a planner, the power and duties of the debtor's executive in managing the business and assets will cease. The court will appoint one or more persons or the debtor's executive to be the interim executive with the power and duties in managing the business and assets of the debtor under the supervision of the official receiver until a planner is appointed. During the time in which it is not possible to issue an order to appoint an interim executive, the official receiver will have the temporary power to manage the business and assets of the debtor (Section 90/20 of the 1940 Thai Bankruptcy Act).

The planner and plan administrator may be nominated by creditor(s) or the debtor for court approval. This depends on who files the petition: creditor(s) or the debtor. They must have qualifications as stated in ministerial regulations but the law only specifies a broad range of qualifications such as a bachelor's degree in finance and accounting and experience in this area of at least three years.

During the implementation of the approved plan, the creditors may pass a resolution at a meeting to appoint a committee of creditors to monitor and give guidance to the plan administrator. The plan administrator must manage the debtor firm following the plan, continuously report the progress of its implementation to a creditor committee and then submit it to the official receiver. It can be seen that the planner or the plan administrator acts as a board of directors to manage business operations relating to the reorganization plan including normal business operations as mentioned in the plan, while the existing management team of an insolvent firm still manages the day to day business by cooperating with the planner and the plan administrator.

This administration process will finish when the reorganization, which has or has not been accomplished, is terminated. The court will examine the outcomes of the implementation according to the plan. If it fails, the court will order the termination of the reorganization and/or adjudicate the debtor company as bankrupt. If it is successful, the court will order the reorganization to be terminated as well and normal business operations by the existing management team of the debtor company may be resumed shortly after.

2.3.4 The key governance mechanisms in the process

According to the administration process of the reorganized firm, there are several control mechanisms set up by Chapter 3/1 of the Thai Bankruptcy Act which are important factors to enable debtor firms to achieve success. The key mechanisms are:

2.3.4.1 The owner of a debtor firm: The law gives the owner of the debtor firm a chance to choose to file a petition for reorganization, if the owner considers there is an appropriate opportunity to continue its business. Once a firm is filed for reorganization by the debtor, he/she has first priority to nominate the planner, entrusted with the plan of reorganization who in turn nominates the plan administrator to manage the debtor firm after the plan has been approved by the court.

2.3.4.2 The planner: The planner has the duty to prepare a firm's formal reorganization plan in three to five months and manage the debtor firm during the

time the plan is being proposed. The planner may be any person, company or committee nominated by the petitioner (the debtor or the creditor) and approved by the court. His duties commence upon the court's order for business reorganization and finish when the court approves the plan.

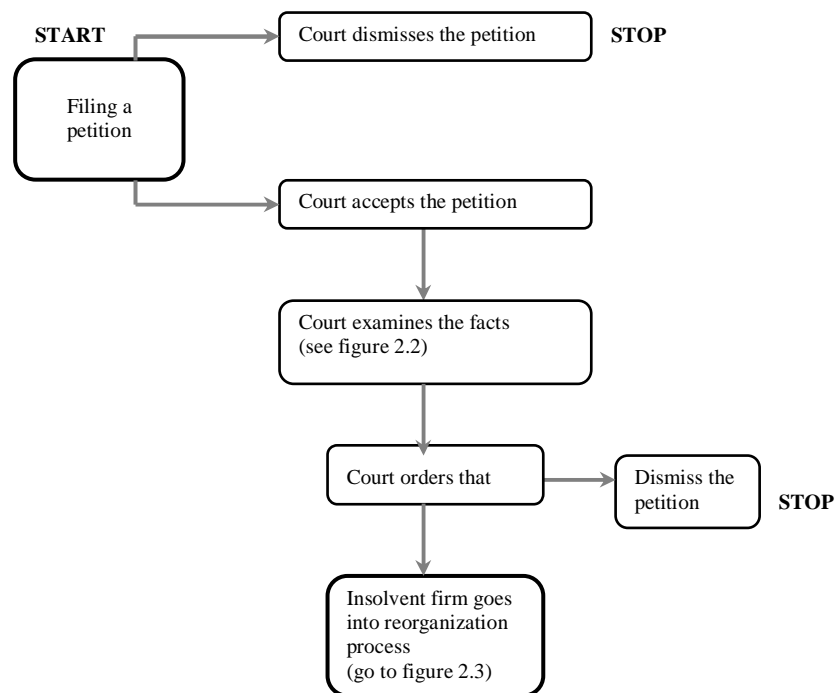
2.3.4.3 The reorganization plan: The plan which is prepared by the planner must be accepted by three-fourths of the creditors voting at a creditors' meeting. It must contain all the information required in Section 90/42 such as reasons for the reorganization, details of the debtor's assets, guidelines and methods for reorganization namely restructuring methods, and name and qualifications of the plan administrator including creditor's approval of the plan. When the court issues an order accepting the reorganization plan, it will be used as guidelines for the plan administrator for managing a reorganized firm.

2.3.4.4 The plan administrator: The plan administrator may be any person, company, or committee nominated by the planner, accepted by the creditor voting and approved by the court. The appointment, tenure, qualifications and compensation of the plan administrator are specifically contained in the plan. Once the court approves the plan and appoints the plan administrator, his/her duties commence and the duties of the planner immediately pass to him/her. He/she must manage the debtor's business in accordance with the plan until reorganization of the debtor's business operations is achieved. In addition, a remuneration package such as cash compensation and equity shareholding for the plan administrators is specified in the plan as a mechanism to motivate them to do their best for success in reorganization.

2.3.4.5 The creditors and a creditor committee: In the reorganization process, the creditors participate in all activities beginning with filing a petition and nominating the planner (if the debtor does not do so). Furthermore, approving the reorganization plan by the creditor voting, monitoring the plan administrator by a creditor committee are also their activities. A creditor committee is defined as a board of the plan administrator. It is required to provide guidance to the plan administrator and monitor the plan implementation. According to the law, the committee must be composed of at least three, but not more than seven members, from among the creditors or people assigned by the creditors to act on their behalf.

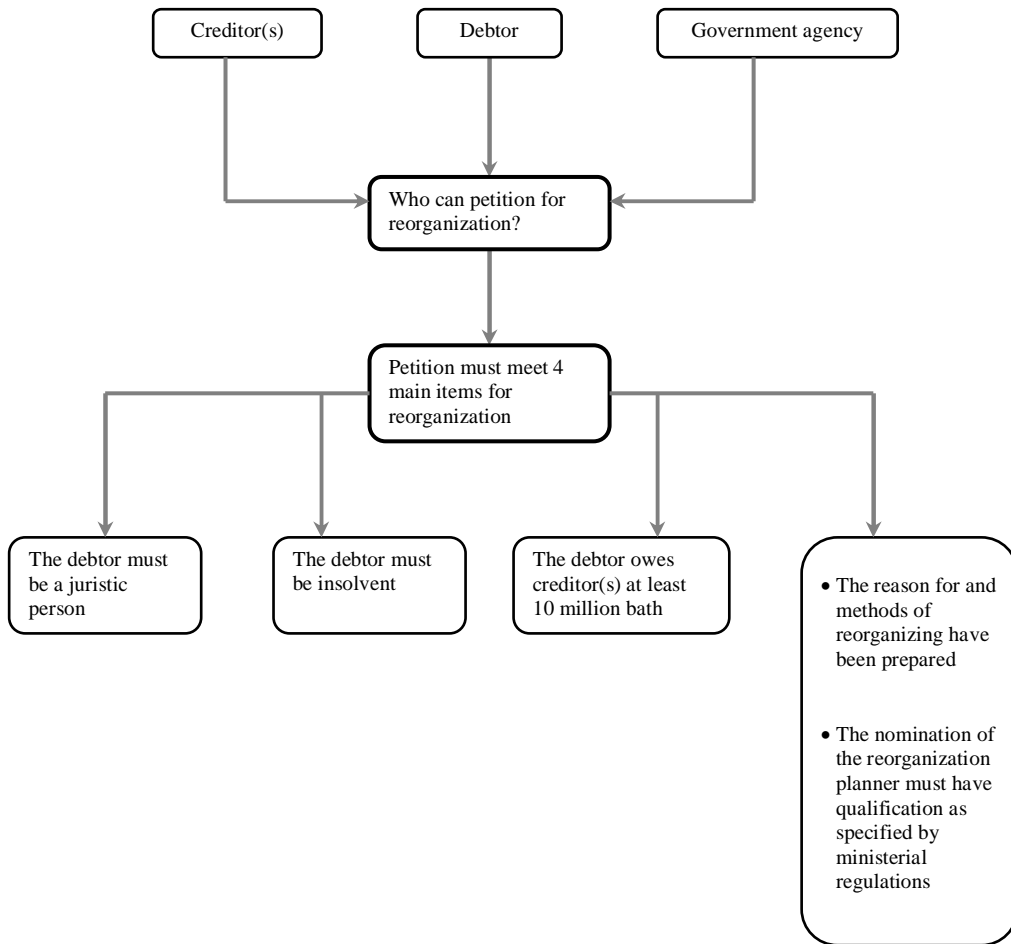
Although these mechanisms are generally viewed as important governance mechanisms of the process, no empirical evidence has assessed them in terms of agency theory. Thus, this study proposes to investigate the mechanisms expected by the theory as they may affect a firm's post-bankruptcy performance and use them to design a research model and develop hypotheses to be tested. This will be described in Chapter 3.

Figure 2.1: The process for filing a petition for bankruptcy reorganization



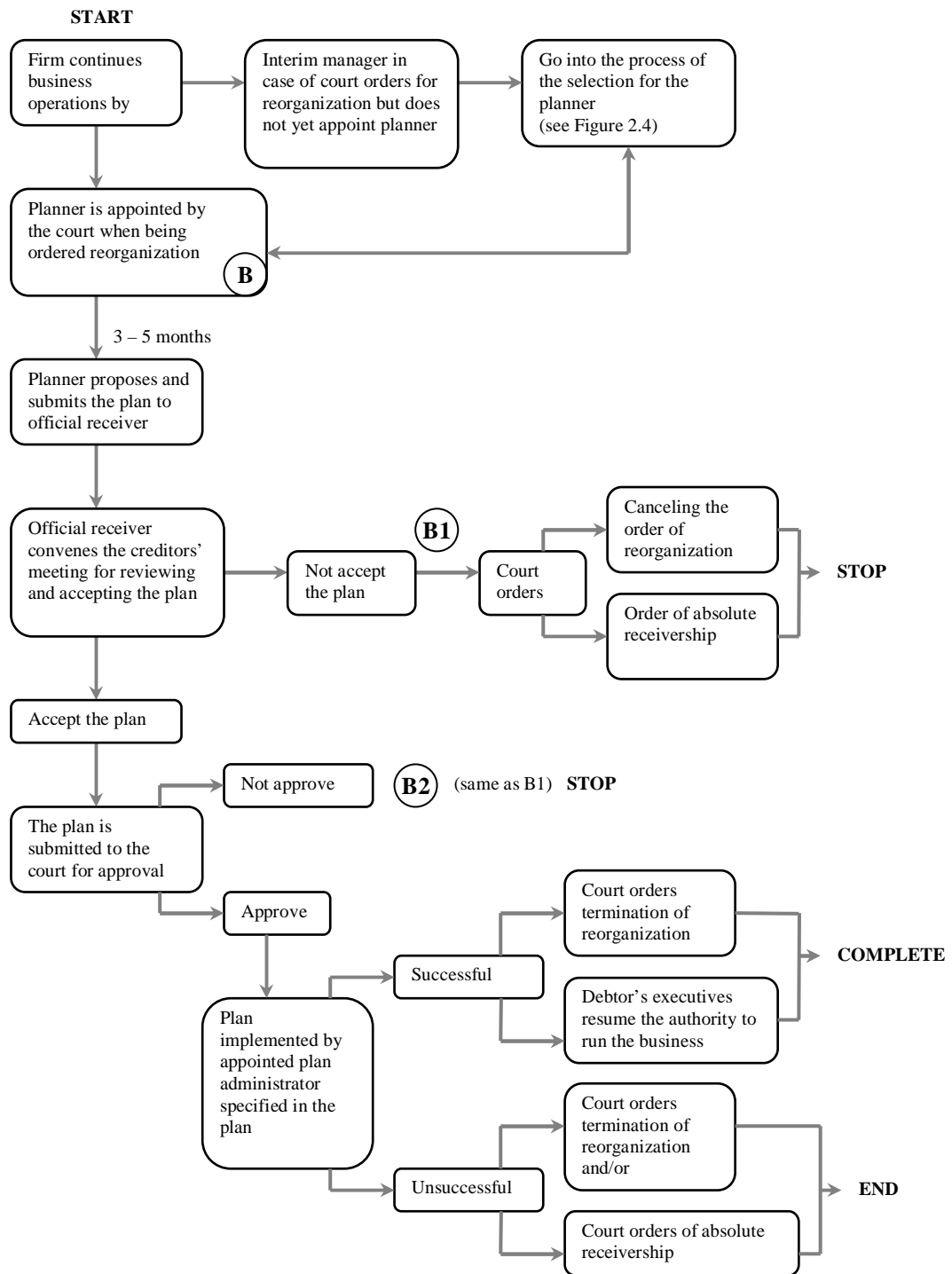
Source: Adapted from a chart of the Business Reorganization Process of the Business Reorganization Office, Legal Execution Department, Ministry of Justice, Thailand (see Appendix 1)

Figure 2.2: A petitioner and criteria for bankruptcy reorganization



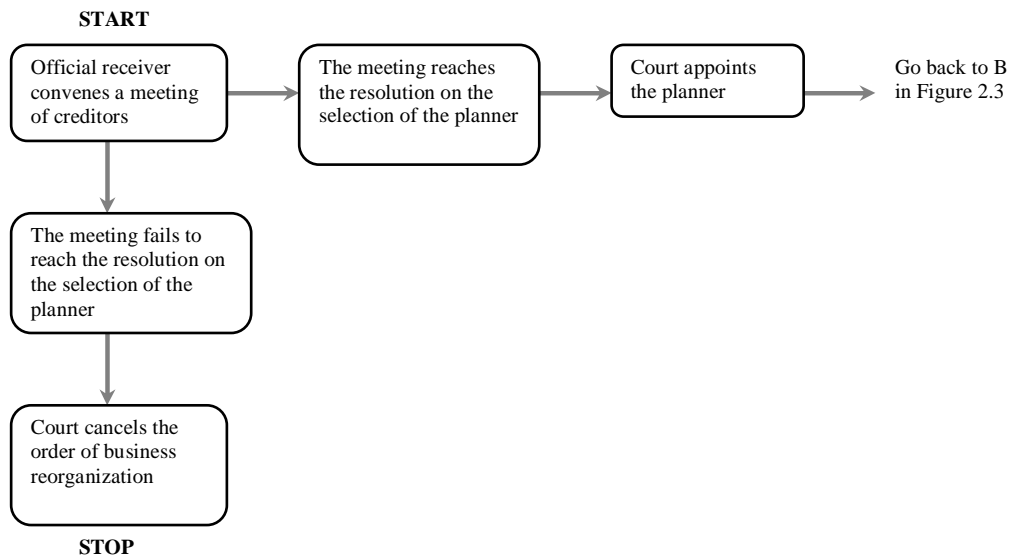
Source: Adapted from a chart of the Business Reorganization Process of the Business Reorganization Office, Legal Execution Department, Ministry of Justice, Thailand (see Appendix 1) and Bankruptcy Act of 1940 in Thai n.d.; Urapeepatanapong, Sethsathira & Okanurak 1998; Pornavalai 1998.

Figure 2.3: An insolvent firm during the bankruptcy reorganization proceedings



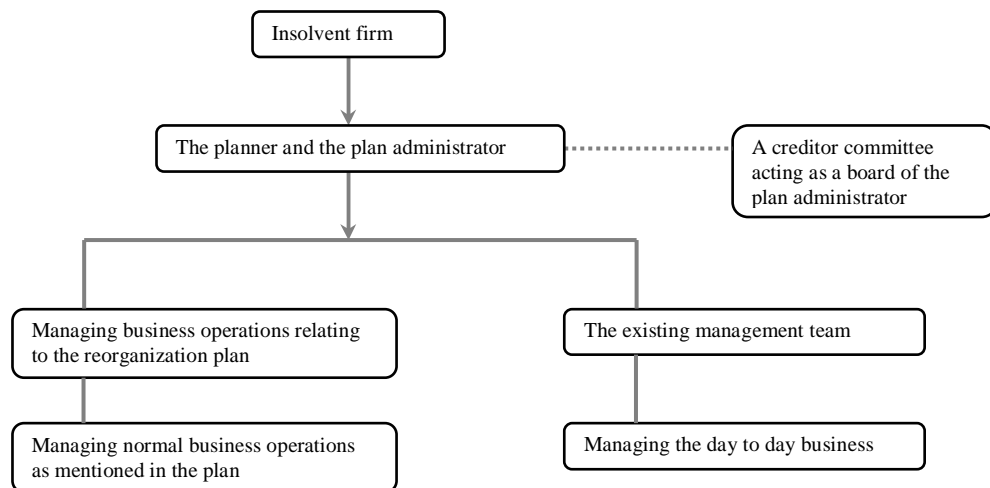
Source: Adapted from a chart of the Business Reorganization Process of the Business Reorganization Office, Legal Execution Department, Ministry of Justice, Thailand (see Appendix 1)

Figure 2.4: The selection process of the planner



Source: Adapted from a chart of the Business Reorganization Process of the Business Reorganization Office, Legal Execution Department, Ministry of Justice, Thailand (see Appendix 1)

Figure 2.5: The administration process of a reorganized firm during the bankruptcy reorganization proceedings



Source: Developed from Chapter 3/1, bankruptcy reorganization proceedings of the Thai Bankruptcy Act (Bankruptcy Act of 1940 (in Thai) n.d.) and information from the reorganization plan of insolvent firms in the sample of the study

2.4 Summary

This chapter reviews the literature of prior research findings relating to bankruptcy reorganization and post-bankruptcy performance. They involve measures of success in the bankruptcy reorganization process, the critical factors influencing successful bankruptcy reorganization, and the critical governance factors influencing successful bankruptcy reorganization. It also reviews the literature of the bankruptcy reorganization process of the Thai Bankruptcy Act and its key governance mechanisms as new incentives for studying an insolvent firm's post-bankruptcy performance in this study.

In the literature review, significant aspects of previous research findings were grouped as follows.

(1) measures of success in the bankruptcy reorganization process. Those studies included the percentages of firms emerging from bankruptcy, categories of emerging firms (successful reorganization, partially successful reorganization, and mergers and acquisitions), accounting performance, cash flow performance comparing with financial projections of the reorganization, and stock performance. The evidence shows that these measures gave mixed results.

(2) The critical success factors in the reorganization process. Those studies included the recontracting process, debtor-in-possession (DIP) financing, management changes, a firm's profitability, financial and operational projections in the reorganization plan, refocusing and restructuring strategy, and the efficiency of insolvent firms. Evidence confirms that some of these mechanisms (i.e. DIP financing, restructuring strategy) are helpful for renegotiating with creditors, increasing the efficiency of investment decision and enhancing bankruptcy recovery.

(3) The critical governance factors in reorganization. Those studies included board size, board composition, the structure of chief executive officer (CEO) - board chairperson positions, CEO and director turnover, equity ownership, and audit committee. Among them, the crucial governance factors influencing successful

bankruptcy reorganization tend to be outside directors in the board, board leadership structure and CEO power.

As to related research in Thailand, the literature review found only one survey by Vongvipanond, Jumpa & Wichitaksorn (2002) which examined the implementation of the reorganization plan and post-bankruptcy performance. Their findings confirmed that the reorganization plan was efficient and can increase post-bankruptcy performance. Thai research generally concentrated on the legal development of debt reorganization procedures rather than investigating financial characteristics of the process.

The literature reveals that the bankruptcy reorganization proceedings of the 1940 Thai Bankruptcy Act provides provisions, such as filing petitions, automatic stay, creditors' voting procedure and other useful mechanisms relating to a plan of reorganization and the appointment of a planner and plan administrator. These should help firms mitigate holdout problems and asymmetric information problems among claimants and enable an increase of creditor and investor confidence.

The reorganization plan, planner and plan administrator are the most important parts of the Thai reorganization process. The process commences from the court appointing a planner, nominated by the petitioner or a debtor, to be responsible for preparing the plan and managing the company. Once creditors and the court approve the plan, its administration will be overseen by the plan administrator who is nominated by the planner. The administrator will assume all management powers over the debtor company's business operations and assets that are previously held by the planner. However, the management team of the debtor company still exists to manage day-to-day business operations. If the implementation of the plan is successful, the debtor will be returned the power to control its business operations and assets and the debtor company's shareholders will regain their full legal rights as shareholders.

From the above literature, it is evident that no prior research has measured bankruptcy reorganization outcomes in terms of the percentage difference of actual financial performance to predicted performance and in relation to the governance

factors of the reorganization process (A summary of the major empirical studies relating to the bankruptcy reorganization proceedings is contained in Table 2.1). Most studies were undertaken in Western countries particularly the U.S. and used public companies which had been traded in a national stock exchange for analysis. There seems to be little evidence concerning the status of reorganization proceedings in Asian countries or on unlisted companies. No research has been completed around the effectiveness of mechanisms of the formal reorganization process of the Thai Bankruptcy Act and post – bankruptcy performance in the finance field within an agency theory framework.

Thus, the present study provides a unique contribution to this field by using both public and private insolvent companies in Thailand as an empirical study. Based on agency theory, the study will measure actual post-bankruptcy performance by comparing it with predicted financial performance in the reorganization plan. This will show the efficiency of the plan approved by the court. Importantly, the results of the study will inform debtor firms and related persons such as creditors and shareholders, including the bankruptcy court and the official receivers as regulators, around key mechanisms of the process that can enable reorganized firms to improve post-bankruptcy performance and achieve successful reorganization.

The next chapter presents the theoretical framework and hypotheses development between key governance mechanisms of the Thai reorganization proceedings and a firm's post-bankruptcy performance in the context of agency theory. It also describes a model of agency theory and its governance mechanisms that can control agency problems and enhance post-bankruptcy performance. The research model of the study is also presented in this chapter.

Table 2.1: A summary of the major empirical studies relating to the bankruptcy reorganization proceedings

| Study | Objective | Sample | Findings |
|-----------------------|---|--|---|
| Morse & Shaw (1988) | To examine the risk and return characteristics of the stocks of firms that had been actively traded and entered bankruptcy reorganization before and after the implementation of the 1978 Bankruptcy Reform Act in the U.S. | 162 bankrupt firms in the U.S. between 1973 and 1982 | <p>Trading in bankrupt firms had become much more common and been accepted.</p> <p>Although the systematic risk of firms was not affected by the bankruptcy announcement, the return on investment as measured by three-year average returns of sample firms did not increase significantly.</p> <p>Of 162 sample firms, around 25 percent disappeared and/or were liquidated while about 67 percent emerged from the process.</p> <p>The findings indicated that the bankruptcy reorganization process affected stock and bond prices adversely.</p> |
| Frank & Torous (1989) | To examine the institutional features of Chapter 11, bankruptcy reorganization | 30 bankrupt firms in the U.S. that emerged from reorganization between 1970 and 1984 | Although the recontracting framework of Chapter 11 process was complex, lengthy, and costly, it can overcome the underinvestment problems of bankrupt firms. |
| Weiss (1990) | To examine the direct costs of bankruptcy and violation of priority claims. | 37 industrial firms from a list of New York and American Stock Exchange firms declaring bankruptcy from November 1979 to December 1986 | <p>Direct costs of bankruptcy of sample firms averaging 3.1 percent of the book value of debt plus the market value of equity at the end of the fiscal year preceding bankruptcy were lower than previous researchers and priority claims were violated in 29 cases.</p> <p>The evidence found 95 percent of sample firms emerged from the bankruptcy reorganization.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|-------------------------|--|---|---|
| Moulton & Thomas (1993) | To investigate bankruptcy and bankruptcy reorganization as remedies for financially distressed firms. | 73 publicly-traded firms in the U.S. filed for bankruptcy reorganization from 1980 through to 1986 | <p>All sample firms were voluntary bankruptcies filed for reorganization.</p> <p>There were 44 firms (61 percent) of the sample that emerged from the process. Of the 44, only 6 achieved successful reorganization and 12 were partially successful.</p> <p>Some of the reorganized firms remained weak and continued to decline.</p> |
| Daily & Dalton (1994a) | To investigate the impact of board composition and chief executive officer (CEO) – board chairperson structure on corporate bankruptcy status. | 57 bankrupt firms and 57 surviving firms from archival sources such as Dun and Bradstreet and Funk and Scott’s Index of Corporate Change during the period 1972 -1982 | <p>Bankrupt firms had a CEO-board chairperson structure and lower proportions of outside directors in the board.</p> <p>The evidence suggested that the quality of the board and corporate governance structure can predict bankruptcy status.</p> <p>In addition, control variables which included financial indicators (profit, liquidity and leverage) and constituent common stock holdings by institutional investors, the officers and directors, and holders of 5% or more of a firm’s stock were also predictors of bankruptcy.</p> |
| Daily & Dalton (1994b) | To examine the impact of independent/dependent directors in the board and the dual leadership structure on the incidence of bankruptcy. | 50 bankrupt firms and 50 survivor firms during the year 1990 from Predicast’s F & S Index of Companies and Ward’s Business Directory of U.S. Private & Public Companies | <p>The findings were supportive of the impact of CEOs and boards of directors on the incidence of bankruptcy.</p> <p>The evidence confirmed that bankrupt firms relied more heavily on the dual leadership structure and fewer independent directors.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|------------------------------|--|---|--|
| Eisenberg & Tagashira (1994) | To investigate the effectiveness of the Japanese bankruptcy reorganization system. | 124 small Japanese firms under the bankruptcy reorganization process during the period 1982 -1987 | <p>The value of payments promised to creditors exceeded liquidation values.</p> <p>The evidence indicated that Japanese bankruptcy reorganization proceedings can create firm value.</p> |
| Gales & Kesner (1994) | To analyze the board of director size and composition in bankrupt organizations. | 127 bankrupt firms and 127 matching non-bankrupt firms between 1978 and 1985 from Funk and Scott's Index of Corporate Change and Ward's Directory | Bankrupt firms had significantly smaller boards than non-bankrupt firms but the proportion of outside board members in bankrupt firms was almost equal to that in non-bankrupt firms. |
| Hotchkiss (1994) Essay # 1 | To examine the performance of firms that have emerged from the Chapter 11 process. | 197 public companies which filed for Chapter 11 between October 1979 and September 1988 and emerged from Chapter 11 by fiscal year end 1989 | <p>A large number of reorganized firms continued to perform poorly after emerging.</p> <p>Little evidence confirmed the efficiency of the process.</p> |
| Hotchkiss (1994) Essay # 3 | To examine stock price reaction to asset sale decisions by large public companies entering the chapter 11 process. | 50 large public companies which filed for Chapter 11 between October 1979 and September 1988 and used asset sales as corporate restructuring | <p>Abnormal announcement returns were positively related to asset restructuring.</p> <p>The evidence confirmed that the divestiture decision was an important method for restructuring financially distressed firms.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|-----------------------|--|--|---|
| Daily (1995) | To examine the relationship between board composition and leadership structure and bankruptcy reorganization outcomes. | 70 listed firms filing for Chapter 11, bankruptcy reorganization during the years 1980 through to 1986 | <p>The evidence supported hypotheses regarding board composition which were the proportion of outside directors being positively associated with successful reorganization and negatively associated with liquidation.</p> <p>However, the evidence provided no support for the impact of board leadership structure on the success of bankruptcy reorganization.</p> <p>Following the definition of reorganization outcomes by Moulton & Thomas (1993), 15 sample firms succeeded in reorganization, 29 achieved partially successful reorganization, 11 were acquired, and the remaining 15 firms (21 percent) were liquidated.</p> |
| Daily & Dalton (1995) | To examine CEO and director turnover in failing firms. | <p>Sample 1 - 57 bankrupt firms and 57 surviving firms from archival sources such as Dun and Bradstreet and Funk and Scott's Index of Corporate Change during the period 1972 -1982</p> <p>Sample 2 - 50 bankrupt firms and 50 survivor firms during 1990 from Predicast's F & S Index of Companies and Ward's Business Directory of U.S. Private & Public Companies</p> | <p>The rate of director turnover was substantially higher for bankrupt firms.</p> <p>Regarding the CEO-board chairperson structure, the results from sample 1 indicated that there was no tendency for bankrupt firms to change this structure while sample 2 suggested that the position of CEO and board chairperson was likely to be separate.</p> |

Tabled 2.1 (continued)

| Study | Objective | Sample | Findings |
|--------------------------------------|--|---|--|
| Datta & Iskandar-Datta (1995) | To examine various forms of restructuring of firms under the bankruptcy reorganization process. | 135 firms that filed a Chapter 11 reorganization petition between January 1980 and December 1989 | Among various types of restructuring – financial, asset and governance restructuring including labor recontracting, asset and governance restructuring played significant roles in reorganized firms. |
| Hotchkiss (1995) | To investigate the relationship between post-bankruptcy performance and management changes during the restructuring process. | 197 public companies which filed for Chapter 11 between October 1979 and September 1988 emerged from Chapter 11 by fiscal year end 1989 | Pre-bankruptcy management which retained control of the firm in the reorganization process is strongly related to poor post-bankruptcy performance. More than 40 percent of the reorganized firms in the sample continued to experience operating losses in the three years after emergence and 32 percent filed for bankruptcy again. |
| Chatterjee, Dhillon & Ramirez (1996) | To examine debt restructuring of sample firms undertaking bankruptcy reorganization, prepackaged bankruptcies, and workouts as mechanisms for resolving financial distress. | 70 Chapter 11 filings, 21 prepacks, 65 private workouts, and 45 public workouts in the U.S. from January 1989 - December 1992 | The debt restructuring decision of sample firms depended on the degree of a firm's leverage, the severity of the liquidity crisis, the extent of creditor's coordination, and the magnitude of the firm's economic distress. Firms facing economic distress chose to file for bankruptcy reorganization while economically viable firms used workouts and economically viable firms that faced immediate liquidity problems preferred prepackaged bankruptcies. |
| Daily (1996) | To examine the impact of two monitoring groups - audit committee composition and institutional investor holdings on the incidence and nature (prepackaged plans and length of time spent in reorganization) of firms' bankruptcy reorganization. | 53 firms filing bankruptcy reorganization and 53 matching firms not declaring bankruptcy in the U.S. during the period 1988 - 1993 | The relationship between affiliated directors serving on the audit committee or institutional investor holdings and the incidence of bankruptcy was not statistically significant. They were significantly related to the nature of bankruptcy filing during the 5-year period preceding the filing. |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|--------------------------------|---|---|---|
| Hubbard & Stephenson (1997) | To investigate stock prices of bankrupt firms that submitted reorganization plans. | 68 bankrupt firms from a list of New York and American Stock Exchange firms during the period 1988 and 1993 | On average, the market price of stocks in their sample was higher than the price that the shareholders expected to receive under the bankruptcy reorganization plan. |
| Maksimovic & Phillips (1998) | To investigate whether bankruptcy reorganization provides a mechanism that enhances insolvent firms to reorganize efficiently and the efficiency of asset reallocation decision of these firms. | 302 firms in the U.S filed for reorganization 1978 - 1989 | The bankruptcy reorganization process was relatively less important than industry and plant-level productivity factors in influencing the decisions of sample firms. Asset efficiency and reallocation decisions of bankrupt firms also depended on industry conditions. |
| Michel, Shaked & McHugh (1998) | To analyze the future of firms that file for bankruptcy reorganization by evaluating the reliability of the projections provided in the reorganization plan. | 35 firms filed for Chapter 11 between 1989 and 1991 and meeting the determined criteria | The operating and financial projections in the reorganization plan of sample firms were frequently overstated. |
| Hotchkiss & Mooradian (1998) | To investigate acquisitions as a means of restructuring firms in Chapter 11. | 55 restructuring firms acquired by public companies | Acquisitions can create more value of restructuring firms according to post-merger performance of firms acquired in bankruptcy. |
| Alderson & Betker (1999) | To assess post-bankruptcy performance by analyzing reorganized firms' cash flows. | 89 firms that reorganized in Chapter 11 process between 1983 and 1993 | Overall, post-bankruptcy performances of sample firms were poor. Investment behavior following reorganization affected the performance. Firms with high growth and more investment earned superior returns. |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|------------------------------------|---|--|---|
| Dawley (1999) | To examine the effects of strategic change (refocusing), organizational size, slack, and environmental munificence on post-bankruptcy performance in terms of recovery and recovery time. | 208 manufacturing firms filing for Chapter 11, bankruptcy reorganization from 1980 to 1992 | <p>The effect of refocusing on post-bankruptcy performance was statistically significant.</p> <p>The results from the base net income, return on assets (ROA), return on sales (ROS), and Z-score models also supported that greater organizational size, slack, and environmental munificence positively affected post-bankruptcy performance.</p> |
| Eberhart, Altman & Aggarwal (1999) | To assess the stock return performance of firms emerging from bankruptcy reorganization. | 131 reorganized firms in the U.S. between 1980 and 1989 | <p>The equity performances of sample firms were positive and large in the long-term.</p> <p>The evidence showed that they were better than the market's expectation.</p> |
| Gilson, Hotchkiss & Ruback (2000) | To examine the market value of reorganized firms by comparing it with an estimated value based on the management's published cash flow projections. | 63 public companies filed for Chapter 11, bankruptcy reorganization between 1984 and 1993 | The ratio of estimated value to market value in the sample was very wide – less than 20 percent to greater than 250 percent. |
| Rose-Green & Dawkins (2000) | To investigate the relationship between bankruptcy outcome and reaction to bankruptcy filings of the capital market. | 77 firms filing for bankruptcy petitions in the U.S. between 1980 and 1996 | <p>The market was able to differentiate between subsequently liquidated firms and subsequently reorganized firms.</p> <p>Significantly, liquidated firms had larger negative price reactions than reorganized firms.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|--|---|---|---|
| Fayez & Meyer (2001) | To examine the impact of receiving debtor-in-possession (DIP) financing on the probability of successful reorganization and time spent under Chapter 11 Bankruptcy. | 47 Chapter 11 firms with 67 DIP financing agreements between 1980 and 1995 from F & S Index of Corporate Changes, Moody's Manuals and Wall Street Journal Index | <p>Statistically, there was a positive and significant impact of DIP financing on the probability of successful reorganization and a shorter time spent under bankruptcy proceedings.</p> <p>The evidence suggested that DIP financing can reduce the probability of liquidation.</p> |
| Jayaraman, Sabherwal & Shrikhande (2001) | To examine the impact of financial distress, the bankruptcy code, and related procedures on the post-reorganization performance of two companies engaged in similar businesses across two countries. | The US firms, Colombia Gas system (CGS) and the German firms, Metallgesellschaft AG (MG) | <p>Unanticipated changes in energy prices were the cause of both the companies being driven into bankruptcy reorganization.</p> <p>The resolution time to come out of bankruptcy reorganization of the US firms was longer than that of the German firms but the post-reorganization performance of the US firms had been excellent while the performance of the German firms had been poor.</p> <p>The evidence indicated that the underlying economic fundamentals were more likely to be the important determinants of post-bankruptcy performance rather than the country specific bankruptcy code.</p> |
| Sudarsanam & Lai (2001) | To investigate the effects of corporate turnaround strategies which include operational, asset, managerial and financial restructuring on post-bankruptcy performance in terms of corporate recovery. | 166 bankrupt UK firms from 1985 - 1993 | <p>Recovery firms preferred to choose asset restructuring, particularly investment and acquisition whereas non-recovery firms focused on operational and financial restructuring.</p> <p>These results indicated that recovery firms chose more forward-looking, expansionary and external market focused strategies than non-recovery firms which still kept internal changes.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|---------------------------------|---|---|--|
| Dawley, Hoffman & Lamont (2002) | To investigate two important factors (choice situation and refocusing) of a firm's post-bankruptcy performance. | 207 publicly traded manufacturing firms having assets greater than US\$ 10 million that filed for Chapter 11 reorganization between 1980 and 1992 | The evidence confirmed that choice situation and refocusing were significant impacts on post-bankruptcy performance as measured by 3-5 year averages of industry-adjusted ROA, ROS and Altman's Z-score. |
| Denis & Rodgers (2002) | To investigate critical factors of reorganization success. | 224 bankrupt firms in the U.S. from 1985 – 1994 | <p>Firm profitability and restructuring methods were significantly positive factors of reorganization success.</p> <p>The evidence also indicated that only 43 percent of the sample firms were successful.</p> |
| Lehavy (2002) | To investigate fresh start equity value in companies emerging from Chapter 11 bankruptcy. | 72 firms emerging from Chapter 11 and adopting fresh start reporting in accordance with Statement of Position no. 90-7 (SOP 90-7) | <p>The fresh start equity value was, on average, 4 percent understated relative to the market equity value immediately after emergence from Chapter 11.</p> <p>The cross-sectional variation in the misstatements between the fresh start equity value and the market equity value was significant.</p> <p>The characteristics of the bankruptcy reorganization process (i.e. percentage ownership of former unsecured creditors and former shareholders in the reorganization firm) were significant factors that related to the misstatement in the fresh start value of equity.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|--|--|---|---|
| Platt & Platt (2002) | To re-examine the effectiveness of the bankruptcy reorganization process | 78 public companies emerging from Chapter 11, bankruptcy reorganization | <p>The median and mean forecast errors for sales, operating income and net income were not significantly different from zero.</p> <p>The financial positions of sample emerging companies were relatively strong.</p> |
| Dahiya, John, Puri & Ramirez (2003) | To investigate how debtor-in-possession (DIP) financing is related to the probability and speed of bankruptcy resolution. | 107 debtor-in-possession financed firms in the U.S. between 1988 and 1997 | <p>Significantly, DIP financing was associated with a higher probability of emergence and a shorter time in bankruptcy reorganization.</p> <p>Little evidence indicated overinvestment of DIP financing.</p> |
| Chen (2003) | To examine information (i.e. auditor's opinion) and several other factors (i.e. financial status, stock returns) that affect a firm's debt restructuring choice between Chapter 11 and workouts. | 820 firms from Moody's Credit Risk management Services | <p>A firm's choice between a workout and Chapter 11 to resolve its financial distress depended on the degree of the firm's leverage, the severity of the liquidity crisis, coordinating among claimholders, the asset structure, the magnitude of the firm's economic distress and severity of information.</p> <p>Financially distressed firms with more severe accounting problems chose Chapter 11 for reorganization.</p> <p>Firms that had less coordination and information problems and used workouts for restructuring their debts were better quality firms.</p> |
| Fisher & Martel (2003) | To examine determinants of the firm's reorganization decision by using the Bulow-Shoven-White framework. | 640 insolvent Canadian firms during the period 1977-1988 | Significantly, free assets, the amount of debt reduction in reorganization and the firm's size had positive effects on the reorganization decision. |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|---|--|---|--|
| Brockman, Hoffman, Dawley & Fornaciari (2004) | To examine the influence of Chief Executive Officer (CEO) power both formal as determined by duality and informal as determined by prestige on bankruptcy reorganization as measured by reorganization time, organizational survival, and recovery time. | 252 publicly traded firms having total assets greater than US \$ 25 million and filing for bankruptcy reorganization | <p>Significantly, formal power of CEO – duality was associated with improved odds of organizational survival, a reduced recovery time and a longer reorganization time, whereas CEO’s informal power – prestige was associated with reduced odds of survival, a longer recovery time and a longer time in reorganization.</p> <p>The evidence pointed out that formal CEO power was a critical factor for a firm to survive and return to performance standards.</p> |
| Chatterjee, Dhillon & Ramirez (2004) | To examine the effect of debtor-in-possession (DIP) financing in reorganized firms on security prices and the structure and characteristics of DIP loans. | 185 publicly traded firms filing for Chapter 11 during the period 1988 - 1997 and receiving DIP financing | <p>There was a significantly positive stock and bond price reaction to the announcement of DIP financing.</p> <p>DIP loans mostly were in the form of short-term revolving credits that restricted the use of proceeds to working capital.</p> <p>DIP loans incorporated a significant number of affirmative and negative covenants.</p> |
| Kim (2006) | To explore how managerial ownership was associated with two choices of a firm’s debt restructuring method - Chapter 11 and a private workout, to investigate whether concentrated ownership by managers can resolve the financial distress, and to examine the non-linear relationship between managerial ownership and the choice between Chapter 11 and a private workout. | 98 Chapter 11 firms and 96 private workout firms from the Wall Street Journal Index (WSJI) and Lexis-Nexis over the period 1992 to 2003 | <p>The findings showed that when shareholdings by managers were in the 5% and 25% range, an increase in managerial shareholdings would increase the probability of firm’s choosing Chapter 11 filing as a resolution method, suggesting that the 5%-25% range of managerial ownership was related to the management entrenchment.</p> <p>The findings also showed a significant curvilinear relationship between managerial ownership and the probability of Chapter 11 firms, suggesting that managerial ownership was significant to the corporate decision.</p> |

Table 2.1 (continued)

| Study | Objective | Sample | Findings |
|---|---|--|--|
| Charitou, Lambertides & Trigeorgis (2007) | To examine the relationship between institutional ownership and earnings behaviour of bankruptcy-filing firms in conjunction with a top management turnover or a qualified audit opinion during the distressed period. | 859 U.S. firms that filed for bankruptcy reorganization during the period 1986-2004 and one control sub-sample of healthy firms (matched by year-industry-ROA) from the Compustat database of the Wall Street Journal or the Internet Bankruptcy Library | Significantly, the results showed that during the distressed period, top-level management turnovers, qualified audit opinions and the role of institutional ownership can mitigate the negative abnormal returns of bankrupt firms as measured by net income and cash flow from operations. |
| Denis & Rodgers (2007) | To examine factors that influence the length of time a firm was in Chapter 11, the initial outcome of Chapter 11, and the ex post operating performance of firms that reorganize and emerge from Chapter 11 as independent publicly traded firms. | 224 Chapter 11 filings (141 reorganized and emerged firms as public going concerns, 51 liquidated firms, and 32 acquired firms) that first appeared in the Securities and exchange Commission's (SEC) reports during the 1985-1994 period | Among firms that were acquired while in Chapter 11, only firm size had a significant impact on the time spent in Chapter 11. Among firms that reorganized and emerged as independent firms, the median industry operating margins and restructuring assets and liabilities while in Chapter 11 were significant factors of the time spent in Chapter 11 and a firm's post-reorganization performance. |
| Kalay, Singhal & Tashjian (2007) | To examine whether firms filed for bankruptcy reorganization improve their operating performance during Chapter 11. | 459 Chapter 11 firms from the data base of New Generation Research (www.bankruptcydata.com) during the period 1991-1998 | Chapter 11 provided net benefits to sample firms. They found an increase in the operating efficiency of firms while in Chapter 11 as compared with the operating efficiency of firms in a matched portfolio. Firms with higher debt ratios experienced greater improvements in operating performance and the complexity of the renegotiation process negatively affects the improvement. |

Chapter 3

Theoretical framework and hypotheses

3.1 Introduction

This chapter reviews agency theory and its governance mechanisms as the theoretical framework to develop hypotheses for the study. Section 3.2 shows the research paradigm of the study. Section 3.3 introduces the general background and a model of agency theory and considers types of governance mechanisms to mitigate agency problems. It also addresses hypothesis development based on the agency theoretical framework and prior research with respect to the effects of governance mechanisms on firm performance.

3.2 Research paradigm

Two major research philosophies have been identified in business research, namely the positivist and interpretivist approaches (Bryman & Bell 2003). The positivist approach believes that reality is stable and can be observed and described from an objective viewpoint (Guba & Lincoln 1988; Levin & Greenwood 1998). Phenomena should be isolated and observations should be repeatable. The advantage of positivist research is that it can identify the precise relationships between chosen variables. The interpretivist approach indicates that reality is fully understood only through the subjective interpretation of and intervention in reality. The study of phenomena in their natural environment is a key point to the interpretivist philosophy.

For this study, the positivist paradigm is the research framework. It assumes determinants of post-bankruptcy performance as social facts which can be identified and their relationships with performance can be measured and are repeatable (Easterby-Smith 1991; Glesne & Peshkin 1992). The ontology assumption shows that the successful/unsuccessful reorganization of Thai insolvent firms is the salient phenomenon that should be verified and observed and that the epistemological

perspective will be the way of testing hypotheses which are constructed of the relationships among the main factors surrounding a formal reorganization process. Following positivism, the quantitative approach will be applied in the research and financial and statistical analyses will be used for measuring given variables and testing hypotheses. These perspectives guide the research design of the thesis and determine the research model.

3.3 Conceptual framework and hypothesis development

3.3.1 General background

Agency theory has been studied since the early 1970s and deals with the relationship of two parties, principals and agents (Fama & Jensen 1983). Generally in business, the principals are owners or shareholders and other stakeholders, such as potential investors and creditors, and the agents are professional managers (Hatch 1997). When a principal promises an agent to give a reward, he or she hopes that the agent will be willing to do given jobs. The principal will form a contract with the agent to represent the principal's interests in return for some form of compensation. This is the principal-agent relationship.

Jensen and Meckling (1976) define the agency relationship as a theory of the firm based upon conflicts of interest between principals (owners) and agents (professional managers). It is also seen as the control problem for corporations from the point of view of owners or shareholders and other stakeholders (Hatch 1997). In the relationship between all stakeholders and professional managers, managers are hired to act as agents for owners, and for the interests of stakeholders. They are the key persons to make decisions on activities in corporations to pursue organizational objectives, maximize a firm's profits and create corporate value so that stakeholders can receive high returns. However, agents are expected to have their own interests and consequently they may pursue strategies and goals to serve these interests rather than those of stakeholders (Eisenhardt 1989).

Nevertheless, there are economic advantages from using operational skills of professional managers (Byrd, Parrino & Pritsch 1998; Krakel 2004). Most modern corporations use this form of management to run their businesses because the specialized skills of managers give corporations access to a much larger pool of capital than management by sole proprietorships or partnerships. Investment projects and production levels may be on a scale beyond other forms of business organization. In addition, the ability of professional managers can combine the capital of many dispersed investors. Shareholders may receive more value from delegating decisions to their managers.

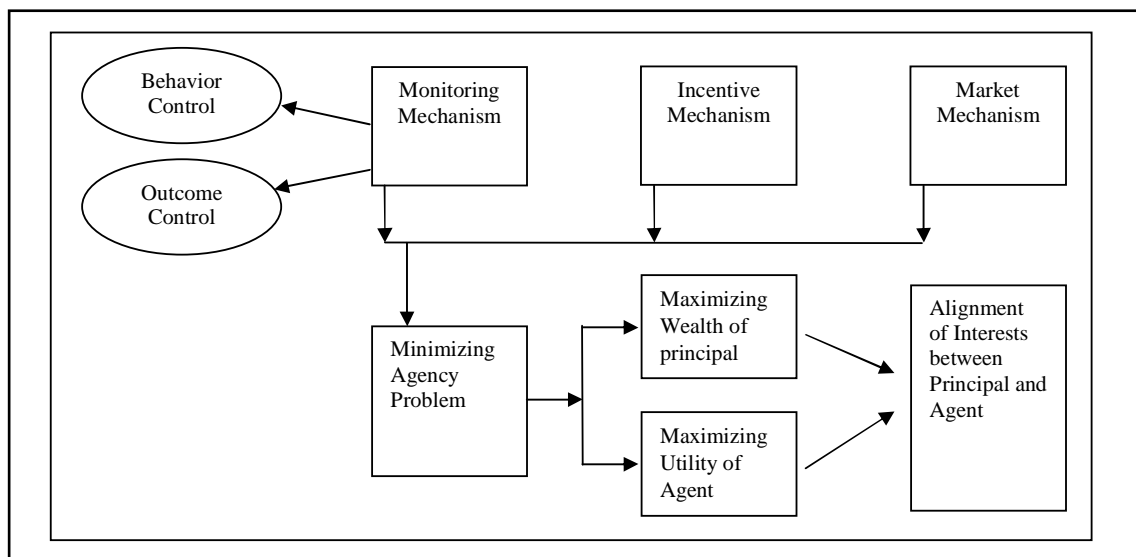
However, to handle agency problems, agency costs will incur. Jensen and Meckling (1976) define agency costs as the sum of monitoring cost, bonding cost and residual loss. Monitoring costs are expenditures paid by the principal/shareholders. They are designed to limit the aberrant behavior of managers and may include the cost of controlling the behavior of managers and compensation incentives for managers. Bonding costs are borne by the agent/managers but are not always pecuniary costs. These costs, such as the cost of additional information disclosures to shareholders, are set up to guarantee that managers will act in shareholders' best interests. However, monitoring and bonding costs cannot make shareholders sure that managers will make optimal decisions from shareholders' viewpoints. Therefore, there are still costs or losses of the agency relationship. These are known as residual losses or efficiency losses (Godfrey & Hill 1995). All agency costs are extraordinary costs for a firm and are very expensive (Kim 1995; Li & Li 1999; Masimba 1991).

Therefore, the main objective of agency theory is to identify effective mechanisms to encourage managers to serve the firm owners' interests (Keasey, Thompson and Wright 1997). It has been found that many prior studies attempted to understand agency problems and seek a number of effective mechanisms to reduce these costs, for example, the studies of Agrawal & Knoeber (1996), Keasey et al. (1997), Fosberg & Rosenberg (2003), and Core, Guay & Verrecchia (2003). They suggested that a better understanding of the problems and efficient control mechanisms enhance the implementation of agency theory to generate more benefits for all stakeholders.

3.3.2 A model of agency theory

Agrawal and Knoeber (1996) and Keasey et al. (1997) mention that several surveillance mechanisms are useful for shareholders to alleviate agency problems. This study explains these mechanisms in Figure 3.1: A model of agency theory which is developed from its theory and prior research in the field. The mechanisms are divided into three categories: monitoring, incentive, and market mechanisms. Monitoring mechanisms control managers' behavior. Incentive mechanisms motivate managers to act better for maximizing organizational profit, and market mechanisms control managers from outside the organization. It is believed that an efficient market for corporate control can help a management team to maximize corporate and shareholder value. All mechanisms are meant to minimize agency problems and lead to a convergence of both the interests of shareholders and managers. Potentially, shareholders can receive maximizing wealth, while managers can receive maximizing utility as well. Thus, the central target of this model is to achieve interest alignment between shareholders and managers.

Figure 3.1: A model of agency theory



Source: Developed from the content of agency theory and prior research in the field

3.3.3 Monitoring mechanisms

To investigate and control managers' behavior, Hatch (1997) and Byrd et al. (1998) suggested that shareholders can choose two alternative mechanisms: behavior control and outcome control. Behavior control is the method to shape managers' behavior into the same direction as shareholders' objectives. Basically, it starts from controlling the management structure of the company which should be simplified so that shareholders can observe and control the behaviors of the managers. Generally, a hierarchical power-decentralizing management structure is the optimal structure which is used in most modern organizations (Nankervis 2002). The basic thought of such a structure is to avoid power-centralizing which might potentially lead to power-abuse and self-serving activity. Contracts can also be used to control managers (Eisenhardt 1985). The contract control method is known as the result-control approach. If the final performances of managers satisfy shareholders in terms of benefits, managers will achieve the service of their own interests. Nevertheless, only relying on this method has high risks because shareholders are not during the operation process; this might cause some undetected self-serving, idleness, and shirking activity. Thus, shareholders should use additional layers of management such as a board of directors to give guidelines or to supervise managers including evaluating their performance (Hatch 1997). Moreover, the development of information systems such as a cost accounting system, budget system, and formal reporting is another useful method of controlling managers' performance (Baiman 1990). However, in setting up and using the process-control methods, shareholders should proceed with care for no matter what methods are employed, it will add extra overheads to the company, especially in big organizations (Godfrey & Hill 1995).

As regards the high cost and complexity of the process-control methods, the outcome control method seems more attractive. Once the outcome can be measured, the outcome control method is cost - effective (Hatch 1997). Normally, financial performance such as accounting profits, return on assets (ROA), return on equity (ROE) and market price per share (MPS) are used to measure a manager's management performance (Oswald & Jahera 1991). The underlying theory is that if a manager shows good performance in creating corporate value and achieving organizational goals, financial returns should reflect an impressive performance.

However, under business uncertainty, the accuracy of this theory may be biased. Managers' efforts and performances may be threatened by uncontrollable factors, outside elements such as competitors' actions, government regulation changes, natural disasters, and other uncontrollable factors any one of which may influence the overall organizational performance.

3.3.3.1 Outside directors in the planner and plan administrator

According to agency theory, outside directors are viewed as a monitoring mechanism. Fama (1980) and Fama & Jensen (1983) looked at an outsider board as decision experts. They suggested a board with a high proportion of outside directors is more likely to perform its duties in monitoring business management effectively. Many researchers have considered the effect of board control on financial performance, for example, the studies of Peng (2004), Coles & Hesterly (2000), Westphal (1999), Morck, Shleifer & Vishny (1989), Hermalin & Weisbach (1988), and Baysinger & Butler (1985).

Baysinger and Butler (1985) explored the relationships between board composition, changes in compositions, corporate financial performance and changes in performance for a 266-firm sample between 1970 and 1980. The measure of financial performance selected was calculated by dividing the firm's return on equity by the average return on equity for all the firms in its primary industry, including those not in the sample. Their findings indicated that board composition, in terms of the proportion of outside independent directors, had a marginal effect on such performance, but that the effect was lagged. A key finding was that the ratio of independent to inside directors was higher in firms which had a performance above average than firms with a performance below average.

Hermalin and Weisbach (1988) identified determinants of board composition. They tested whether firm performance, CEO tenure, and changes in market structures lead to changes in board compositions. The sample of their study was 142 firms of New York Stock Exchange (NYSE)-traded companies between 1971 and 1983. The change in earnings before interest and taxes and stock returns are used as measures

of firm performance. It was seen that in analyzing their model (a Poisson model), poor performance, existing industries, possibly new CEOs and imminent CEO succession caused inside directors to leave the board and outside directors to join the board.

Morck, Shleifer and Vishny (1989) attempted to assess the effectiveness of the board of directors as alternative mechanisms for corporate control by using three differential measures of performance: average Tobin's Q, stock market abnormal returns, and employment growth rates separately. Their study employed multivariate analysis to test performance and management characteristics of 454 of the 1980 Fortune 500 firms between 1981 and 1985. They found that when firms face troubled situations and external control markets namely restructurings, sell-off of assets, employee layoffs, and wage reductions come into play, shareholders typically benefit from this mechanism.

Westphal (1999) studied board effectiveness and firm performance and found significant results in the survey data from 243 CEOs and 564 outside directors in April 1995. Westphal used multiple regression analysis and two measures of firm performance: return on equity - ROE (an accounting-based measure) and the market-to-book value of equity - MTB (a market-based measure) to investigate board involvement. The findings of this study suggested that board effectiveness may increase by encouraging collaboration between top managers and outside directors in strategic decision making. Judge and Zeithaml (1992) also found that a high proportion of inside directors on boards was associated with lower board involvement in strategic decision and a negative impact on firm performance.

Coles and Hesterly (2000) confirmed that there was a critical monitoring role for outside directors. They examined the independence of the chairman and board composition and shareholder value in the context of poison pill adoptions by using 247 sample firms reported in the financial press (i.e. the Wall Street Journal, the New York Times) during the period 1984-1986. Cumulative abnormal returns which are calculated by subtracting the announcement period return for the firm from a benchmark specific to that firm are used as a measure of shareholder value for analysis. Significantly, there is a relationship between the announcement period

market reaction to the adoption of a poison pill provision and outsider representation on the board. When leadership structure is not independent, the monitoring and control functions of outside directors are most important and most beneficial for shareholders. Brickley, Coles and Terry (1994) also indicated that outsiders represent shareholder interests better than inside directors. Gales and Kesner (1994), Daily and Dalton (1994a, 1994b) and Daily (1995) also confirmed that outside directors in the board of bankrupt firms are more likely to be highly involved in improving post-bankruptcy performance.

Further, the recent study of Peng (2004) was consistent with the study of Coles & Hesterly (2000) and Brickey et al. (1994). Peng's study was based on an archival database covering 405 publicly listed firms by taking advantage of China's institutional transitions. It was found that outside directors do make a difference in firm performance as measured by sales growth, but they have a little impact on financial performance as measured by return on equity (ROE).

However, some studies found that firms with a high proportion of outside directors perform worse, for example, the studies of Agrawal and Knoeber (1996) and Yermack (1996). They reported that there was an insignificant relationship between the proportion of outside directors and financial performance. Klein (1998) and Bhagat and Black (2002) also reported that their results show only minor relations between the number of outsiders on a board and financial performance measures. In addition, Johnson, Daily and Ellstrand (1996) and Dalton, (1998) reviewing the literature concerning these relationships found there was no relationship of a meaningful level and concluded that these were not of practical importance. It was noted that prior studies have offered mixed evidence on the relationship between outside directors and firm performance.

Under the Thai Bankruptcy Act, the planner and plan administrator are key governance mechanisms of the reorganization process. The planner has the duty to prepare a firm's formal reorganization plan in three to five months and manage a debtor firm during the preparation time. Once the court approves the plan and appoints the plan administrator, the duties of the planner immediately pass to him. The plan administrator must manage the debtor's business in accordance with the

plan until the reorganization of the debtor's business operations is achieved. The planner and plan administrator may be a person, company or group of persons and also insiders or outsiders. There are no regulations limiting the number of planners and plan administrators and their composition. Although the evidence from previous studies shows mixed results, a larger number of studies support the agency derived hypothesis that firms with more outside directors than insiders perform better. This leads to the following hypotheses:

*H1: There is a positive relationship between the proportion of outside directors in the planner of the firm and post-bankruptcy performance*³.

H2: There is a positive relationship between the proportion of outside directors in the plan administrator of the firm and post-bankruptcy performance.

3.3.3.2 Ownership concentration by the largest shareholder

Ownership concentration is also a monitoring mechanism. Shareholders with large ownership shares have strong incentives to monitor managerial activities because they are likely to receive substantial benefits from such monitoring (Jensen & Meckling 1976; Shleifer & Vishny 1986). However, the findings of some studies have suggested that while large shareholders monitor company management, they may exploit corporate assets for themselves rather than for shareholders' interests (Johnson, Boone, Breach & Friedman 2000; Shleifer & Vishny 1997). Consequently, this may account for the negative result obtained for ownership concentration. Empirical results of investigating the firm performance-ownership concentration relationship show mixed evidence.

Cubbin and Leech (1983) studied the effect of shareholding dispersion on the degree of control in British companies and found a positive relationship between ownership concentration and profitability, while Demsetz and Lehn (1985) on examining these

³ The definition of post-bankruptcy performance in the research hypotheses is described in Chapter 4.

relations in U.S. corporations, found an insignificant relationship between them. Later, Shleifer and Vishny (1986) studied large shareholders and corporate control and their findings from a sample of the Fortune 500 firms confirmed that the greater the percentage of ownership, the more expected profits.

Wruck (1989) studied equity ownership concentration and firm value from private equity financings and concluded that increased concentrated ownership from private equity sales have a positive effect on a stock price. McConnell and Servaes (1990) also studied equity ownership but their results found no effect of concentration on firm value as measured by Tobin's Q. Oswald and Jahera (1991) explored the influence of ownership on performance by using a large sample size and also by controlling firm size differences. Their findings show a significant level of ownership on financial performance as measured by excess stock returns even after controlling for size. Consistent with Oswald and Jahera (1991), the study of Leech & Leahy (1991) which used large British companies as a sample confirmed that ownership-controlled firms are profitable and fast growing. The effect of concentrated ownership enhances financial performance as measured by profit margins, rate of return on a shareholder's capital (ROE), rate of sales growth, and rate of growth of net assets.

Further, Bethel, Liebeskind and Opler (1998) investigated the consequences of block share purchases between 1980 and 1989 using a sample of U.S. firms and found that return on assets (ROA) as a proxy for a firm's operating performance improves in years two and three after the acquisition of large share blocks by activist shareholders. In the same year, Cho (1998) examined the relationship among ownership structure, investment and corporate value using ordinary least square regression with the control variables; firm size, financial leverage, and industry effect. Cho's findings suggested that ownership structure affects investment and, therefore, corporate value (Tobin's Q). Wiwattanakantang (1999) also studied the effect of ownership structure and corporate governance on performance. He used a sample of Thai firms and found that firms' major shareholders enhance higher profitability (ROA and Tobin's Q) compared to firms with no major shareholders. Consistent with Wiwattanakantang (1999), the study of Suehiro (2001) concerning ownership patterns and corporate performance in Thailand found statistically significant relationships among them as

measured by ROA and ROE. In addition, Gorton and Schmid (2000) explored concentrated ownership of German universal banks and the performance of German firms in the period 1975-1986 and also found a significant improvement of firm performance (ROA and the market-to-book ratio-MTB or Tobin's Q) to the extent that bank control rights from equity ownership are concentrated.

Nevertheless, recent research in many countries has revealed insignificant results of these relationships. Prowse (1992) studied the relationships in a sample of Japanese firms in the mid 1980s and found no effect of ownership concentration on profitability. Limpaphayom (2000) studied ownership concentration of Thai listed firms which was measured in terms of percentage of shareholdings by the five largest shareholders and found that there was not any statistically significant relationship between ownership concentration and return on assets (ROA). Demsetz and Villalonga (2001) examined sample firms from all sectors of the U.S. economy in the period 1976-1980 and also reported a negative relationship between them. Moreover, Holderness's (2003) survey findings on empirical research showed little evidence about the impact of large shareholders on firm value (Tobin's Q). Hovey, Li and Naughton (2003) also found no effect of concentrated ownership of Chinese listed firms during the period 1997-1999 on financial performance as measured by Tobin's Q.

The study of Claessens, Djankov, Fan and Lang (2002) in sample firms of eight East Asian countries in 1996 including Indonesia, Singapore, and Thailand found both incentive and entrenchment effects by focusing on the distinction between cash flow rights and control rights. They explained that cash flow rights are the rights which enable shareholders to receive dividends, while control rights allow shareholders to make decisions through voting. When the control rights of a shareholder exceed cash-flow rights, he has an incentive to make decisions that increase his benefits without any appropriate increase in a firm's overall cash flows. Using regression techniques, Claessens et al. (2002) found large shareholdings improved firm value (Tobin's Q) through better monitoring of managers, but reduced firm value when they abused their concentrated rights. Consistent with the empirical results of Claessens et al. (2002), Lemmon and Lins (2003) studied the effect of ownership structure on changes in shareholder value during the East Asian financial crisis that

began in July 1997. They found that the crisis which took place in eight East Asian countries had a negative shock on the investment opportunities of firms in these markets and raised the incentives of controlling shareholders to use corporate assets for their own interests. Further, in their study, the large separation between cash flow ownership and control rights that arises from the use of a pyramidal ownership structure in these markets suggests that corporate insiders have both the incentives and the abilities to engage in expropriation. Similar to the study of Lemmon & Lins (2003), Hanazaki and Lin (2003) used data from the five East Asian crisis economies of Indonesia, Korea, Malaysia, the Philippines, and Thailand in the period 1994-2000 and studied the impact of corporate governance on the performance of firms. Their results showed that ownership concentration that enabled controlling shareholders to expropriate other shareholders was associated with significantly worse performance.

In the reorganization process, Chapter 3/1 of the Thai Bankruptcy Act gives first priority to a shareholder of a debtor firm to file a petition for reorganization including the nomination of the planner and plan administrator for court approval (see Section 2.3 of Chapter 2). In this case, the reorganization plan and progress report of the plan implementation reveal that the shareholding of owners, especially the largest shareholder, is still involved in the management of reorganized firms as before bankruptcy. It is possible to say that during the time of reorganization when investment opportunities decline, large shareholders may attempt to use more power in monitoring business management to improve firm performance. In this regard, it may result in making positive effects on firm value and a success of reorganization. The above literature indicates that the effect of ownership concentration by the largest shareholder on performance is important. Many previous studies also found that ownership concentration can enhance the profitability of a firm at a significant level (e.g., Oswald & Jahera 1991; Bethel et al. 1998; Wiwattanakantang 1999; Gorton & Schmid 2000). This leads to the following hypothesis used in the thesis:

H3: There is a positive relationship between ownership concentration by the largest shareholder of the firm and post-bankruptcy performance.

3.3.4 Incentive mechanisms

In order to maximize shareholders' wealth, it is necessary to give fringe benefits to managers as well (Grant 1998). Compensation packages such as a profit-based bonus and stock options are efficient methods to improve the goal alignment of shareholders and managers. The advantage of using a profit-based bonus is that it can motivate managers to put more effort into managing the company to achieve company value. However, it also has relative high costs, the most obvious being that as the business environment is very complex, managers' efforts sometimes might not effectively relate to changes in market value. In this situation, if shareholders fail to deal with the problems carefully and fairly, it might influence the enthusiasm of managers which may lead to decreased performance of managers in the future. Once a negative cycle takes place in a company, shareholders and managers will both be both victims of this mechanism (Gupta & Bailey 2001).

For stock options, the advantages are very similar to the profit-based bonus. Many people often believe that it is more efficient because it can make the manager richer and create the feeling of ownership of the company rather than act as some purely materialistic reward. In other words, it makes managers feel they are working for themselves as well as for shareholders. Theoretically, this method is sound and it is widely applied by many companies such as Microsoft Corporation (Makadok 2003). Numerous studies support the use of incentive mechanisms for it is believed that this is an appropriate way that can help shareholders encourage managers to pursue company goals and overcome their tendency to shirk their duties or seek their own interests (Baiman & Demski 1980; Kim 1995; Harrison 2003).

3.3.4.1 Managerial remuneration for the plan administrator

Managerial remuneration such as salary, a profit-based bonus, and a stock option is an efficient incentive mechanism to improve the goal alignment of shareholders and managers (Grant 1998; Kaplan & Atkinson 1998). Jensen and Murphy (1990) suggested that stock options, equity ownership, performance-related-pay and performance-related dismissals can be included as part of remuneration packages in order to provide financial incentives for management to make value-maximizing and

opportunistic-attenuating behavior, and hence, increase company value. Based upon agency theory, there should be a positive relationship between managerial compensation and firm performance. Jensen and Meckling (1976) stated that higher levels of such incentives lead to higher firm performance. Fama (1980) also suggested that the wage determination process in managerial labor markets is a critical mechanism of agency theory.

Dyl (1988) examined the effect of monitoring activities on managerial compensation by using listed firms in the Fortune 500 companies during 1982, and through regression analysis found that the levels of management compensation affect the degree of corporate control that reduces the residual loss portion of agency costs. Jensen and Murphy (1990) investigated the pay-performance relationship for chief executive officers (CEO) by using the data of the Forbes surveys from 1974 to 1986. In their analysis, they measured a regression of change in CEO salary and bonus on changes in net accounting income measured before extraordinary items and found a statistically significant and positive relationship. Nevertheless, this empirical relation is small for an occupation in which incentive pay is expected to play an important role.

Goldberg and Idson (1995) also tested the degree of corporate control on executive remuneration, using data from the listed firms of Fortune 500 companies during the period 1980-1981. Their results which are consistent with Jensen and Murphy's (1990) study indicated that there was a significant agency effect on executive pay, though the total magnitude of the effect appears to be small, relative to company assets.

In addition, Mehran (1995) examined the executive compensation structure of randomly-selected small and large manufacturing firms 1979-1980 and found empirical evidence on the relationship between the form of compensation and firm value. The findings showed that the form, rather than the level, in particular equity-based compensation can motivate managers to increase firm value as measured by Tobin's Q and by return on assets (ROA). Fosberg and Rosenberg (2003) also investigated agency cost control mechanisms. Their results, which supported the study of Mehran (1995), suggested that share ownership by the firm's CEO is one of

the effective mechanisms in controlling a firm's agency costs. Using data of large firms from Business Week executive compensation studies from 1990 to 1996, the empirical test on regression analysis revealed that the mechanism can reduce the selling, general, and administration expenses to sales ratio and/or enhance firm value as measured by the firm's sales to total assets ratio.

In the Thai reorganization process, cash and equity compensation for the plan administrator is specified in the reorganization plan. There are different executive payments in each company and the plan administrators of some firms hold equity. Evidence from empirical studies in the literature generally confirms a significant link between executive remuneration and performance of the firms. Thus, it is possible to hypothesize that managerial remuneration for the plan administrators is likely to be related to financial performance improvement of insolvent firms. This leads to the following hypotheses:

H4a: There is a positive relationship between cash compensation for the plan administrator and post-bankruptcy performance.

H4b: There is a positive relationship between percentage shareholding of the plan administrator and post-bankruptcy performance.

3.3.5 Market mechanisms

Markets can enforce managers to redouble their efforts to increase company share price (Byrd, Parrino & Pritsch 1998). External stakeholders such as creditors and potential investors need to protect their interests as well as shareholders. In principle, the market knows how well managers do their work via market price per share of companies. The value of its stock is measured in terms of the value of the stream of future profits. If managers create stock value below its potential intrinsic value, the stock price will reflect the market that managers are not using a firm's resources very well. This situation can shake up the position of existing managers and is a way that the market enforces managers to improve profitability and increase the share price. If managers cannot improve financial performance efficiently, the market may use

mechanisms such as mergers, acquisitions, privatization and restructuring to develop and rebuild corporate value (Bruton, Keels & Scifres 2002). The other mechanism of the market is the managerial labor market. Managers must recognize that shareholders offer many incentives to managers because they want them to act to maximize stock value (Fama 1980). If managers do not work efficiently or create high company value, markets may change them. Managerial labor markets influence managers' careers because their job opportunities, salaries and fringe benefits depend upon performance.

3.3.5.1 Restructuring methods of insolvent firms

Based on agency theory, the market may use a number of strategies, for example; mergers, acquisitions, privatization, and restructuring as enforcement mechanisms to improve a firm's performance and to increase value for stakeholders (Jensen & Meckling 1976). Many managers use such strategies, particularly restructuring to reduce risks when they are under pressure by large shareholders (Bethel & Liebeskind 1993). Previous researchers attempted to define typical types of restructuring methods and study post-restructuring performance (i.e. Hite, Owers & Rogers (1987), Singh (1990), Opler (1992), Zahra (1995), Phan & Hill (1995), and Bruton, Keels & Scifres (2002). Statistically, empirical investigations of relationship between restructuring activities and a firm's performance show positive results.

Singh (1990) studied management buyouts as an important method of corporate restructuring in the period 1980-87 in order to investigate whether sample firms undergoing buyout have higher levels of financial performance than others in their respective industries. The results extend Maupin's (1987) findings and show post-buyout firms had better operating performances than their industry averages in the years preceding public offering. Muscarella and Vetsuypens (1990) also studied leverage buyouts (LBOs) of all firms that went public through July 1987 and found LBOs created real wealth gains and improvements in operating performance. Opler (1992) examined the consequence of LBOs on operating performance as well. Using a sample of 44 going-private transactions completed in the period 1985-1989, the results found increases in post-LBO operating cash flow to sales ratio in this sample and suggested that investors gained significant benefits from this activity. The study

of Zahra (1995) also found post-LBO company performance was higher by using a sample of manufacturing LBO firms in 1992. These results extend Bull's (1989) findings that financial performance after the buyouts is superior to performance before the buyouts.

Later, Bruton et al. (2002) investigated the performance and restructuring activities of 39 firms from the time preceding the buyout through the private buyout period and into the public reverse buyout period by a form of content analysis. They stated that earlier research on buyouts measured firm performance by using historical self comparisons because these comparisons have usually shown the performance improvements as expected by agency theory (Bull 1989; Muscarella & Vetsuypens 1990; Opler 1992; Singh 1990; Zahra 1995). Unlike these researchers, to capture the effect accurately, Bruton et al. (2002) used three different methods of performance evaluation; first, comparing the sample firm's performance to its own past performance, second, comparing each buyout firm's performance to its relevant industry averages, finally, comparing each sample buyout firm's performance to a strategic peer, a matching "no buyout" firm. However, even using different evaluations of performance, their results still support the results of prior studies. Performance, as measured by sales and profit margin, increased significantly during the time buyout firms were privately held. These performance improvements remained significant when controlling for industry effects, but sales improvements were not significantly different from those experienced by buyout firms' peers.

Duhaime and Grant (1984) studied corporate divestments as one type of restructuring method of large firms by conducting field research, emphasizing semi-structured personal interviewing as a data source of their study. The results of 40 of the 1979 "Fortune 500" firms suggested that a strong relationship between financial performance and divestment decision-making exists when a firm's financial strength, such as return on equity (ROE) is low. Further, Montgomery, Thomas and Kamath (1984) studied the relationship between the type of divestiture and the financial market valuation. Divestitures made by the "Fortune 500" firms and announced in the Wall Street Journal during the years 1976-1979 were the sample of their study. Similarly, the findings from empirical tests confirmed that overall, the market did value divestitures positively, and that the market performance as measured by

cumulative abnormal stock returns showed a significant positive relation with this strategy.

Hite, Owers and Rogers (1987) investigated the valuation consequences of restructuring methods, in particular, partial sell-offs of sample firms in the period 1963-1981 and found that the gains in terms of abnormal stock returns from this restructuring are positive and significant. Sicherman and Pettway (1987) also examined acquisitions of divested assets 1983-1985 to determine the gains to shareholders of acquiring firms. With cumulative abnormal stock returns, the results reported that acquiring firms had positive but insignificant gains. Phan and Hill (1995) studied the impact of some strategies on post-LBO firm performance by using survey research from information of leveraged buyout (LBO) firms between 1986 and 1989. The regression results confirmed that post-LBO performance as measured by change in productivity and profitability, improves after such strategies were implemented.

In the Thai reorganization process, the planner employs restructuring methods as efficient strategies for reorganization. Restructuring strategies in this thesis focus on three areas; operational, asset and financial restructuring following the concepts of Datta & Iskandar-Datta (1995), Bowman, Singh, Useem & Bhadury (1999), and Sudarsanam & Lai (2001). Operational restructuring involves strategies to change internal operations of a firm to improve its financial performance. Asset restructuring means strategies to change the assets of a business to help a firm survive financial distress and restore its profitability, whereas financial restructuring means strategies to change the capital structure between debt and equity to improve performance. The evidence from the Thai reorganization plans showed the methods of operational restructuring included cutting prices, reducing product diversification, reducing luxury/unnecessary costs and reengineering. The methods of asset restructuring included divestitures, asset sales, and asset investment. The methods of financial restructuring included a haircut strategy (reducing a loan principal), a refinancing strategy, and an equity strategy (dividend cuts or omissions and equity issues). It was seen that these methods embrace significant changes in financing, investment and operational structure in aligning the resources of the company (Reutner 1991; Weston, Mitchell & Mulherin 2003).

According to the above literature, involving several types of restructuring strategies and differing methods to evaluate post-restructuring performance, the results are consistent. Restructuring strategy is viewed as a vehicle to increase firm value, reduce agency problems and align the interests of managers with those of stakeholders (Bethel & Liebeskind 1993; Jensen & Meckling 1976). This leads to the following hypotheses:

H5a: There is a positive relationship between an operational restructuring strategy and post-bankruptcy performance.

H5b: There is a positive relationship between an asset restructuring strategy and post-bankruptcy performance.

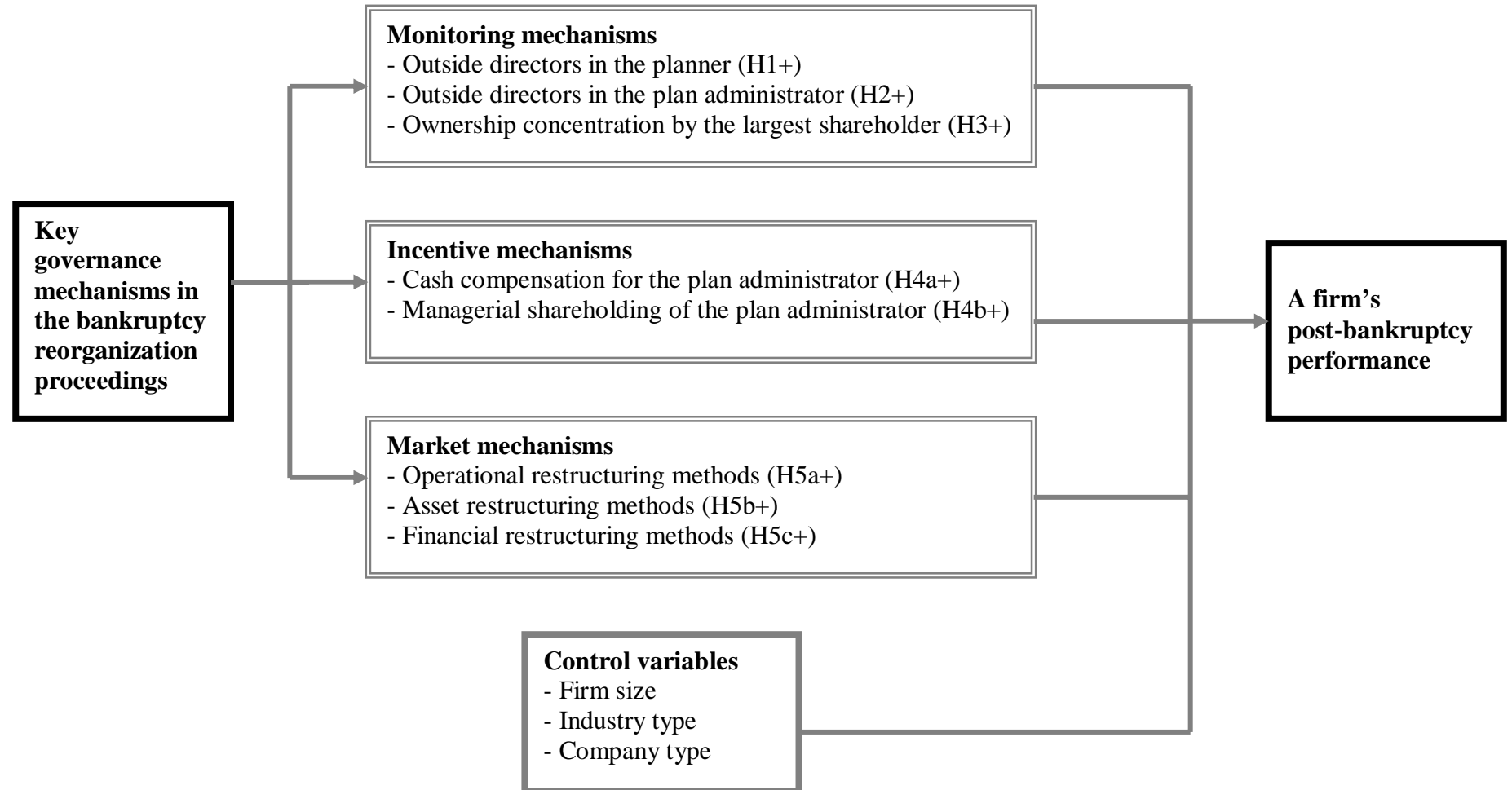
H5c: There is a positive relationship between a financial restructuring strategy and post-bankruptcy performance.

A list of the research hypotheses formulated is summarized in Table 3.1 and the research model of the study is shown in Figure 3.2.

Table 3.1: A list of research hypotheses of the study

| Hypotheses | Items |
|---------------|---|
| Hypothesis 1 | There is a positive relationship between the proportion of outside directors in the planner of the firm and post-bankruptcy performance. |
| Hypothesis 2 | There is a positive relationship between the proportion of outside directors in the plan administrator of the firm and post-bankruptcy performance. |
| Hypothesis 3 | There is a positive relationship between ownership concentration by the largest shareholder of the firm and post-bankruptcy performance. |
| Hypothesis 4a | There is a positive relationship between cash compensation for the plan administrator and post-bankruptcy performance. |
| Hypothesis 4b | There is a positive relationship between percentage shareholding of the plan administrator and post-bankruptcy performance. |
| Hypothesis 5a | There is a positive relationship between an operational restructuring strategy and post-bankruptcy performance. |
| Hypothesis 5b | There is a positive relationship between an asset restructuring strategy and post-bankruptcy performance. |
| Hypothesis 5c | There is a positive relationship between a financial restructuring strategy and post-bankruptcy performance. |

Figure 3.2: Research model of the study



3.4 Summary

The research design for this study is based on the positivist paradigm and agency theory underpins the theoretical framework. The main objective of the chapter is to explain the hypothesis development of the study.

According to the theoretical framework, agency theory indicates that the separation of ownership and control can cause several types of agency costs. The theory views shareholders and other stakeholders as principals and managers as agents. However, types of governance mechanisms in the theory namely monitoring, incentives and markets for corporate control are constructed to mitigate agency costs and enable improved firm performance. This study presents a model of agency theory which shows the theory's potentiality to align the agent's interest with stakeholders' in Figure 3.1. Empirical studies have attempted to investigate the efficiency of these mechanisms on firm performance. The research reveals that mechanisms which have been examined are outside directors, ownership concentration, executive remuneration and restructurings. Importantly, it was found that key governance mechanisms of the Thai bankruptcy reorganization proceedings were similar to these mechanisms. Thus, based on agency theory, key governance mechanisms of the Thai reorganization proceedings are likely to affect a firm's post-bankruptcy performance. This conceptual framework provides the foundation for the research model of the study which is shown in Figure 3.2.

With respect to monitoring mechanisms, many previous studies confirm that the expertise of outside directors can provide better monitoring which leads to better performance effectively (e.g., Morck et al. 1989; Coles & Hesterly 2000). A great deal of research that has investigated the relationship between ownership concentration and firm performance show mixed results. However, much research has indicated that ownership concentration by major shareholders is a significant mechanism that can create firm value (e.g., Cubbin & Leech 1983; Cho 1998; Suehiro 2001). Concerning incentive mechanisms, executive remuneration such as salary and stock options is suggested as one of key mechanisms that can motivate managers to create more shareholder value and reduce agency problems (e.g., Mehran 1995; Fosberg & Rosenberg 2003). Numerous studies assert that the

effectiveness of this mechanism can motivate managers to perform better in managing and achieving company goals. According to market mechanisms, corporate restructurings are also viewed as value-creating activities and can reduce managerial opportunism in agency problems (Singh 1990; Zahra 1995). Empirical studies which investigate the relationship between restructuring methods and firm financial performance show positive results (e.g., Hite et al. 1987; Bethel & Liebeskind 1993; Bruton et al. 2002).

The literature above and that reviewed in Chapter 2 together with information from the bankruptcy reorganization process of the Thai Bankruptcy Act leads to the research hypotheses of the study contained in Table 3.1.

The next chapter presents research methodology for the study. It contains measurements of all variables, the criteria for sample selection and data collection, data sources, data analysis and a formal model specification.

Chapter 4

Research Methodology

4.1 Introduction

The purpose of this chapter is to outline the research methodology used to test hypotheses formulated in Chapter 3. First, the definitions of technical terms used in the Thai bankruptcy reorganization proceedings in Section 4.2 are discussed. The variable measurement of all variables is defined and data sources of each variable are described in Section 4.3, sample selection and data collection are explained in Section 4.4, and model specification in Section 4.5.

4.2 Definitions of terms

This thesis investigates insolvent firms under the Thai Bankruptcy Act, and it is necessary to define the technical terms regarding the Thai bankruptcy reorganization proceedings used in the study. All definitions are derived from Thai laws namely the Bankruptcy Act, the Public Company Act and the Civil and Commercial Code including regulations of the Thai Central Bankruptcy court. They are as follows:

1. A formal reorganization plan is defined as the plan of a filing firm for reorganizing its business operations. According to law, it must be proposed by the appointed planner and submitted for approval to the bankruptcy court after being accepted at a creditor's meeting.
2. Post-bankruptcy performance is defined as the financial performance of an insolvent company under a formal reorganization plan.
3. A planner or plan preparer is defined as an appointed planner or plan preparer pursuant to Chapter 3/1 reorganization proceedings of the Thai Bankruptcy Act. The number of directors in the planner in each company is not limited by

the Thai Bankruptcy Act. Each company can have either one director or more depending on its need. In addition, as the law does not specify the kind of directors, they may be inside and/or outside directors.

4. A plan administrator is defined as an appointed plan administrator pursuant to Chapter 3/1 reorganization proceedings of the Thai Bankruptcy Act who has the duty to manage a reorganized firm in accordance with a formal reorganization plan until the reorganization of the debtor's business operations is achieved. According to this law, the number of directors in the plan administrator in each company is not limited and the kind of individuals is not specified by the law. The plan administrator may be either one director or more and inside and/or outside directors.
5. A public company is defined as one type of a limited liability company registered in Thailand and governed by the Public Company Act. The main characteristics are that: 1) a public limited company must have a minimum of 15 promoters for its formation, 2) the liability of any shareholder is equal to the amount that is paid on shares held by them, 3) ownership is open to any member of the public who has the inclination to buy shares in the company, 4) the shares are offered for trade on the open market, some companies may be listed firms in the Stock Exchange in Thailand (SET) and the shares are traded through SET to the public.
6. A private company is defined as one type of a limited liability company registered in Thailand and governed by the Civil and Commercial Code. The main characteristics are that: 1) a private limited company must have at least seven promoters, 2) the liability of any shareholder is equal to the amount that is paid on shares held by them, 3) ownership is not open to anyone in the public, the shares are normally held by a small group of individuals or members of families, 4) and the shares are not offered for trade on the open market.

4.3 Variable measurement

Based on the hypotheses in Chapter 3, there are 12 variables in the study, one dependent variable, 8 independent variables and 3 control variables. The measurement of variables is obtained and adapted from related prior studies and the data sources for each variable are presented as follows.

4.3.1 The dependent variable

A number of previous studies in the area of bankruptcy reorganization have evaluated a company's performance as a dependent variable by using a measure of accounting profits for at least two years to identify any improvement (e.g., Hotchkiss 1994, 1995; Alderson & Betker 1999). Hotchkiss (1994, 1995) and Dawley (1999) assessed recovery status in two through five years whereas Michel et al. (1998) and Alderson & Betker (1999) considered the sample firms' performance for the first three years following emergence from bankruptcy.

Consistent with previous studies, a firm's post-bankruptcy performance (PFOM) in this study is defined as the dependent variable. The study also evaluates a firm's performance in the first three years during reorganization (Michel et al. 1998; Alderson & Betker 1999). The Thai Bankruptcy Act specifies the normal period for implementing the reorganization plan as not exceeding five years. Thus, the three-year post-bankruptcy performance under the process is sufficient to show the ability and trend of the firm to survive from bankruptcy and continue its business operation.

Adapted from Hotchkiss's (1995) and Platt & Platt's (2002) study, PFOM of the study is also measured in terms of the difference of actual from projected performance. The measure is the three-year average value of the difference between actual profits before tax (APBT) and predicted profits before tax (PPBT) as a percentage of the absolute value of predicted profits before tax (PPBT) in years 1-3. The formula is:

$$PFOM = \frac{\sum_{i=1}^n x_i}{3}$$

Where:

$n = \text{Years 1-3 during the reorganization time}$

$X_i = \{(\text{APBT}_i - \text{PPBT}_i) / |\text{PPBT}_i|\} \times 100$

APBT = Actual profits before tax

PPBT = Predicted profits before tax

All data for the first three-year actual and predicted performances of each company are collected when its reorganization plan has been accepted by the court. The study gathers the data from three public sources including the databases of the Thai Central Bankruptcy Court, Bangkok, Thailand, the Department of Business Development at the Ministry of Commerce, Bangkok, Thailand, and the Stock Exchange of Thailand. The data regarding three-year predicted profits before tax are disclosed in the reorganization plans of insolvent firms which were collected in bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court, Bangkok, Thailand whereas the data involving the first three-year actual profits before tax during the reorganization time are disclosed in several sources. The main data source is the reorganized firms' progress reports detailing actual reorganization following the plan which were collected in bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court. In some cases, the progress reports did not contain all the data necessary for the study. In such cases, the additional data was sourced from financial statements of firms from the database of the Department of Business Development, the Ministry of Commerce, Bangkok, Thailand, and financial information of listed firms from the database of the Stock Exchange of Thailand.

4.3.2 Independent variables

Independent variables include three types of key governance mechanisms within the bankruptcy reorganization process namely monitoring, incentive and market mechanisms. Each has variable measurement and sources of data are as follows.

4.3.2.1 Monitoring mechanisms

4.3.2.1.1 Outside directors in the planner

As detailed in Chapter 3, the balance of evidence from empirical studies confirms that the expertise of outside directors can provide better monitoring which leads to improvement in post-bankruptcy performance (e.g., Daily 1995; Daily & Dalton 1994a, 1994b; Gales & Kesner 1994; Hermalin & Weisbach 1988; Westphal 1999). Daily (1995) employed the proportion of outside directors to investigate successful bankruptcy reorganization whereas the study of Gales and Kesner (1994) indicated that the proportion of outsiders in the board was important to firm value. Daily & Dalton (1994b) also used the proportion of independent directors as a measure of outside directors to examine board composition of bankrupt firms. Thus, following prior research, the proportion of outside directors in the planner was employed to measure outside directors in the planner (OUTPLA). The details on directors in the planner are shown in the reorganization plans of insolvent firms. All data were obtained from bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court collected at the time bankruptcy reorganization of insolvent firms had been approved by the court. The measure is calculated by dividing the number of outside directors in the planner by the total number of directors in the planner. The formula is as follows:

$$\text{OUTPLA} = \frac{\text{No. of outside directors in the planner}}{\text{Total no. of directors in the planner}}$$

4.3.2.1.2 Outside directors in the plan administrator

In a similar way to OUTPLA, to measure outside directors in the plan administrator (OULPLAD), the proportion of outside directors in the plan administrator is calculated. The details about directors in the plan administrator are disclosed in the reorganization plans of insolvent firms as well. The data are derived from bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court. OUTPLAD is calculated by dividing the number of outside directors in the plan

administrator by the total number of directors in the plan administrator. The measure is:

$$\text{OUTPLAD} = \frac{\text{No. of outside directors in the plan administrator}}{\text{Total no. of directors in the plan administrator}}$$

4.3.2.1.3 Ownership concentration by the largest shareholder

The literature in Chapter 3 shows that the relationship between ownership concentration and firm performance has been investigated extensively even though the results are mixed. Many previous studies used the percentage of outstanding common shares owned by large shareholders to be a measure of ownership concentration, for example, Prowse (1992) and Limpaphayom (2000) used the percentage of common shares held by the largest five shareholders of the firm to measure concentrated ownership. Claessens, Djankov, Fan and Lang (2002) used various types of shareholding of owners as ownership concentration measures and the percentage of common shares held by the largest shareholders was one of those in their study. Consistent with these studies, the study employs the proportion of common shares held by the largest shareholding of the firm to proxy for ownership concentration (OWNER). All data were collected at the end of the first three-year performance during reorganization from two public sources. First is the register of common shareholders of each firm from the database of the Department of Business Development, the Ministry of Commerce, Bangkok, Thailand and second is the list of major shareholders of each listed company from the database of Stock Exchange of Thailand. It is calculated by dividing the number of common shares held by the largest shareholder by the total number of common shares. The measure is:

$$\text{OWNER} = \frac{\text{No. of common shares held by the largest shareholder}}{\text{Total number of common shares}}$$

4.3.2.2 Incentive mechanisms

4.3.2.2.1 Cash compensation for the plan administrator

According to prior research, cash compensation is an effective mechanism that can motivate managers to increase firm value (Fama 1980; Jensen & Meckling 1976). The amounts of executive pay in terms of salary, bonus and fees have been used as a measure in articles in the literature review (e.g., Goldberg & Idson 1995; Jensen & Meckling 1976; Jensen & Murphy 1990; Patton 1951) and found that they had a positive relationship with profitability of the firm (Dyl 1988; Fama 1980). In the reorganization plan, cash compensation (LNCAPLAD) is a managerial remuneration for the plan administrator. Thus, consistent with prior research, this variable is intended to measure the amounts of cash compensation for the plan administrator and to examine its relationship with post-bankruptcy performance. The data are disclosed in the reorganization plans of insolvent firms and their progress reports that were submitted to the official receiver. The data were obtained from bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court. The measure expresses how many Baht an executive is paid each month in terms of the natural log as suggested by prior research (e.g., Evans 2000; Evans, Evans & Loh 2002). The formula is:

$$\text{LNCAPLAD} = \text{Log (cash compensation for the plan administrator in Baht per month)}$$

4.3.2.2.2 Managerial shareholding of the plan administrator

As suggested in the literature, equity-based management compensation may lead to improved firm performance (Fosberg & Rosenberg 2003; Kaplan & Atkinson 1998; Mehran 1995). Following the reorganization plan, managerial shareholding (SHPLAD) is another form of possible managerial remuneration for the plan administrator. Fosberg & Rosenberg (2003) and Mehran (1995) used this form to measure executive compensation of chief executive officers and found that it was an effective mechanism that can enhance firm value. Thus, similar to these studies, the study employs the percentage of common shares held by the plan administrator as a measure of managerial shareholding which is considered to be associated with post-

bankruptcy performance. The data are located in a number of public sources – 1) the reorganization plans of insolvent firms in bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court, Bangkok, Thailand, 2) the register of common shareholders of each firm in the database of the Department of Business Development, the Ministry of Commerce, Bangkok, Thailand, and 3) the list of major shareholders of each listed company in the database of Stock Exchange of Thailand. The study collected the data from the database of the Department of Business Development, the Ministry of Commerce, Bangkok, Thailand and the database of Stock Exchange of Thailand at the end of the first three-year firm performance under the reorganization plan. The formula is:

$$\text{SHPLAD} = \frac{\text{No. of common shares held by the plan administrator}}{\text{Total number of common shares}} \times 100$$

4.3.2.3 Market mechanisms

4.3.2.3.1 Restructuring methods of insolvent firms

Based on agency theory and past research, a firm's restructuring strategy is a significant mechanism that can reduce managerial opportunism and improve firm performance (e.g., Jensen & Meckling 1976; Bethel & Liebeskind 1993; Bruton et al. 2002). Following discussion in Section 3.3.5.1 of Chapter 3, restructuring strategies in this thesis are divided into three types; operational restructuring (ORSTR), asset restructuring (ARSTR), and financial restructuring (FRSTR). All data are found in the reorganization plans of insolvent firms and their progress reports that were submitted to the official receiver. The data were obtained from bankruptcy reorganization filings within the database of the Thai Central Bankruptcy Court and collected during the first three-year performance post reorganization.

In accordance with past research, for example, Duhaime & Grant 1984; Montgomery et al. 1984; Bruton et al. 2002, this study uses a categorized variable (1, 0) to measure each type of restructuring. The dummy variable of ORSTR is one for operational restructuring and zero otherwise. The dummy variable of ARSTR is one

for asset restructuring and zero otherwise. And the dummy variable of FRSTR is one for financial restructuring and zero otherwise. These measures capture the frequency of each strategy used for reorganization by each company in the sample.

4.3.3 Control variables

This study will include firm size, industry and company type as control variables in the model as they may be related to the ability of insolvent firms to achieve successful reorganization and improved post-bankruptcy performance (Gales & Kesner 1994). All control data are available in the database of the Thai Central Bankruptcy Court, Bangkok, Thailand. They were collected at the time that insolvent firms in the sample had been ordered for bankruptcy reorganization and the plans had been approved by the court. The definition and measurement of each control variable is described as follows:

Firm size is commonly used by prior researchers in this field. In accordance with the studies of Hotchkiss (1995), Agrawal & Knoeber (1996), Hotchkiss & Mooradian (1997), Fayez & Meyer (2001) and Dahiya et al. (2003), the firm size (LNSIZE) of this study is measured by the natural log of the total assets in the firm in million Baht. Total assets are defined as the book value of total assets as of the date the court issued the order for reorganization of the firm. The measure is:

$$\text{LNSIZE} = \text{Log} (\text{Book value of total assets in the firm in million Baht})$$

Industry type was also suggested as a control variable in previous studies (e.g., Lee, Lucius & McNeil 1999; Peng 2004). According to the research by the Economic Indicator Section, Economic Research Department, Bank of Thailand (Siksamat 1999), 400 medium and large firms in their sample were classified in two types – manufacturing and non-manufacturing sectors to explore the economic condition of business firms in Thailand after financial and economic crises in 1997. In their results, the Business Sentiment Index (BSI) - the company's profits and investment indicated that firms in the manufacturing sector performed better relative to the non-manufacturing sector. These results imply that industry types may influence Thai firms' economic performance. Thus, following a classification of industry types by Siksamat (1999), industry type (INDSTR) of Thai insolvent firms in the sample will

be defined as manufacturing and non-manufacturing. It will be measured by a dummy variable that equals one if the firm is in the manufacturing industry, and zero for other industries.

Thai insolvent firms that filed a petition for reorganization under the Thai Bankruptcy Act are both public and private companies. Based on the definitions of terms in Section 4.2, they are different in ownership structure. Empirical research indicates that such a difference has an impact on firm value (Krause 1988; Kroll, Wright, Toombs & Leaveil 1997; Poensgen & Thonet 1979). Thus, following the results of past research, company type of reorganized firms may influence mechanisms of the process through their abilities to deal with financial distress and consequently may affect a firm's performance. Therefore, company type (TYPE) in this study will be controlled. To measure it, the study uses a dummy variable for a proxy of types of company. The dummy variable (1,0) is one if the firm is a public company, and zero if the firm is a private company.

All variable measures are summarized in Table 4.1.

Table 4.1: A list of measures of variables

Panel A. A dependent variable

| Variable | Measurement |
|---|--|
| A firm's post-bankruptcy performance (PFOM) | The three-year average value of the difference between actual profits before tax and predicted profits before tax as a percentage of the absolute value of predicted profits before tax in years 1-3 |

Panel B. Independent variables

| Variables | Expected sign | Measurement |
|--|---------------|--|
| Monitoring mechanisms: | | |
| Outside directors in the planner (OUTPLA) | + | The proportion of outside directors in the planner |
| Outside directors in the plan administrator (OUTPLAD) | + | The proportion of outside directors in the plan administrator |
| Ownership concentration by the largest shareholder (OWNER) | + | The proportion of common shares held by the largest shareholder of the firm |
| Incentive mechanisms: | | |
| Cash compensation for the plan administrator (LNCAPLAD) | + | The natural log of amounts of cash compensation for the plan administrator in Baht per month |
| Managerial shareholding of the plan administrator (SHPLAD) | + | The percentage of common shares held by the plan administrator |
| Market mechanisms: | | |
| Operational restructuring methods (ORSTR) | + | Dummy variable (1,0) 1 for operational restructuring or 0 otherwise |
| Asset restructuring methods (ARSTR) | + | Dummy variable (1,0) 1 for asset restructuring or 0 otherwise |
| Financial restructuring (FRSTR) | + | Dummy variable (1,0) 1 for financial restructuring or 0 otherwise |

Table 4.1 (continued)

Panel C. Control variables

| Variables | Measurement |
|------------------------|---|
| Firm size (LNSIZE) | The natural log of the book value of total assets in the firm in million Baht |
| Industry type (INDSTR) | Types of industry 1 = Manufacturing 0 = Others |
| Company type (TYPE) | Types of company 1 = Public company 0 = Private company |

4.4 Sample selection and data collection

Insolvent companies which filed petitions for Chapter 3/1 bankruptcy reorganization are screened as samples. The selection criteria is that they must be a company filing for reorganization under the Thai Bankruptcy Act and the court has already accepted the reorganization plan and appointed their plan administrator. The periods for gathering filing companies whose plans have been confirmed by the court are between January 1999 and December 2002. They come from the database of the Thai Central Bankruptcy Court, Bangkok, Thailand. The primary investigation found that 111 companies had met the selection criteria. They included both large private (76) and public (35) companies in various industries which owed creditor(s) at least 10 million Baht. The list of all sample firms is shown in Appendix 2.

Table 4.2: The number of sample firms each year 1999 - 2002

| Year (that plans were accepted by the court) | Total No. of firms each year | No. of private firms | No. of public firms |
|--|---------------------------------|-------------------------|------------------------|
| 1999 ¹ | 1 (0.9%) | 0 | 1 |
| 2000 | 16 (14.4%) | 5 | 11 |
| 2001 | 48 (43.2%) | 36 | 12 |
| 2002 | 46 (41.4%) | 35 | 11 |
| Total | 111 (100.0%) | 76 (68.5%) | 35 (31.5%) |

¹ The court opened on June 18, 1999.

Table 4.2 shows the number of sample firms each year that received court approval for reorganization and whose plans had been confirmed by the court 1999 – 2002. This table indicates that in the first two years of opening the court, there were only 17 companies in the bankruptcy reorganization process. The number of firms filed for reorganization increased in 2001 and 2002. In total, approximately two-thirds of the reorganized firms (68.5%) were private while the remaining 35 firms (31.5%) were public.

The schematic below illustrates the dating convention used to describe performance.



P represents the year a firm filed a petition for reorganization. C represents the year the firm’s plan of reorganization was accepted by a creditor’s meeting and confirmed by the bankruptcy court. Performances for the time between P and C during that process are not considered. Year +1, +2, +3 represent the first, second, and third full years respectively of post-bankruptcy results.

Following the schematic diagram, data for analysis were collected during the period 1999 - 2005. The data of each company contain information about governance mechanisms under the plan including the first three-year predicted and actual performance in terms of profits before tax. All data were extracted from three public

sources. The data involving the confirmed reorganization plan, progress reports of the first three-years operation under the plan and other related information were obtained from the database of the Thai Central Bankruptcy Court which is the core database used in this study. Ownership and managerial shareholding data were collected from the database of the Department of Business Development, the Ministry of Commerce and the database of the Stock Exchange of Thailand. Financial data of companies were also obtained from these sources.

4.5 Model specification

The study employs the ordinary least squares regression analysis to investigate the effect of governance mechanisms of the bankruptcy reorganization proceedings on post-bankruptcy performance. Following from the variable measurement described in Section 4.3, the proposed research model can be expressed as follows.

$$\begin{aligned} \text{PFOM} = & \alpha + \beta_1(\text{OUTPLA}) + \beta_2(\text{OUTPLAD}) + \beta_3(\text{OWNER}) + \beta_4(\text{LNCAPLAD}) \\ & + \beta_5(\text{SHPLAD}) + \beta_6(\text{ORSTR}) + \beta_7(\text{ARSTR}) + \beta_8(\text{FRSTR}) + \beta_9(\text{LNSIZE}) \\ & + \beta_{10}(\text{INDSTR}) + \beta_{11}(\text{TYPE}) + \varepsilon \end{aligned}$$

Where:

α = A constant term

$\beta_1 \dots \beta_{11}$ = Coefficient of each variable

PFOM = The three-year average value of the difference between actual profits before tax and predicted profits before tax as a percentage of the absolute value of predicted profits before tax in Years 1-3

OUTPLA = The proportion of outside directors in the planner

OUTPLAD = The proportion of outside directors in the plan administrator

OWNER = The proportion of common shares held by the largest shareholder of the firm

LNCAPLAD = The natural log of amounts of cash compensation for the plan administrator

SHPLAD = The percentage of common shares held by the plan administrator

ORSTR = Dummy variable (1,0) 1 for operational restructuring or 0 otherwise

ARSTR = Dummy variable (1,0) 1 for asset restructuring or 0 otherwise

FRSTR = Dummy variable (1,0) 1 for financial restructuring or 0 otherwise

LNSIZE = The natural log of the total assets in the firm

INDSTR = Types of industry; 1 for manufacturing, 0 for others

TYPE = Types of company; 1 for public company, 0 for private company

ε = An error term

4.6 Summary

This chapter introduced the research methodology for the study. It is designed to examine the relationship between monitoring, incentive and market mechanisms within the bankruptcy reorganization process and a firm's post-bankruptcy performance.

The definitions of all variables, their measurements, data sources and timing of data collection are described. A summary of measures of variables is outlined in Table 4.1. The chapter also outlines the criteria for selecting the sample and data collection. The list of all sample firms includes those whose plans were accepted by the Thai Central Bankruptcy Court 1999-2002 and is attached in Appendix 2. The data gathered for analysis took place between January 1999 and December 2005 following the schematic diagram in Section 4.4. The information on governance mechanisms of the bankruptcy reorganization process and the first three-year predicted and actual performance in terms of profits before tax were extracted from three public sources. They are the database of the Thai Central Bankruptcy Court, the database of the Department of Business Development, the Ministry of Commerce and the database of the Stock Exchange of Thailand. Finally, the chapter specifies the OLS regression model based on hypotheses in Chapter 3.

The next chapter will present the results of the descriptive analysis. It will show the characteristics of all variables and the relationships between key governance mechanisms of the process and a firm's post-bankruptcy performance. These results will be helpful for developing an understanding of the main features of variables in the sample and suggest the critical factors for successful reorganization.

Chapter 5

Descriptive analysis of sample data

5.1 Introduction

This chapter presents an analysis of the variables used in the study. The analysis is undertaken primarily through the use of descriptive statistics. The findings and discussions are shown in the following sections. Section 5.2 reports the results of a firm's post-bankruptcy performance, the number of firms reporting positive and negative percentage differences of post-bankruptcy performance and the relationships with other variables. Section 5.3 discusses the findings in relation to the independent variables and Section 5.4 addresses the analysis of control variables.

5.2 The dependent variable

In Chapter 4, a firm's post-bankruptcy performance (PFOM) is designed as the dependent variable in terms of the first three-year actual profits before tax during the reorganization time. Table 5.1 shows a summary of descriptive statistics of actual profits before tax (APBT) and predicted profits before tax (PPBT). As can be seen, mean scores of APBT in years 1, 2, 3 were 496.96, 11.50 and 104.33 million Baht, respectively, whereas mean scores of PPBT were -22.08, 10.56 and 43.83 million Baht, respectively. Median values of APBT in each year were -12.83, -5.33 and 0.00, respectively showing negative and zero results and lower scores than those of PPBT (-6.88, 0.00, and 2.28, respectively). Figures 5.1 and 5.2 display the performance of reorganized firms in the sample and show an improvement over the three-year period.

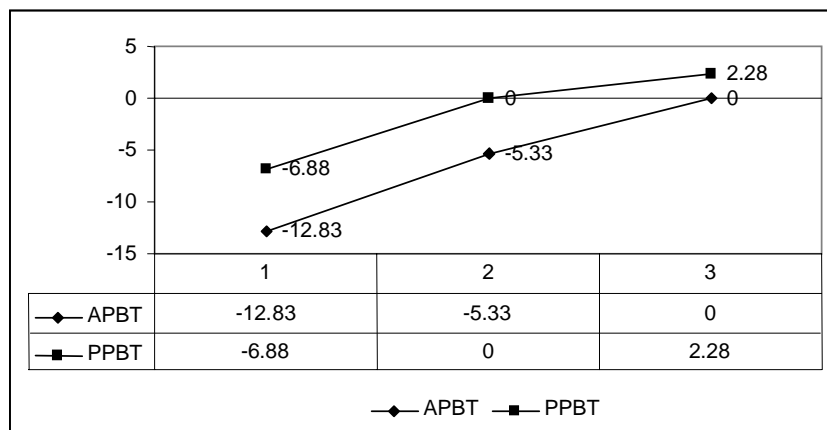
Table 5.1: Mean, median and standard deviation of actual and predicted post-bankruptcy performances in each year

| Year during the reorganization time | Mean | | Median | | Std. Deviation | |
|-------------------------------------|-------------------|-------------------|--------|-------|----------------|--------|
| | APBT ¹ | PPBT ² | APBT | PPBT | APBT | PPBT |
| 1 | 496.96 | -22.08 | -12.83 | -6.88 | 2685.18 | 474.89 |
| 2 | 11.50 | 10.56 | -5.33 | 0.00 | 360.04 | 280.25 |
| 3 | 104.33 | 43.83 | 0.00 | 2.28 | 784.51 | 244.97 |

Notes: 1. APBT = Actual profits before tax in million Baht
 2. PPBT = Predicted profits before tax in million Baht
 3. Total sample companies = 111 insolvent companies

Figure 5.1 presents graphs of median values of the first three-year actual and predicted profits before tax of 111 firms. It can be seen that the median line of actual profits before tax (APBT) gradually nears the median line of predicted profits before tax (PPBT). These results indicate that overall, insolvent firms' performances improved while reorganization plans were being implemented.

Figure 5.1: A comparison of three-year performance between median predicted and actual profits before tax



Notes: APBT = Actual profits before tax in million Baht
 PPBT = Predicted profits before tax in million Baht

Figure 5.2 reports the percentage difference of post-bankruptcy performance (PFOM) for each firm. According to Section 4.3.1 in Chapter 4, PFOM is measured in a form of the three-year average value of the difference between actual profits before tax and predicted profits before tax as a percentage of the absolute value of predicted profits before tax in years 1-3. As shown in this figure, the line of PFOM indicates that most have percentage differences of performance near zero suggesting some accuracy in the three-year period.

Figure 5.2: Post-bankruptcy performance (PFOM) of each reorganized firm

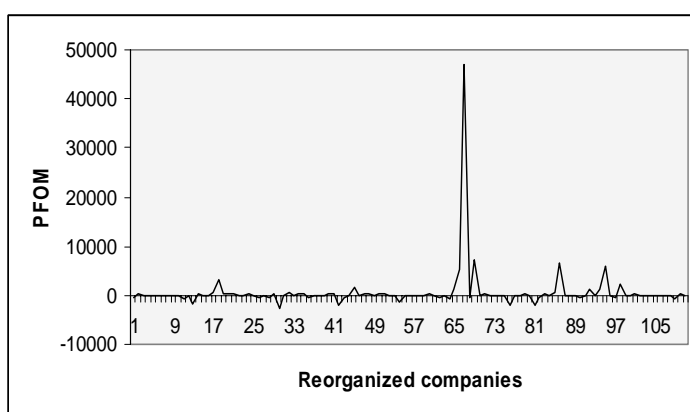


Table 5.2 illustrates the number of firms reporting positive and negative percentage differences of post-bankruptcy performance (PFOM). The findings show that of the samples, 67 firms (60%) have positive percentage differences and 44 firms (40%) have negative percentage differences. The results in each company type are also similar to the results in total. Forty-four private firms (58%) and 23 public firms (66%) have positive results while 32 private (42%) and 12 public (34%) have negative results. This evidence suggests that main governance mechanisms in the reorganization proceedings can enable the majority of insolvent companies to continue their business to meet or exceed financial expectation. It can be said that the recovery rate of Thai insolvent firms in this study is around sixty percent.

Table 5.2: Positive and negative percentage differences of post-bankruptcy performance

| Characteristic difference | Total sample firms | Private firms | Public firms |
|-----------------------------------|--------------------|----------------|----------------|
| 1) Positive percentage difference | 67 firms, 60% | 44 firms, 58% | 23 firms, 66% |
| 2) Negative percentage difference | 44 firms, 40% | 32 firms, 42% | 12 firms, 34% |
| Number of firms | 111 firms, 100% | 76 firms, 100% | 35 firms, 100% |

Table 5.3 examines how positive and negative percentage differences of performance (PFOM) relate to the features of key governance mechanisms of the process and control variables. The key governance mechanisms include three types of mechanisms; monitoring, incentive and market mechanisms and control variables consist of firm size, industry and company type.

According to monitoring mechanisms - the planner, the plan administrator and the ownership concentration by the largest shareholder, the results show that more than 60% of both groups use inside directors as their planner and plan administrator. However, the percentages of the use of these mechanisms between inside and outside directors of each group are different. The percentage of companies using inside directors in the planner in the positive group, 43 (64%) was higher than in the negative group, 27 (61%) but the percentage of companies in the positive group which used at least one outside director in the planner, 24 (36%) was lower than in the negative group, 17 (39%). Contrary to the planner, the negative group shows the percentage of the use of inside directors in the plan administrator, 31 (71%) higher than in the positive group, 46 (69%) whereas the percentage of the use of at least one outside director as the plan administrator in the negative group, 13 (29%) was lower than in the positive group, 21 (31%). Also, there are a number of differences in the percentage of the use of ownership concentration by the largest shareholder between the positive and negative groups. Although most (around 55% - 60%) in both groups had ownership concentration in the range of equity which is equal or less than 50%, the percentage in the positive group appears to be higher (60%). In the range of equity shareholding more than 50%, the figures show that the percentage of

companies in the negative group had a higher figure, 20 (45%) than in the positive group, 27 (40%).

For Incentive mechanisms (managerial remuneration for the plan administrator), the results show that most companies in both groups paid cash compensation (around 75% -76%) and allocated common shares (66% - 68%) to the administrator. It can be noticed that both groups used cash compensation to motivate the administrator more than managerial shareholding and the positive group, 51 (76%) was a higher percentage than the negative group, 33 (75%). However, the figures argued that the percentage of the use of managerial shareholding in the positive group, 44 (66%) was lower than that in the negative group, 30 (68%).

Market mechanisms are divided into three restructuring types including operational, asset and financial restructurings. From the table, all companies used restructuring methods for reorganization in terms of financial restructuring (100%), operational restructuring (58% - 64%), and asset restructuring (32% - 43%). As can be seen, there was no difference of the percentage of the use of financial restructuring in both groups. Both, positive and negative groups used operational restructuring more than asset restructuring. Apparently, the percentage of the use of operational restructuring in the positive group, 39 (58%) was lower than that in the negative group, 28 (64%) whereas the percentage of the use of asset restructuring in the positive group, 29 (43%) was higher than that in the negative group, 14 (32%).

As regards control variables, the figures show that firm size in both groups was different. Thirty companies (45%) in the positive group had a size below median of total assets (855 million Baht) whereas 37 companies (55%) in this group had a size above median. Contrary to these results, 25 companies (57%) in the negative group had a size below median and 19 companies (43%) had a size above median. Noticeably, the majority of the positive group had a size above median whereas the majority of the negative group had a size equal and less than median. For industry type, 37 (55%) and 30 (45%) in the positive group were non-manufacturing and manufacturing companies, respectively whereas 21 (48%) and 23 (52%) in the negative group were non-manufacturing and manufacturing companies, respectively. Like firm size, the majority of companies in each group were different in industry

type. Fifty-five percent of companies that had positive performances were non-manufacturing companies, while the majority (52%) of the negative group was in the manufacturing industry. Finally, as for company type - the majority (around 66% - 73%) of both groups were private companies. Although the positive group had private companies, 44 (66%) more than public companies, 23 (34%), the figures show that the negative group had a higher percentage (73%) for private but a lower percentage (27%) for public.

These results indicate that there are a number of differences of the features of key governance mechanisms of the process and control variables in companies that had positive and negative PFOM. The details of descriptive statistics of these variables are shown in Sections 5.3 and 5.4.

Table 5.3: A comparison of companies with positive and negative post-bankruptcy performance (PFOM⁴)

| Variables | Positive PFOM (67 companies) | Negative PFOM (44 companies) |
|---|---------------------------------|---------------------------------|
| Key governance mechanisms in the process: | | |
| Monitoring mechanisms: | | |
| 1. Planner - Inside directors only | 43 (64%) | 27 (61%) |
| - At least one outside director | 24 (36%) | 17 (39%) |
| <hr/> | | |
| 2. Plan administrator - Inside directors only | 46 (69%) | 31 (71%) |
| - At least one outside director | 21 (31%) | 13 (29%) |
| <hr/> | | |
| 3. Ownership concentration by the largest shareholder | | |
| - equal or less than 50% | 40 (60%) | 24 (55%) |
| - more than 50% | 27 (40%) | 20 (45%) |
| <hr/> | | |
| Incentive mechanisms: | | |
| 4. Managerial remuneration | | |
| 4.1 Cash compensation -Yes | 51 (76%) | 33 (75%) |
| - No (Nil compensation) | 16 (24%) | 11 (25%) |
| 4.2 Managerial shareholding -Yes | 44 (66%) | 30 (68%) |
| -No (Nil shareholding) | 23 (34%) | 14 (32%) |
| <hr/> | | |
| Market mechanisms: | | |
| 5. Restructuring methods | | |
| 5.1 Operational restructuring -Yes | 39 (58%) | 28 (64%) |
| -No | 28 (42%) | 16 (36%) |
| 5.2 Asset restructuring -Yes | 29 (43%) | 14 (32%) |
| -No | 38 (57%) | 30 (68%) |
| 5.3 Financial restructuring -Yes | 67 (100%) | 44 (100%) |
| -No | - | - |
| <hr/> | | |
| Control variables: | | |
| 1. Size - Below median of total assets | 30 (45%) | 25 (57%) |
| - Above median of total assets | 37 (55%) | 19 (43%) |
| 2. Industry - Non-manufacturing | 37 (55%) | 21 (48%) |
| - Manufacturing | 30 (45%) | 23 (52%) |
| 3. Type - Private Company | 44 (66%) | 32 (73%) |
| - Public Company | 23 (34%) | 12 (27%) |

⁴ PFOM = The three-year average value of the difference between actual profits before tax and predicted profits before tax as a percentage of the absolute value of predicted profits before tax in years 1-3

5.3 Independent variables

The independent variables of the study are the main governance mechanisms within the Thai reorganization proceedings. They are described as follows.

5.3.1 Monitoring mechanisms

The monitoring mechanisms in the Thai bankruptcy reorganization process are the planner, the plan administrator and ownership concentration by the largest shareholder. The literature in Chapter 2 reveals that the planner and the plan administrator have an important role in successful reorganization and the definitions of terms in Chapter 4 also specify that the number and kind of directors in the planner and plan administrator in each company is not limited by the Thai Bankruptcy Act. Bankrupt firms may establish a team of them to monitor their businesses. In addition, they may be inside or outside directors.

Ownership concentration has played an important role in the business community of the Thai economy since the late 1950s (Dhnadirek & Tang, 2003). The family business was embedded in the Thai companies even if they became public. Family members as major shareholders are often insiders and dominate a company's business management. As mentioned in Chapter 2, a major shareholder still plays the important role in the bankruptcy reorganization process as well. He or she can file a petition for reorganization and nominate the planner. For this study, concentrated ownership is measured by the proportion of common shares held by the largest shareholding of the firm. Thus, the role of the largest shareholder of the insolvent firm will be examined to determine whether ownership concentration has a discernible impact on post-bankruptcy performance.

5.3.1.1 The planner

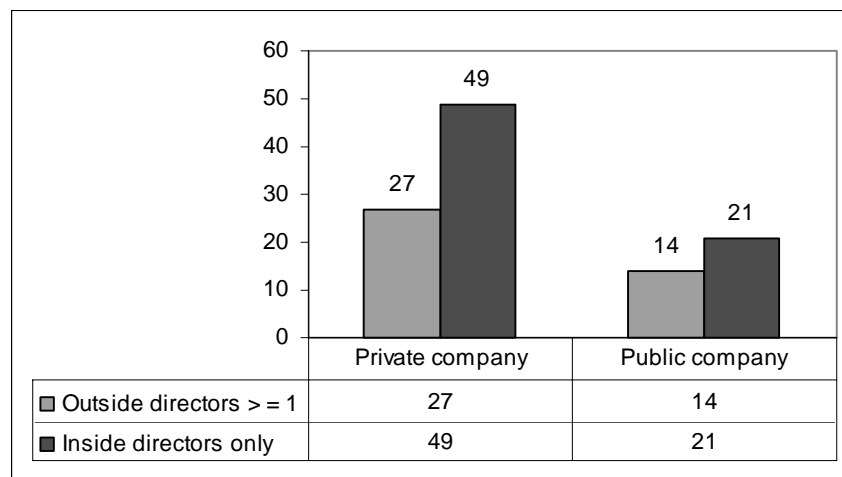
Figure 5.3 presents outside and inside directors in the planner of bankrupt sample companies. Figure 5.3(A) reveals that the majority of bankrupt firms, both private and public, set inside directors as their planner rather than outside directors. Only 41

companies (37%) hired at least one outside director, whereas 70 companies (63%) used inside directors to propose the reorganization plan.

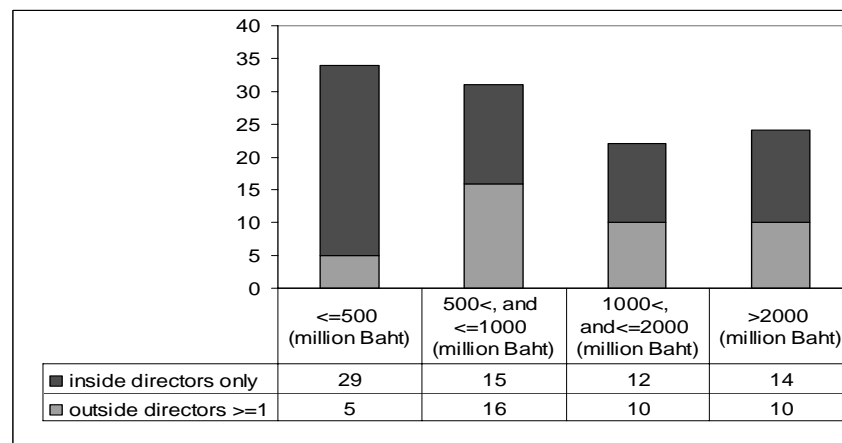
Figure 5.3(B) discloses that the numbers of companies using at least one outside director increase when bankrupt firms are classified by firm size. The evidence indicates that although large numbers use inside directors in the planner in firms with a size less than 500 million Baht, firms with more than 500 million Baht tend to increase the use of outside directors. This result suggests that outside directors in the planner play an important role in larger firms.

Figure 5.3: Outside and inside directors in the planner of bankrupt sample companies

A: Outside and inside directors classified by company type



B: Outside and inside directors classified by firm size (total assets)



5.3.1.2 The plan administrator

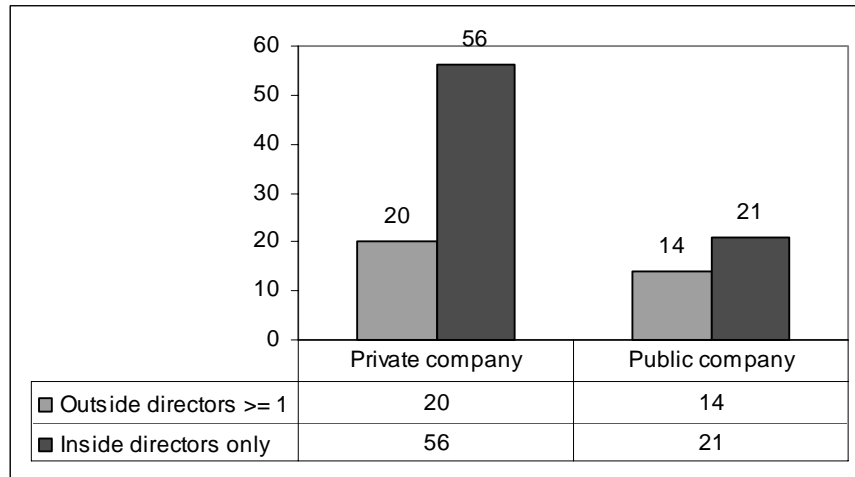
Figure 5.4 shows outside and inside directors as the plan administrator of bankrupt sample companies. As was the case with the planner, 56 private companies and 21 public companies chose inside directors as plan administrators. Only 20 private companies and 14 public companies chose outside directors.

A comparison of Figure 5.4(A) with Figure 5.3(A) indicates that public companies employed the same number of outside directors as did the planners. Planners were still hired after the plan had been prepared and approved by the court, but did not undertake the same duties, as the plan administrator to implement the plan. Meanwhile, private companies that employed outside directors in the planner decreased their numbers and employed inside directors instead to manage their business following the approved plan. It is noted that when comparing directors in the planner of private companies with directors in the plan administrator of the same company type, the number of outside directors slightly decreased from 27 in the planner to 20 in the plan administrator or about 9%. The number of inside directors dramatically increased from 49 in the planner to 56 in the plan administrator or about 9% as well. This evidence is consistent with the information which was apparent in their reorganization plans.

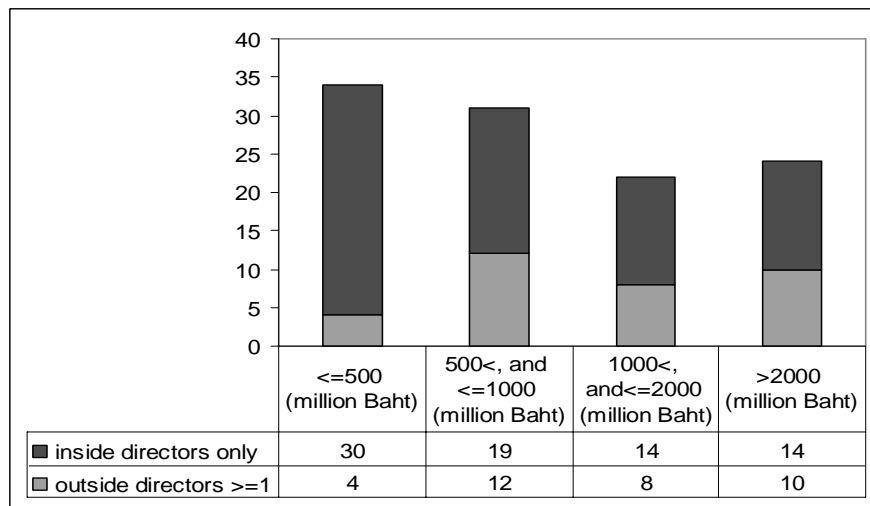
As with Figure 5.3(B), Figure 5.4(B) also indicates that when firms with inside and outside directors as the plan administrators are classified by firm size, firms which are larger than 500 million Baht increase the use of outside directors in the plan administrators. The evidence shows that 30 (88%) of total outside directors are in these firms.

Figure 5.4: Outside and inside directors as the plan administrator of bankrupt sample companies

A: Outside and inside directors classified by company type



B: Outside and inside directors classified by firm size (total assets)



5.3.1.3 Ownership concentration by the largest shareholder

The results from the descriptive statistics in Table 5.4 reveal that overall, in both company types, the minimum value for the largest owner's holding is 6.26% and the maximum value is 99.99%. It can be seen that the range of its concentration is very wide. Nevertheless, the largest shareholder owns 49.41% of equity at the mean and 40.38% of equity at the median. It is possible to say that the ownership of an insolvent firm's large shareholder is highly concentrated relative to Limpaphayom's (2000) study. When considering each company type, the mean and median scores of public companies are 30.47% and 24% respectively, while the mean and median scores of private companies are higher, 58.13% and 53.42% respectively.

Table 5.4: Descriptive statistics of ownership concentration by the largest shareholder of reorganized firms in this study

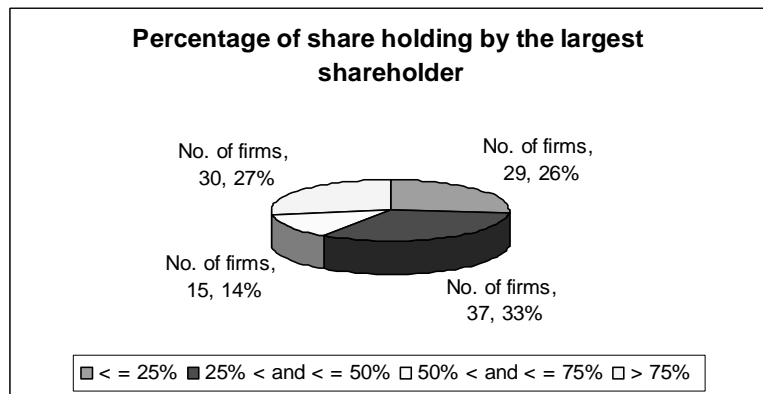
| OWNER | Type of company | | |
|--------------------|-----------------|----------------|---------------------|
| | Private company | Public company | Total of both types |
| N | 76 | 35 | 111 |
| Mean (%) | 58.12 | 30.47 | 49.40 |
| Median (%) | 53.42 | 24.00 | 40.38 |
| Std. deviation (%) | 28.90 | 22.28 | 29.82 |
| Minimum (%) | 10.00 | 6.26 | 6.26 |
| Maximum (%) | 99.99 | 99.65 | 99.99 |

When dividing the percentage of share holding by the largest shareholder into four categories of ownership concentration; 1) $\leq 25\%$, 2) $25\% < x \leq 50\%$, 3) $50\% < x \leq 75\%$, and 4) $> 75\%$, it was found that the maximum number of both public and private firms was in the range of the second category. Figure 5.5(A) shows that the largest shareholder of 37 companies (33%) holds equities of more than 25% but less than 50%. However, Figure 5.5(B) and (C) present a difference of ownership concentration in each company type. As can be seen, the maximum numbers (35% and 36%) of private firms were in the range of the second and fourth category while the maximum number (53%) of public firms is in the first category. These results confirm the findings of Table 5.4 that the largest shareholder in both company types is concentrated, but the largest shareholder in private companies is more

concentrated than in public companies. It is noted that the role of the largest shareholder is still strong even though firms stay in the reorganization process. Thus, this may be a critical influence on post-bankruptcy performance.

Figure 5.5: Percentage of share holding by the largest shareholder

A: Percentage of share holding by the largest shareholder of total sample firms



B: Percentage of share holding by the largest shareholder of private firms

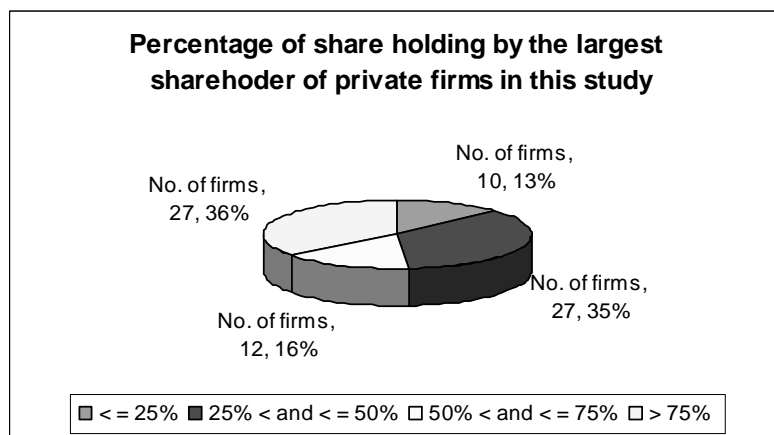
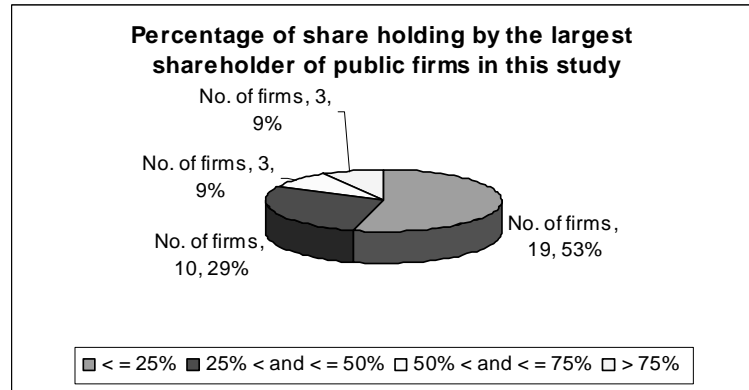


Figure 5.5 (continued)

C: Percentage of share holding by the largest shareholder of public firms



5.3.2 Incentive mechanisms

In the reorganization proceedings, the information from the reorganization plan confirms that the plan administrators receive management fees in terms of cash and/or company's common stock. The following investigates the size of cash and equity payments made to administrators.

5.3.2.1 Cash compensation for the plan administrator

Table 5.5 shows the plan administrator of both company types receives cash compensation (CAPLAD) 525,870 Baht per month, on average, and 300,000 Baht per month at median, although the maximum value of compensation rises to 4,000,000 Baht per month. It is noted that the plan administrator of a public company receives higher cash compensation than a private company. The mean and median compensations in a public company are 763,301.17 and 500,000 Baht per month respectively, whereas those in a private company are 416,527.33 and 200,000 Baht per month respectively.

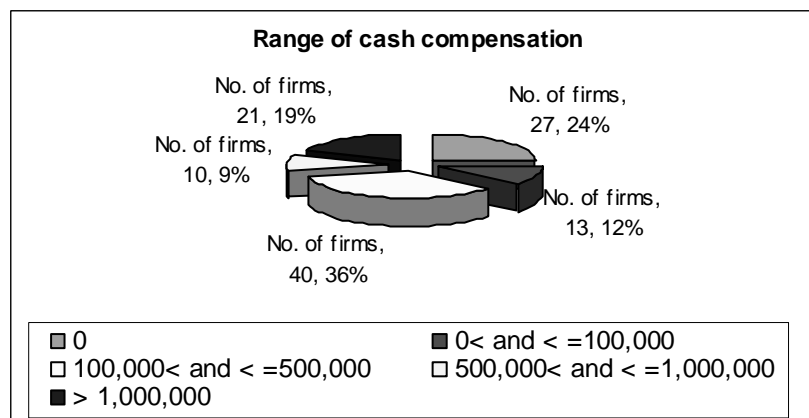
Table 5.5: Descriptive statistics of the amounts of cash compensation for the plan administrator (CAPLAD)

| CAPLAD | Type of company | | |
|----------------|-----------------|----------------|---------------------|
| | Private company | Public company | Total of both types |
| Items | | | |
| N | 76 | 35 | 111 |
| Mean | 416527.33 | 763301.17 | 525870.43 |
| Median | 200000.00 | 500000.00 | 300000.00 |
| Std. Deviation | 614405.59 | 853971.69 | 713435.25 |
| Minimum | 0 | 0 | 0 |
| Maximum | 3250000.00 | 4000000.00 | 4000000.00 |

Note: CAPLAD = the amounts of cash compensation for the plan administrator in Baht per month

Figure 5.6 gives more information about the frequency of range of cash compensation for the plan administrator. Twenty-four percent are willing to accept no compensation. A possible explanation for this is they may be insiders and paid as top executive management and/or the largest shareholder. Almost 50% of firms pay in the range 0< and <=500,000. The highest frequency (36%) is in the range greater than 100,000 Baht, but not less than 500,000 Baht.

Figure 5.6: Range of cash compensation for the plan administrator



5.3.2.2 Managerial shareholding of the plan administrator

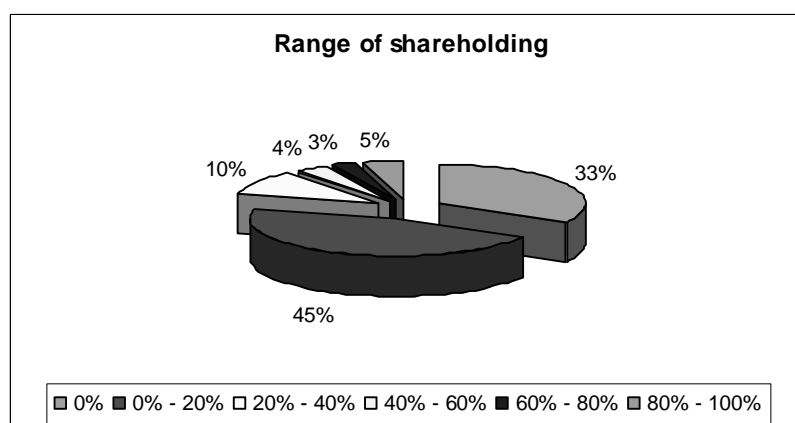
Common shares held by the plan administrator (SHPLAD) are disclosed in Table 5.6 with shareholding of 13.26% on average and less than 1% at median. The minimum value reveals that some plan administrators do not receive common shares as compensation. The results indicate that the plan administrators of a private company have significantly higher shareholding than those of a public company. The mean in a private company is 16.19%, while the mean score in a public company is only 6.9%.

Table 5.6: Descriptive statistics of the percentage of common shares held by the plan administrator (SHPLAD)

| SHPLAD | Type of company | | |
|----------------|-----------------|----------------|---------------------|
| | Private company | Public company | Total of both types |
| Items | | | |
| N | 76 | 35 | 111 |
| Mean | 16.190 | 6.908 | 13.263 |
| Median | 0.493 | 0.041 | 0.230 |
| Std. Deviation | 26.424 | 16.998 | 24.169 |
| Minimum | 0.000 | 0.000 | 0.000 |
| Maximum | 100.000 | 78.330 | 100.000 |

Figure 5.7 illustrates that although about one-third of firms, 37 (33%) did not allocate common shares to the plan administrator, more than half of them, 74 (67%) were shareholders. Most (46%) were in the range of not less than 20% of total shareholding, with only 23 firms with plan administrators holding common shares of more than 20%. These results suggest that the majority of insolvent companies use share ownership to motivate the plan administrators.

Figure 5.7: Range of shareholding of the plan administrator



| Range of shareholding | No. of firms | Percent |
|-----------------------|--------------|---------|
| 0% | 37 | 33.3 |
| 0% - 20% | 51 | 45.9 |
| 20% - 40% | 11 | 9.9 |
| 40% - 60% | 4 | 3.6 |
| 60% - 80% | 3 | 2.7 |
| 80% - 100% | 5 | 4.5 |
| Total | 111 | 100 |

5.3.3 Market mechanisms

As specified in the reorganization plan and progress reports, the critical market mechanism used by insolvent firms for bankruptcy reorganization are restructuring strategies. The study classifies restructuring methods into three categories; operational, asset, and financial restructuring and found that reorganized firms reported multiple methods to the bankruptcy court. The study explores how many firms used each category and then considers the relationship between using restructuring strategy and actual financial performance. The findings from descriptive analysis are as follows.

5.3.3.1 Restructuring methods of insolvent firms

Table 5.7 illustrates three categories of restructuring methods and indicates that of all firms, 111 (100%) used benefits from the reorganization proceedings to restructure their financial structures. Sixty-seven firms (60.4%) restructured their management and organization and only 43 (38.7%) restructured their asset management.

Table 5.7: Three categories of restructuring methods

| Restructuring methods | No. of firms | Percent of total firms |
|---------------------------|--------------|------------------------|
| Total firms | 111 | |
| Operational restructuring | 67 | 60.4% |
| Asset restructuring | 43 | 38.7% |
| Financial restructuring | 111 | 100.0% |

Table 5.8 shows the relationship of restructuring methods to company and industry type as follows. Of the 67 firms using operational restructuring, 51 (76%) are private and 16 (24%) public. Of the 43 firms using asset restructuring, 27 (63%) are private and 16 (37%) public. Of the 111 firms using financial restructuring, 76 (68%) are private and 35 (32%) public. As regards industry type, of the 67 firms using operational restructuring, 36 (54%) are manufacturing and 31 (46%) non-manufacturing. Of the 43 firms using asset restructuring, 25 (58%) are manufacturing and 18 (42%) non-manufacturing and of the 111 firms using financial restructuring, 53 (48%) are manufacturing and 58 (52%) non-manufacturing.

Table 5.8: Three categories of restructuring methods and company and industry type

| Three categories of Restructuring methods | Company type | | Industry type | | Total firms in each category |
|---|--------------|---------|---------------|----------|------------------------------|
| | Private | Public | I | II | |
| Operational restructuring | 51(76%) | 16(24%) | 31 (46%) | 36 (54%) | 67(100%) |
| Asset restructuring | 27(63%) | 16(37%) | 18 (42%) | 25 (58%) | 43(100%) |
| Financial restructuring | 76(68%) | 35(32%) | 58 (52%) | 53 (48%) | 111(100%) |

Note: Industry type I = non-manufacturing industry
 Industry type II = manufacturing industry

The firms reported to the Central Bankruptcy Court the details of operational, asset, and financial restructuring methods. Panel A of Table 5.9 shows the methods of operational restructuring. Nearly 50% of total firms attempted to reduce costs and

expenses, while about 30% attempted to change management, production systems, and sales and service systems. Around 15 – 20% were involved in company size reduction, change in organization structure, improvement in financial and accounting systems, and change in internal control systems, including discontinuation of loss making operations. Less than 14% improved information systems, profitable activities, and compensation and wage systems. Interestingly, although private and public firms applied each method, public companies were noticeably higher in the use of change in management as strategy.

Panel B of Table 5.9 documents that the most common methods of asset restructuring were the disposal of non-core assets (86%), followed by the disposal of investments (21%). Some firms (12%) invested in capital assets. Four firms (9%) accepted mergers and acquisitions and only two (5%) were involved in intangible asset write-offs. It is apparent that there was little difference among the methods which private and public firms used.

Panel C of Table 5.9 discloses that 107 firms (96%) accepted debt write-off of principal and/or accrued interest. Approximately 60 -70 firms (more than 50%) attempted to use debt to equity swaps (common share), deferment of principal and/or accrued interest, capital reduction from existing shareholders, and capital injection from new investors. Around 30 – 40% reported debt repayment / reschedule / refinance, change in interest rate, and settlement of debts with non-equity assets. Sixteen firms (14%) were granted a grace period and 8 firms (7%) used debt injection from new investors, while 7 firms (6%) injected capital from existing shareholders. The remainder chose to use debt to equity swaps into convertible debentures/bonds (4%) and debt to equity swaps into preference shares (2%).

In summary, the results in Table 5.9 show that insolvent firms used formal reorganization through the court to relieve their debt burdens lawfully and increase new capital injections for continuing their businesses. Cost reduction, disposal of non-core assets and change in management were as crucial methods for restructuring.

Table 5.9: Details of restructuring methods used by reorganized firms

| Panel A | | | |
|--|-------------|---------------|--------------|
| Methods of operational restructuring | Total firms | Private firms | Public firms |
| No. of firms using operational restructuring | 67 | 50 | 17 |
| Methods: | | | |
| Cost and expense reduction | 32 (48%) | 26 (52%) | 6 (35%) |
| Change in management | 21 (31%) | 13 (26%) | 8 (47%) |
| Change in production system | 19 (28%) | 14 (28%) | 5 (29%) |
| Change in sale and service system | 19 (28%) | 14 (28%) | 5 (29%) |
| Company size reduction | 13 (19%) | 8 (16%) | 5 (29%) |
| Change in organization structure | 13 (19%) | 9 (18%) | 4 (24%) |
| Improvement in financial and accounting system | 12 (18%) | 9 (18%) | 3 (18%) |
| Change in internal control system | 11 (16%) | 9 (18%) | 2 (12%) |
| Discontinuation of loss making operation | 10 (15%) | 9 (18%) | 1 (6%) |
| Improvement in information system | 9 (13%) | 8 (16%) | 1 (6%) |
| Improvement in profitable activities | 7 (11%) | 6 (12%) | 1 (6%) |
| Improvement in compensation and wage system | 3 (5%) | 3 (6%) | - |
| Panel B | | | |
| Methods of asset restructuring | Total firms | Private firms | Public firms |
| No. of firms using asset restructuring | 43 | 27 | 16 |
| Methods: | | | |
| Disposal of non-core assets | 37 (86%) | 24 (89%) | 13 (81%) |
| Disposal of investments | 9 (21%) | 3 (11%) | 6 (38%) |
| Investment in capital assets | 5 (12%) | 3 (11%) | 2 (13%) |
| Mergers and acquisitions | 4 (9%) | 1 (4%) | 3 (19%) |
| Intangible asset write-off | 2 (5%) | 2 (7%) | - |
| Panel C | | | |
| Methods of financial restructuring | Total firms | Private firms | Public firms |
| No. of firms using financial restructuring | 111 | 76 | 35 |
| Methods: | | | |
| Debt write-off (principal and/or accrued interest) | 107 (96%) | 72 (95%) | 35 (100%) |
| Debt to equity swaps (common share) | 69 (62%) | 49 (65%) | 20 (57%) |
| Deferment of principal and/or accrued interest | 63 (57%) | 48 (63%) | 15 (43%) |
| Capital reduction from existing shareholders | 62 (56%) | 32 (42%) | 30 (86%) |
| Capital injection from new investors | 61 (55%) | 43 (57%) | 18 (51%) |
| Debt repayment / reschedule / refinance | 43 (39%) | 23 (30%) | 20 (57%) |
| Change in interest rate | 40 (36%) | 26 (34%) | 14 (40%) |
| Settlement of debts with non-equity assets | 33 (30%) | 23 (30%) | 10 (29%) |
| Granting of grace period | 16 (14%) | 11 (15%) | 5 (14%) |
| Debt injection from new investors | 8 (7%) | 5 (7%) | 3 (9%) |
| Capital injection from existing shareholders | 7 (6%) | 5 (7%) | 2 (6%) |
| Debt to equity swaps (convertible debenture/bond) | 4 (4%) | 2 (3%) | 2 (6%) |
| Debt to equity swaps (Preference share) | 2 (2%) | 1 (1%) | 1 (3%) |

Note: The number in brackets is the percentage of the number of companies using the method divided by the total number of firms in each column.

Rankings of prevalence of use of three restructuring types of both positive and negative percentage difference of post-bankruptcy performance (PFOM) firms are displayed in Tables 5.10 – 5.12. As can be seen in Table 5.10, firms in the positive group used change in management as the first rank but the negative group considered cost and expense reduction to be the first choice. At the second rank, the positive group used cost and expense reduction and change in sale and service system while the negative group gave priority to the use of change in production system. Change in production system, company size reduction and change in organization structure were employed by the positive group at the third, fourth and fifth rank, respectively. Meanwhile the negative group used change in management and improvement in financial and accounting systems in the third rank, change in sale and service system, organization structure, and internal control systems in the fourth rank, and discontinuation of loss making operations in the fifth priority. It appears that the use of operational restructuring methods of the successful group differs significantly from the negative group.

Table 5.10: The ranks of prevalence of use of operational restructuring methods of two groups of reorganized firms reporting positive and negative percentage differences of post-bankruptcy performance (PFOM)

| Methods: | Positive group | | Negative group | |
|---|----------------|--------------|----------------|--------------|
| | Rank | no. of firms | Rank | no. of firms |
| Cost and expense reduction | 2 | 13 (19%) | 1 | 19 (43%) |
| Change in management | 1 | 14 (21%) | 3 | 7 (16%) |
| Change in production system | 3 | 11 (16%) | 2 | 8 (18%) |
| Change in sale and service system | 2 | 13 (19%) | 4 | 6 (14%) |
| Company size reduction | 4 | 10 (15%) | 6 | 3 (7%) |
| Change in organization structure | 5 | 7 (10%) | 4 | 6 (14%) |
| Improvement in financial and accounting systems | 7 | 5 (7%) | 3 | 7 (16%) |
| Change in internal control systems | 7 | 5 (7%) | 4 | 6 (14%) |
| Discontinuation of loss making operations | 6 | 6 (9%) | 5 | 4 (9%) |
| Improvement in information system | 6 | 6 (9%) | 6 | 3 (7%) |
| Improvement in profitable activities | 7 | 5 (7%) | 7 | 2 (5%) |
| Improvement in compensation and wage system | 8 | 1 (1%) | 7 | 2 (5%) |

Table 5.11 displays the ranks of asset restructuring methods in both groups. As can be seen, companies of the positive group chose disposal of non-core assets, disposal of investments, and mergers and acquisitions as the top three methods for restructuring. They also used other methods; investment in capital assets and intangible asset write-offs. The negative group chose the same primary methods that the positive group used.

Table 5.11: The ranks of prevalence of use of asset restructuring methods of two groups of reorganized firms reporting positive and negative percentage differences of post-bankruptcy performance (PFOM)

| Methods: | Positive group | | Negative group | |
|------------------------------|----------------|--------------|----------------|--------------|
| | Rank | no. of firms | Rank | no. of firms |
| Disposal of non-core assets | 1 | 25 (37%) | 1 | 12 (27%) |
| Disposal of investments | 2 | 7 (10%) | 2 | 2 (5%) |
| Investment in capital assets | 4 | 3 (4%) | 2 | 2 (5%) |
| Mergers and acquisitions | 3 | 4 (6%) | | - |
| Intangible asset write-offs | 5 | 1, 2% | 3 | 1, 2% |

Table 5.12 illustrates the ranks of financial restructuring methods of reorganized firms in both groups. It can be seen that debt write-off (principal and/or accrued interest) and debt to equity swaps (common share) are the first and second rank, respectively that both groups used for resolving their financial position. Deferment of principal and/or accrued interest was used by the negative group in the third rank, whereas the positive group considered this method as the fifth rank. The method of capital reduction from existing shareholders was used at the third rank by the positive group, whereas it became the fifth priority of the negative group. The method of capital injection from new investors is ranked at the fourth level in both groups. The methods of debt repayment/reschedule/refinance and change in interest rate are ranked sixth in the positive group while they are at the sixth and seventh rank in the negative group. Other methods such as settlement of debts with non-equity assets, debt to equity swaps (convertible debenture/bond) and debt injection from new investors were also used in both groups but they are the last rank. The results indicate

that there is a little difference in selection of these methods between the positive and negative groups.

Table 5.12: The ranks of prevalence of use of financial restructuring methods of two groups of reorganized firms reporting positive and negative percentage differences of post-bankruptcy performance (PFOM)

| Methods: | Positive group | | Negative group | |
|--|----------------|--------------|----------------|--------------|
| | Rank | no. of firms | Rank | no. of firms |
| Debt write-off (principal and/or accrued interest) | 1 | 66 (99%) | 1 | 41 (93%) |
| Debt to equity swaps (common share) | 2 | 42 (63%) | 2 | 27 (61%) |
| Deferment of principal and/or accrued interest | 5 | 38 (57%) | 3 | 25 (57%) |
| Capital reduction from existing shareholders | 3 | 41 (61%) | 5 | 21 (48%) |
| Capital injection from new investors | 4 | 39 (58%) | 4 | 22 (50%) |
| Debt repayment / reschedule / refinance | 6 | 24 (36%) | 6 | 19 (43%) |
| Change in interest rate | 6 | 24 (36%) | 7 | 16 (36%) |
| Settlement of debts with non-equity assets | 7 | 19 (28%) | 8 | 14 (32%) |
| Granting of grace period | 8 | 10 (15%) | 9 | 6 (14%) |
| Debt injection from new investors | 9 | 7 (10%) | 12 | 1 (2%) |
| Capital injection from existing shareholders | 10 | 4 (6%) | 10 | 3 (7%) |
| Debt to equity swaps (convertible debenture/bond) | 11 | 2 (3%) | 11 | 2 (5%) |
| Debt to equity swaps (Preference share) | 11 | 2 (3%) | | - |

The results of Tables 5.10 – 5.12 reveal there is different selection of restructuring methods in each category between positive and negative groups, particularly, around operational restructuring. It could be that the different uses of each method in each group are helpful for an understanding of a firm's post-bankruptcy performance.

5.4 Control variables

Control variables in the study include firm size, type of company, and industry type. The important features of each control variable are described below.

5.4.1 Firm size

The size of each firm is measured by the book value of a company's total assets as of the date that the court had issued the order for the business reorganization of the firm. Details of each firm's size are given in Appendix 2: List of sample companies. The results of descriptive statistics in Table 5.13 show that mean and median scores are 1,914.08 and 855.36 million Baht, respectively. Mean and median sizes of private firms are 948.66 and 635.68 million Baht, respectively, while mean and median sizes of public firms are significantly larger at 4,010.44 and 2,042.70 million Baht, respectively.

Table 5.13: Descriptive statistics of the size of reorganized firms in this study

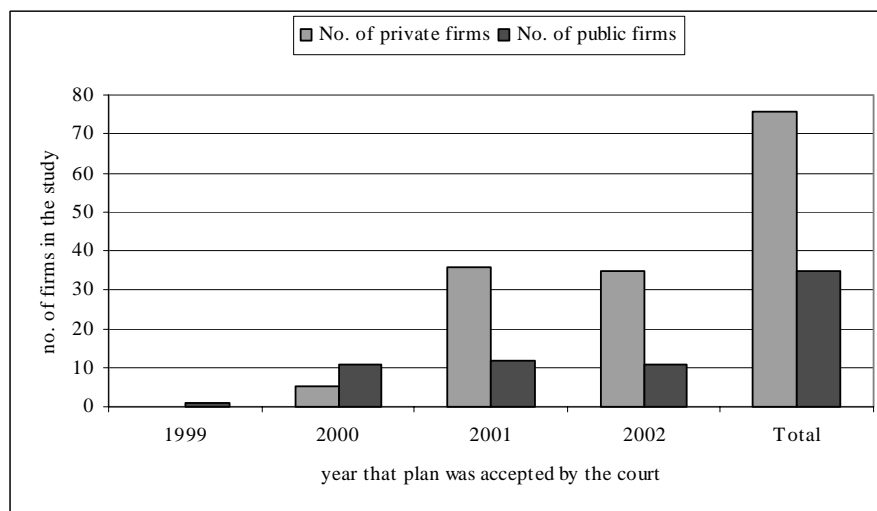
| Items | Private firms | Public firms | total |
|----------------|---------------|--------------|----------|
| N | 76 | 35 | 111 |
| Mean | 948.66 | 4010.44 | 1914.08 |
| Median | 635.68 | 2042.70 | 855.36 |
| Std. Deviation | 1237.83 | 5285.17 | 3423.56 |
| Minimum | 18.68 | 92.56 | 18.68 |
| Maximum | 7601.00 | 27233.35 | 27233.35 |

Note: Size is the book value of a company's total assets in million Baht

5.4.2 Company type

Sample firms in the study include both private and public companies. Figure 5.8 indicates that the number of private companies that filed for reorganization increased significantly in 2001, while the number of public companies jumped in 2000 and became more stable in the last two years of the study.

Figure 5.8: Types of bankrupt sample companies



The firm size of each company type in Table 5.14 shows private companies (76) have mean scores of firm size of only 948.66 million Baht relative to public companies (35) which are smaller in number but have mean scores of firm size nearly four times greater (4,010.44 million Baht).

Table 5.14: Descriptive statistics of firm size classified by company and industry type

| Company type | Industry type | Mean | N | Std. Deviation |
|--------------|---------------|---------|-----|----------------|
| Private | 0 | 902.02 | 41 | 1132.52 |
| | 1 | 1003.29 | 35 | 1365.74 |
| | Total | 948.66 | 76 | 1237.83 |
| Public | 0 | 3372.30 | 17 | 3758.65 |
| | 1 | 4613.12 | 18 | 6463.57 |
| | Total | 4010.44 | 35 | 5285.17 |
| Total | 0 | 1626.07 | 58 | 2480.36 |
| | 1 | 2229.27 | 53 | 4225.69 |
| | Total | 1914.08 | 111 | 3423.56 |

Note: Industry type; 0 = non-manufacturing industry
1 = manufacturing industry

5.4.3 Industry type

Figure 5.9 which presents industry types of bankrupt sample companies shows that of the 111 insolvent companies, 53 (48%) came from the manufacturing industry and 58 (52%) from other industries. However, as shown in Table 5.14, mean scores of size (2,229.28 million Baht) of reorganized firms within the manufacturing industry are larger than those (1,626.07 million Baht) of firms within the non-manufacturing industry.

Figure 5.9: Types of industry of bankrupt sample companies

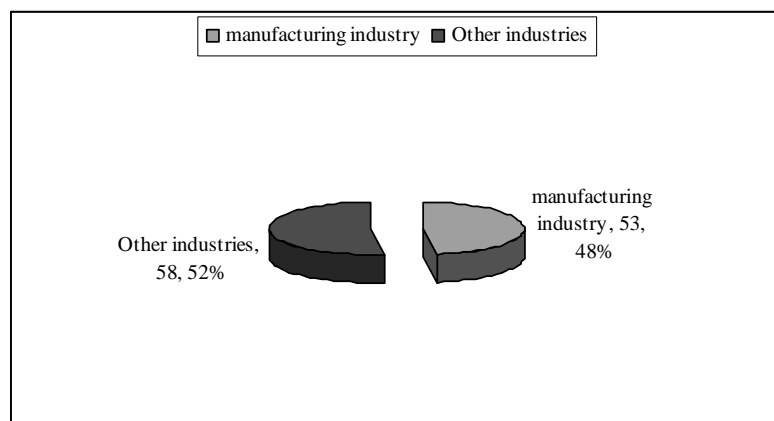


Table 5.15 shows industry classification of the sample companies. The manufacturing companies in the study which suffered the biggest effect of the 1997 Asian economic crisis were the steel industry and the stainless and plastic pipe industry including components of pipe products. Next came sport and fashion footwear, tuna fish canning, Para rubber, paper, and furniture factories. Twenty-six (49%) of the total manufacturing companies are in these industries. Among other industries, a large number of real estate development businesses, followed by construction, resort and hotel, car selling, leasing and distributors were extremely affected by this crisis. Forty-two (72%) of total other industrial companies are in those industries. When combined, they represent 68 (61%), more than half of the total sample companies.

Table 5.15: Industry classification of sample companies

| Industry classification | No. of private companies | No. of public companies | Total |
|--|--------------------------|-------------------------|-------|
| Manufacturing: | | | |
| Aluminum products | 1 | - | 1 |
| Bicycles and parts | 1 | - | 1 |
| Cassava products | - | 1 | 1 |
| Components of air conditioning | - | 1 | 1 |
| Crush stone factory | 1 | - | 1 |
| Concrete wall | 1 | - | 1 |
| Diesel engines | - | 1 | 1 |
| Duck farm | - | 1 | 1 |
| Fish sauce | 1 | - | 1 |
| Frozen seafood | 1 | - | 1 |
| Furniture factories | 2 | 1 | 3 |
| High power electronic industry | 1 | - | 1 |
| Iron-roll door | 1 | - | 1 |
| Official decorating products | 1 | - | 1 |
| Packaging products | - | 2 | 2 |
| Paint | - | 1 | 1 |
| Palm oil | 1 | - | 1 |
| Paper, paper pulp and related products | 2 | 1 | 3 |
| Para rubber and related products | 2 | 1 | 3 |
| Pipe and components of pipe | 3 | - | 3 |

Table 5.15 (continued)

| Industry classification | No. of private companies | No. of public companies | Total | |
|---|--------------------------|-------------------------|-------|-----------|
| Manufacturing: (continued) | | | | |
| Plastic pipe | 1 | - | 1 | |
| Plastic | 1 | - | 1 | |
| Plastic and car components | - | 1 | 1 | |
| Stainless pipe and other stainless products | - | 1 | 1 | |
| Sport shoes and fashion shoes | 1 | 2 | 3 | |
| Steel and related products | 4 | 2 | 6 | |
| Textiles | 4 | - | 1 | |
| Thai silk products and handicrafts | 1 | - | 1 | |
| Tomato products | - | 1 | 1 | |
| Tuna fish canning | 2 | 1 | 3 | |
| Vehicle and machinery parts | 2 | - | 2 | |
| | Subtotal | 35 | 18 | 53 (48%) |
| Others: | | | | |
| Agricultural goods market | 1 | - | 1 | |
| Building Construction and engineering | 6 | 2 | 8 | |
| Building material trading | - | 1 | 1 | |
| Car selling and rental services | 4 | 1 | 5 | |
| Construction of power station | 1 | - | 1 | |
| Department store | - | 1 | 1 | |
| Educational institution | 1 | - | 1 | |
| Engineering & building basic public utilities | 1 | - | 1 | |
| Environmental engineering | 1 | - | 1 | |
| Financial services | 1 | - | 1 | |
| General hospital | 1 | - | 1 | |
| Leasing | 3 | - | 3 | |
| Investment industry | - | 1 | 1 | |
| Mass media production | - | 1 | 1 | |
| Oil containers and harbour rental | 1 | - | 1 | |
| Printing services | - | 1 | 1 | |
| Real estate development | 11 | 7 | 18 | |
| Resorts and hotels | 5 | - | 5 | |
| Selling, distributing representative & services | 3 | 1 | 4 | |
| Telecommunications | - | 1 | 1 | |
| Transportation | 1 | - | 1 | |
| | Subtotal | 41 | 17 | 58(52%) |
| | Total | 76 | 35 | 111(100%) |

5.5 Summary

This chapter reports on an investigation of variables using descriptive statistics. The dependent variable - a firm's post-bankruptcy performance (PFOM) had positive percentage differences on average each year. Its median and standard deviations also showed improved results in the second and third year. In addition, firms with positive PFOM outnumbered those with negative PFOM. Moreover, it was found that the recovery rate from bankruptcy in this study was 60% of the total number of companies, 58% for private and 66% for public. This result suggests a majority of insolvent firms achieve successful reorganization and that the governance mechanisms of the bankruptcy reorganization produce some success.

The study identified independent variables as key governance mechanisms of the Thai bankruptcy reorganization proceedings including the planner, the plan administrator, ownership concentration by the largest shareholder, cash compensation and common shares held by the plan administrator, operational, asset and financial restructuring methods. The descriptive results showed that the planners of bankrupt companies comprised both inside and outside directors. Only 37% of companies hired outsiders, whereas 63% used insiders to construct the reorganization plan. It was also found that firms with a size of more than 500 million Baht tend to use more outside directors. Similar to the planner, only 34 (30%) of 111 companies appointed outside directors as plan administrators and firms which are larger than 500 million Baht also have higher use of outside directors as plan administrators.

The analysis of ownership concentration revealed ownership of insolvent firm, remained highly concentrated throughout the reorganization process. Private companies had more concentrated ownership than public companies. Firms paid cash compensation around 500,000 Baht per month on average to the plan administrator, and 300,000 Baht per month at median. The results indicate that almost all sample firms, 84 (76%) pay cash compensation to the plan administrator. The plan administrators of both private and public companies also held common shares (13.26% on average and less than 1% at median). The mean number of shares held in a private company was 16.19%, while the mean score in a public company was only

6.9%. The results suggested these incentive mechanisms were used in the majority of insolvent firms to motivate the plan administrators.

The results also disclosed important details of restructuring strategy implemented by insolvent firms. Among three categories of restructuring methods, all firms undertook benefits from financial restructure. Sixty-seven firms (60.4%) restructured their management and organization and 43 (38.7%) restructured their asset management. Cost reduction, disposal of non-core assets and change in management were identified as critical methods for restructuring.

Control variables included firm size, company and industry type. Mean and median asset size of sample firms were 1,914.08 and 855.36 million Baht, respectively. The evidence showed that the sample firms were both public and private companies, with private (76) and public (35), however, mean asset size of public companies (4,010.44 million Baht) were larger than those of private companies (948.66 million Baht). The results also revealed mean asset size of firms in each industry type. With 53 firms (48%) within the manufacturing industry and 58 firms (52%) within the non-manufacturing type, mean asset size of manufacturing firms (2,229.28 million Baht) were larger than those (1,626.07 million Baht) of non-manufacturing firms. The study identified that insolvent firms in the sample covered important industries of the Thai economic system such as the steel industry, pipes and components of pipe products, footwear, paper, furniture factories, resorts and hotels, building construction and real estate development businesses. Sixty-eight companies (61%) of the total sample companies were in these industries.

The next chapter presents the results of the statistical test of the hypotheses. It will begin with a report of the tests of the statistical assumptions. Then, it will present the empirical results of hypotheses testing from OLS regression analysis. A discussion of the hypotheses testing results will also be described in this chapter.

Chapter 6

Regression results and hypotheses testing

6.1 Introduction

The objective of this chapter is to present the statistical analysis for the hypotheses developed in Chapter 3. It begins with a discussion of the main assumptions of the univariate statistical and multiple regression analyses in Section 6.2. This is followed by a report on the results of the ordinary least squares regression analysis in Section 6.3 and the results of the hypotheses testing in Section 6.4.

6.2 Assumptions of statistical tests

The following section describes the sample size for testing and the main assumptions of multiple regression.

6.2.1 Sample size for testing

As discussed in Chapter 4 (Section 4.4), the study found bankruptcy files for reorganization at the Central Bankruptcy Court, Bangkok Thailand for 111 companies. The reorganization plans for these companies had been confirmed in the period 1999-2002. All observations for analysis were collected for the period January 1999 to December 2005. Missing data resulted from the second and third-year actual profits before tax during the reorganization period being unavailable. All missing data was rechecked with the database of the Department of Business Development, the Ministry of Commerce and the Stock Exchange of Thailand. It was necessary to remove those companies leaving 101 out of 111 (see details of the sample size of the study in Table 6.1) for the regression. Nevertheless, the remaining firms in the sample represent almost the entire population of insolvent companies for the period of the study.

Table 6.1 Details of the sample size of the study

| | | |
|---|----------|------------|
| Insolvent firms whose reorganization plan had been confirmed by the court 1999 - 2002: | | |
| - Public companies | | 35 |
| - Private companies | | <u>76</u> |
| Total sample firms | | 111 |
| <u>Less</u> - firms missing both the second and third-year actual profits before tax during the reorganization time | | |
| - Private companies | | (2) |
| - firms missing only the third-year actual profits before tax during the reorganization time | | |
| - Public companies | 4 | |
| - Private companies | <u>4</u> | (8) |
| Total sample firms for OLS regression analysis | | <u>101</u> |
| Total sample firms for OLS regression analysis in each company type | | |
| - Public companies | | 31 |
| - Private companies | | <u>70</u> |
| | | <u>101</u> |

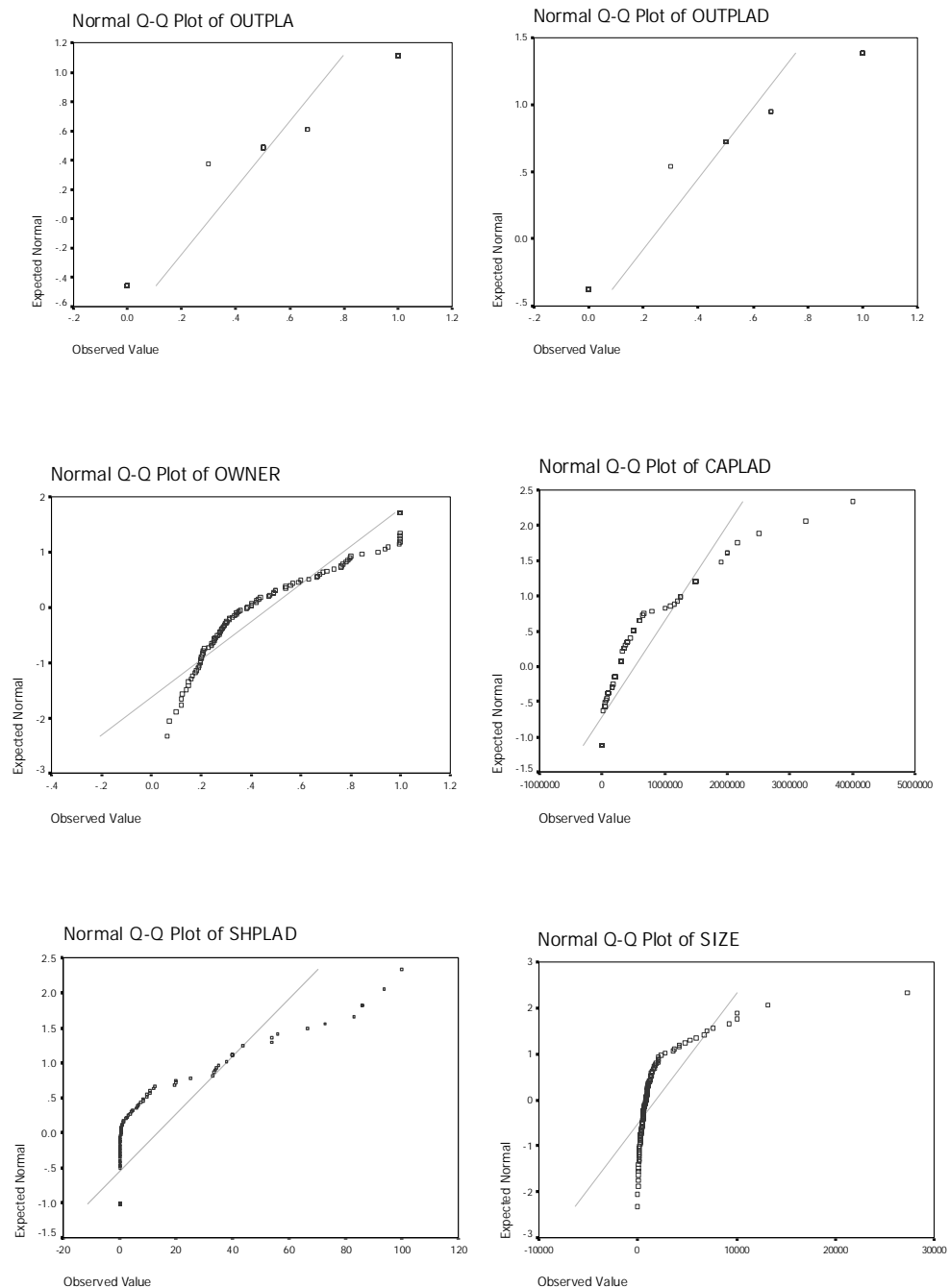
Note: During the period of study, none of the 111 firms were terminated from the bankruptcy reorganization process.

In addition, the study also checked the number of sample firms (N) to predictors before testing OLS regression in order to avoid problems of a small size effect and significant measurement error. Most research suggests that the cases-to-independent variables ratio which has sufficient power should be 10 - 15 cases for every independent variable in the model (Cohen 1988, 1992; Green 1991; Park & Dudycha 1974; Pedhazur 1997; Schmidt 1971). Thus, following this rule, the number of sample firms for nine independent variables in the model should be 90 - 135 firms, with the 101 sample firms of the study within this range. Therefore, it can be concluded that the number of sample firms to predictors in the study was sufficient for testing the proposed research model.

6.2.2 Normal distribution

In this study, normal quantile-quantile plots (Q-Q plots) were employed to test the distribution of continuous variables (Coakes 2005). The diagnostic tests on the variables indicated that there were deviations from normality (see Figure 6.1).

Figure 6.1: Normal quantile-quantile plots (Q-Q plots) of continuous variables before transformation



Mean, median, standard deviations and skewness were computed to check the distribution of each variable. As can be seen in Table 6.2, large difference between the mean and median of these continuous variables suggest they were not normally distributed (except OWNER variable).

Table 6.2: Descriptive statistics of continuously independent variables before transformation

| Continuous variables | Mean | Median | Std. Deviation | Skewness |
|----------------------|-----------|-----------|----------------|----------|
| OUTPLA | 0.32 | 0.00 | 0.45 | 0.74 |
| OUTPLAD | 0.23 | 0.00 | 0.38 | 1.28 |
| OWNER | 0.48 | 0.38 | .29 | 0.61 |
| CAPLAD | 526847.70 | 300000.00 | 735233.12 | 2.22 |
| SHPLAD | 13.70 | 0.39 | 24.21 | 2.02 |
| SIZE | 1901.62 | 855.36 | 3499.35 | 4.65 |

Note: N = 101 companies

Where:

OUTPLA = The proportion of outside directors in the planner

OUTPLAD = The proportion of outside directors in the plan administrator

OWNER = The proportion of common shares held by the largest shareholding of the firm

CAPLAD = The amounts of cash compensation for the plan administrator

SHPLAD = The percentage of common shares held by the plan administrator

SIZE = The book value of total assets in the firm

To correct this problem, the independent variables were transformed. Each variable was treated as follows.

1. Transform OUTPLA to be LNOUTPLA by adding 1 to each value to avoid zero values and then computing its natural log.
2. Transform OUTPLAD to be LNOUTPLAD by adding 1 to each value to avoid zero values and then computing its natural log.
3. Transform "CAPLAD" to be "LNCAPLAD" by adding 1 to each value to avoid zero values and then computing its natural log.

4. Transform “SHPLAD” to be “LNSHPLAD” by adding 1 to each value to avoid zero values and then computing its natural log.
5. Transform “SIZE” to be “LNSIZE” by computing its natural log.

As a result of the transformation, the mean and median of variables in Table 6.3 were closer and the values of standard deviation and skewness were reduced. While there were still some minor deviations from normality most researchers argue that if the data are not extremely non-normally distributed, the issue is not serious (Coakes 2005; Kleinbaum, Kupper, Muller & Nizam 1998; Norusis 2000).

Table 6.3: Descriptive statistics of continuously independent variables after transformation

| Continuous variables | Mean | Median | Std. Deviation | Skewness |
|----------------------|------|--------|----------------|----------|
| LNOUTPLA | 0.23 | 0.00 | 0.31 | 0.68 |
| LNOUTPLAD | 0.17 | 0.00 | 0.27 | 1.16 |
| OWNER | 0.48 | 0.38 | .29 | 0.61 |
| LNCAPLAD | 9.58 | 12.61 | 5.76 | -1.02 |
| LNSHPLAD | 1.36 | 0.33 | 1.62 | 0.72 |
| LNSIZE | 6.66 | 6.39 | 1.37 | -0.18 |

Note: N = 101 companies

For the dependent variable, the descriptive statistics in Table 6.4 show that the distribution of the dependent variable – PFOM is significantly not normal and needs transformation. The study used log transformation to change PFOM to be the natural log form – LPFOM. After transformation, descriptive statistics of LPFOM in Table 6.4 indicated that the distribution of LPFOM neared normal.

Table 6.4: Descriptive statistics of post-bankruptcy performance (PFOM) and the natural log of post-bankruptcy performance (LPFOM)

| Dependent variable | Mean | Median | Std. Deviation | Skewness |
|--------------------|--------|--------|----------------|----------|
| PFOM | 698.29 | 22.79 | 4900.78 | 8.79 |
| LPFOM | 7.88 | 7.70 | 0.92 | -5.97 |

6.2.3 Check for heteroscedasticity

It was necessary to test for the presence of significant heteroscedasticity in the dependent variables. The assumption of the ordinary least squares (OLS) regression model requires the absence of heteroscedasticity. Pindyck and Rubinfeld (1991) explained that if heteroscedasticity is present, OLS estimation will place more weight on the observations with larger error variances than on those with small error variances. The error variance of the dependent variables, known as homoscedasticity, must be constant (Field 2005). Non-constant variance of the error term is called heteroscedasticity. To test this, the study used an examination of residual scatterplots, a plot of the standardized residuals (*ZRESID) and the standardized predicted values of the dependent variable based on the model (*ZPRED) (Coakes 2005; Field 2005). Field (2005) explains that if the graph of *ZRESID and *ZPRED looks like a random array of dots evenly dispersed around zero and does not funnel out, there is no indication of the presence of significant heteroscedasticity. In comparison to the PFOM scatterplot, the shape of the scatterplot of LPFOM in Figure 6.2 shows no obvious departures from homoscedasticity.

Figure 6.2: Plots of the standardized residuals (*ZRESID) against the standardized predicted values of the dependent variable based on the model (*ZPRED)

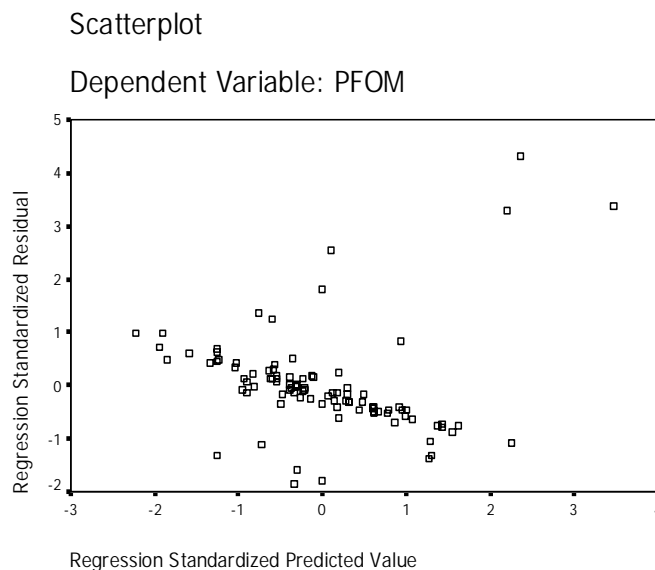
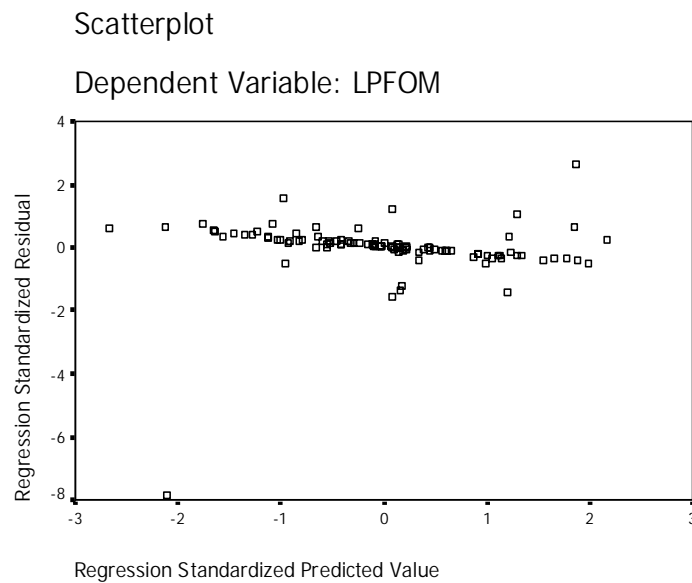


Figure 6.2 (continued)



6.2.4 Check for multicollinearity

Checking for the presence of multicollinearity between the independent variables is important because it leads to biased parameter estimates. Whenever two predictor variables are highly correlated, they both measure essentially the same information. To reduce the impact of multicollinearity and make the best linear unbiased estimates in multiple regression analysis, the redundancy of variables from the analysis needs to be removed (Field 2005; Pallant 2001). Based on statistical theory, there are several tests to identify multicollinearity; bivariate correlations, tolerance of variables, and the variance inflation factor (VIF). This study employed a bivariate Pearson product-moment correlation to check it within the Statistical Package for Social Sciences (SPSS) program (Coakes 2005; Pallant 2001).

Table 6.5, which includes the dependent variable - LPFOM and 10 independent variables (seven expected predictors - LNOUTPLA, LNOUTPLAD, OWNER, LNCAPLAD, LNSHPLAD, ORSTR, and ARSTR and three control variables - LNSIZE, INDSTR, and TYPE), provides Pearson correlation coefficients of variables for 101 companies in the sample. The findings indicated that there were significant correlations among the expected predictors and control variables.

As can be seen in Table 6.5, there are independent variables in this study having a high coefficient of correlation (i.e. 0.80 and above) suggesting the presence of multicollinearity (Field 2005, pp.175). The correlation between LNOUTPLAD and LNOUTPLA is .808 and are multicollinear. This was an understandable result as the planners are appointed initially to set the plan and manage business operations during planning, while the plan administrators are nominated by the former and may be the same group as the planner, appointed after the plan has been approved. Thus, it is necessary to remove one of these variables (LNOUTPLAD) from the OLS regression model. After removing LNOUTPLAD, the highest correlation in the table is .497 between TYPE and LNSIZE reflect the fact that public companies are generally larger than private. It can therefore be concluded that there is no significant multicollinearity between the remaining independent variables of the study.

Table 6.5: Pearson correlation coefficients with the data of 101 companies

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--------------|-------|--------|--------|---------|---------|--------|--------|-------|--------|------|------|
| 1. LPFOM | 1.00 | | | | | | | | | | |
| 2. LNOUTPLA | .072 | 1.00 | | | | | | | | | |
| 3. LNOUTPLAD | .068 | .808** | 1.00 | | | | | | | | |
| 4. OWNER | .010 | -.105 | -.020 | 1.00 | | | | | | | |
| 5. LNCAPLAD | .071 | .201* | .282** | -.094 | 1.00 | | | | | | |
| 6. LNSHPLAD | -.112 | -.061 | -.228* | -.198* | -.092 | 1.00 | | | | | |
| 7. ORSTR | .128 | .162 | .065 | .145 | -.086 | .207* | 1.00 | | | | |
| 8. ARSTR | .154 | .202* | .176* | -.143 | .086 | .169* | .179* | 1.00 | | | |
| 9. LNSIZE | .063 | .215* | .183* | -.315** | .066 | -.011 | .077 | .149 | 1.00 | | |
| 10. INDSTR | .061 | .072 | .101 | .000 | -.239** | -.080 | .225* | .184* | .142 | 1.00 | |
| 11. TYPE | .139 | .071 | .099 | -.438** | .138 | -.212* | -.178* | .095 | .497** | .054 | 1.00 |

Note: N = 101 companies

Variable # 1 is a dependent variable

Variables # 2 - # 8 are independent variables

Variables # 9 - # 11 are control variables

** Correlation is significant at the 0.01 level (1-tailed)

* Correlation is significant at the 0.05 level (1-tailed)

6.2.5 Outliers

The criterion set for detecting multivariate outliers of the study is Mahalanobis distances at $p < 0.01$ level as recommended by Tabachnick & Fidell 2001, pp.157. It is evaluated as a critical value of the Chi - Square distributions with degrees of freedom equal to the number of predictors. In this case, the study initially sets 9 independent variables of post-bankruptcy performance (excluding one redundant variable - LNOUTPLAD and one ineffective predictor - FRSTR). Thus, if any cases with Mahalanobis distances are greater than 21.67 (see Tabachnick & Fidell 2001, pp.933 in Table C.4: Critical Values of Chi Square (χ^2) at $df = 9$ independent variables and $p < 0.01$ level), they are multivariate outliers. In Table 6.6, the maximum value of Mahalanobis distances in the study (17.19) does not exceed the given criterion (21.67). Consequently, the results of Mahalanobis distances suggest that there are no significant outliers in this study.

Table 6.6: The results of the Mahalanobis distance test

| Items | Mahalanobis distance |
|--------------------|----------------------|
| Minimum | 4.43 |
| Maximum | 17.19 |
| Mean | 8.91 |
| Standard Deviation | 2.59 |
| No. of cases | 101 |

Note: The criterion for multivariate outliers of this study is 21.67 (at $df = 9$ and $p < 0.01$ level – see Tabachnick & Fidell 2001, pp.933).

6.3 The results of the ordinary least squares (OLS) regression analysis

6.3.1 Sample used for analysis

As discussed in Section 6.2.1, the sample firms for regression analysis consisted of 101 reorganized companies. Although this was not a large sample size, it was not unusual and many prior researchers who investigated post-bankruptcy performance have found a small sample (e.g., the studies of Michel, Shaked & McHugh (1998), Alderson & Betker (1999) and Platt & Platt (2002)). For this study, 101 companies comprise 91% of all of the 111 bankrupt companies whose reorganization plans were accepted by the court between 1999 and 2002 and therefore represent the maximum number of companies for this period.

6.3.2 Regression model

As a result of two independent variables showing high coefficients of correlation, one variable is omitted from the OLS regression model (Section 6.2.4). The variable is the natural log of the proportion of outside directors in the plan administrator - LNOUTPLAD. Additionally, it is seen that there is no difference in the financial restructuring mechanism among companies, this independent variable - FRSTR was used for reorganizing business in all companies (see Tables 5.7 in Chapter 5). Thus, it is necessary to remove the expected predictor - FRSTR from the model as well. Consequently, compared with the proposed research model from Chapter 4 (Section 4.5), the revised model for testing the dependent variable is as follows.

$$\text{LPFOM} = \alpha + \beta_1(\text{LNOUTPLA}) + \beta_2(\text{OWNER}) + \beta_3(\text{LNCAPLAD}) + \beta_4(\text{LNSHPLAD}) \\ + \beta_5(\text{ORSTR}) + \beta_6(\text{ARSTR}) + \beta_7(\text{LNSIZE}) + \beta_8(\text{INDSTR}) + \beta_9(\text{TYPE}) + \varepsilon$$

Where;

α = A constant term

$\beta_1 \dots \beta_{11}$ = Coefficient of each variable

LPFOM = The natural log of the three-year average value of the difference between actual profits before tax and predicted profits before tax as the percentage of absolute value of predicted profits before tax in years 1-3

LNOUTPLA = The natural log of the proportion of outside directors in the planner

OWNER = The proportion of common shares held by the largest shareholder of the firm

LNCAPLAD = The natural log of amounts of cash compensation for the plan administrator

LNSHPLAD = The natural log of the percentage of common shares held by the plan administrator

ORSTR = Dummy variable (1,0) 1 for operational restructuring or 0 otherwise

ARSTR = Dummy variable (1,0) 1 for asset restructuring or 0 otherwise

LNSIZE = The natural log of the book value of total assets in the firm

INDSTR = Types of industry; 1 for manufacturing, 0 for others

TYPE = Types of company; 1 for public company, 0 for others

ε = An error term

6.3.3 OLS regression test results

The research model in Section 6.3.2 is tested using SPSS to examine which are the key governance mechanisms in the Thai reorganization proceedings contributing to post-bankruptcy performance. In the analysis, with standardized residuals within above ± 2 standard deviations are omitted research suggests that these cases may unreasonably influence the accuracy of estimates (Field 2005). Five cases with standardized residuals greater than ± 2 are removed reducing the sample firms of the OLS regression test from 101 to 96. The sample of 96 and 9 predictors remains a sufficient number of sample firms to test the regression model (see Section 6.2.1).

The regression findings in Table 6.7 indicate that there are significant mechanisms that dominate post-bankruptcy performance. Three variables (ownership concentration by the largest shareholder - OWNER, the natural log of cash compensation for the plan administrator - LNCAPLAD, and the natural log of common shares held by the plan administrator - LNSHPLAD) are found as positive

and significant predictors at $p < .10$. The results suggest that these mechanisms have significant and positive effects on post-bankruptcy performance as measured by LPFOM. The coefficient of asset restructuring - ARSTR shows a positive relationship which is as expected although not significant.

However, two variables (the natural log of the proportion of outside directors in the planner – LNOUTPLA and operational restructuring - ORSTR) were found to be insignificant. Varying from the expected hypotheses, the relationship between the natural log of the proportion of outside directors in the planner - LNOUTPLA and performance and the relationship between operational restructuring - ORSTR and performance show negative signs. The results indicate that outside directors in the planner and operational and asset restructuring methods do not significantly enhance the performance of firms under reorganization.

The findings also show that firm size and industry type are significant. These results indicate that size and industry type influence reorganized firms' post-bankruptcy performance in comparison to predicted performance. Firm size - LNSIZE shows a positive sign whereas industry type - INDSTR appears negative. This can be interpreted to suggest that large firms have a positive effect on post-bankruptcy performance and manufacturing industry has a negative effect on post-bankruptcy performance as measured by LPFOM.

Table 6.7: Empirical results of predictors of a firm's post-bankruptcy performance as measured by the natural log of post-bankruptcy performance (LPFOM)

Model:

$$\text{LPFOM} = \alpha + \beta_1(\text{LNOUTPLA}) + \beta_2(\text{OWNER}) + \beta_3(\text{LNCAPLAD}) + \beta_4(\text{LNSHPLAD}) + \beta_5(\text{ORSTR}) + \beta_6(\text{ARSTR}) + \beta_7(\text{LNSIZE}) + \beta_8(\text{INDSTR}) + \beta_9(\text{TYPE}) + \varepsilon$$

| Dependent Variable | Independent Variables | Hypothesis | Expected sign | Coefficient | t-value | Significance |
|--------------------|-----------------------|------------|---------------|-------------|---------|--------------|
| LPFOM | LNOUTPLA | H1 | + | -0.068 | -0.599 | .275 |
| | OWNER | H3 | + | 0.280 | 2.085 | .020* |
| | LNCAPLAD | H4a | + | 0.008 | 1.434 | .077* |
| | LNSHPLAD | H4b | + | 0.037 | 1.572 | .060* |
| | ORSTR | H5a | + | -0.018 | -0.244 | .404 |
| | ARSTR | H5b | + | 0.013 | 0.191 | .424 |
| | LNSIZE | | | 0.048 | 1.685 | .048* |
| | INDSTR | | | -0.171 | -2.451 | .008* |
| | TYPE | | | 0.055 | 0.592 | .277 |
| | Intercept | | | 7.439 | 35.984 | .000 |
| F-value | 2.050* | | | | | |
| R-square | 0.178 | | | | | |
| Adjusted R-square | 0.091 | | | | | |

Note: N = 96 sample companies

* is percent significance level < .10 (1-tailed)

Where:

LPFOM = The natural log of the three-year average value of the difference between actual profits before tax and predicted profits before tax as the percentage of absolute value of predicted profits before tax in years 1-3

LNOUTPLA = The natural log of the proportion of outside directors in the planner

OWNER = The proportion of common shares held by the largest shareholder of the firm

LNCAPLAD = The natural log of amounts of cash compensation for the plan administrator

LNSHPLAD = The natural log of the percentage of common shares held by the plan administrator

ORSTR = Dummy variable (1,0) 1 for operational restructuring or 0 otherwise

ARSTR = Dummy variable (1,0) 1 for asset restructuring or 0 otherwise

LNSIZE = The natural log of the book value of total assets in the firm

INDSTR = Types of industry; 1 for manufacturing, 0 for others

TYPE = Types of company; 1 for public company, 0 for others

The model in Table 6.7 is significant at $p < .10$ level with an F-test value of 2.050. The adjusted R-square value of the model is 0.091, suggesting that the independent variables of the estimated equation explain approximately 9.1 percent of the variation in post-bankruptcy performance. The explanation power is consistent with previous studies that have employed the OLS regression model to investigate the effect of governance mechanisms on performance with the adjusted R - square approximating 10% (for example, the studies of Mehran (1995), Johnson, Boone, Breach and Friedman (2000), Lemmon and Lins (2003) and Peng (2004)).

Table 6.8: Tolerance and Variance Inflation Factors (VIF) based on 96 sample companies

| Variables | Tolerance | VIF |
|-----------|-----------|-------|
| LNOUTPLA | .853 | 1.173 |
| OWNER | .676 | 1.478 |
| LNCAPLAD | .862 | 1.160 |
| LNSHPLAD | .731 | 1.368 |
| ORSTR | .794 | 1.259 |
| ARSTR | .883 | 1.132 |
| LNSIZE | .647 | 1.544 |
| INDSTR | .844 | 1.184 |
| TYPE | .568 | 1.760 |

Table 6.8 that examines tolerance and variance inflation factors (VIF) based on 96 sample companies shows that the tolerance of variables in the model is not close to zero and the variance inflation factors (VIF) of variables are less than 10. These results indicate that multicollinearity between the independent variables is not significant for this model (Field 2005; Tabachnick & Fidell 2001).

6.4 Hypotheses testing

The results of the OLS regression are shown in Table 6.7. As noted in Section 6.3.2, the natural log of the proportion of outside directors in the plan administrator (LNOUTPLAD) and financial restructuring (FRSTR) were removed from the model. Consequently, hypotheses 2 and 5c which are related to LNOUTPLAD and FRSTR variables respectively, were not available for hypothesis testing in this study. The following explains the results for hypotheses 1, 3, 4a, 4b, 5a, and 5b.

6.4.1 Monitoring mechanism hypotheses

6.4.1.1 Outside directors in the planner (LNOUTPLA)

Based on the literature regarding governance mechanisms of agency theory, outside directors in the planner are expected to be an important monitoring mechanism of the bankruptcy reorganization process that can enhance post-bankruptcy performance following reorganization. It was hypothesized that:

H1: There is a positive relationship between the proportion of outside directors in the planner of the firm and post-bankruptcy performance.

The results of the model in Table 6.7 show that Hypothesis 1 is not supported by the LPFOM model. The regression coefficient on LNOUTPLA is negative (-0.068) contrary to expectation, although statistically insignificant. This finding suggests that outside directors in the planner are not positively related to a firm's post-bankruptcy performance.

The result is in line with the studies by Johnson, Daily and Ellstrand (1996), Dalton, Daily, Ellstrand and Johnson (1998), Klein (1998), and Bhagat and Black (2002) who also found no significant relationship between outside directors in the board and firm performance. This supports Bhagat and Black's (2002) view that the abilities of outside directors in the board to improve firm performance may be limited by many factors. For example, in terms of the independence of monitoring, they may not have enough independence to monitor business management of the firm or they may have

personal relationships with inside directors that affect their independence. Thus, to be a clearer understanding whether they are truly independent and what are the critical factors that influence their abilities, it needs to be more investigation in future research.

6.4.1.2 Ownership concentration by the largest shareholder (OWNER)

Ownership concentration is also suggested by agency theory as another monitoring mechanism of the bankruptcy reorganization process. A number of previous studies reviewed in Chapter 3 support the view that this mechanism has a positive effect on firm performance through reduced agency costs. As a result of these studies, the hypothesis in this study is:

H3: There is a positive relationship between ownership concentration by the largest shareholder of the firm and post-bankruptcy performance.

The results of the model in Table 6.7 show that Hypothesis 3 is supported by the LPFOM model. The regression coefficient on OWNER is positive (0.280) as hypothesized and statistically significant. This finding suggests a positive effect of ownership concentration on post-bankruptcy performance.

The result supports prior research undertaken by Cubbin and Leech (1983), Wruck (1989), McConnell and Servaes (1990), and Oswald and Jahera (1991). They similarly found a positive relationship between ownership concentration and profitability. It is also in line with the study of Wiwattanakantang (1999) who studied the effect of ownership concentration and corporate governance on performance by using a sample of Thai firms and found that major shareholders of the firm enhance profitability. This indicates that this mechanism is advantageous in improving firm performance and is consistent with the expectation of agency theory.

This result is also consistent with Charitou et al.'s (2007) research on the effective role of institutional ownership on firm performance of a bankruptcy reorganization filing. The result confirms that reorganized firms through the court generate benefits

from concentrated ownership in a role of monitoring management. Thus, it can be concluded that ownership concentration of the large shareholder is a powerful monitoring mechanism of the bankruptcy reorganization process and this can produce better post-bankruptcy performance of the firm and lead to greater success in bankruptcy reorganization.

6.4.2 Incentive mechanism hypotheses

6.4.2.1 Cash compensation for the plan administrator (LNCAPLAD)

Cash compensation is a type of managerial remuneration that Jensen and Murphy (1990) indicate can provide financial incentives for managers to maximize firm value and decrease their opportunistic behaviors. Based upon agency theory, there should be a positive relationship between managerial compensation and firm performance. Thus, the hypothesis is:

H4a: There is a positive relationship between cash compensation for the plan administrator and post-bankruptcy performance.

As can be seen from Table 6.7, the regression coefficient on LNCAPLAD is positive (0.008) in the direction as predicted and statistically significant at the $p < .10$ level. Hence, hypothesis 4a is supported by the model. This finding suggests that cash compensation for the plan administrator is a useful incentive mechanism of the bankruptcy reorganization process that has a positive relationship with post-bankruptcy performance.

This finding is similar to Jensen and Meckling's (1976), Fama's (1980) and Jensen and Murphy's (1990) conclusion that executive compensation is a critical mechanism of agency theory that leads to an increase in firm performance. It corroborates research by Patton (1951), Roberts (1956), Dyl (1988) and Goldberg and Idson (1995) that the positive relationship between executive compensation and profits is statistically significant. It is also consistent with the studies by Grant (1998) and Kaplan and Atkinson (1998) who found that executive pay is an efficient incentive mechanism to improve the goal alignment of shareholders and managers.

Following the literature review in Chapter 2, no previous studies regarding governance patterns in bankrupt firms concentrated on exploring this factor. It can be said that this is the first time this mechanism was examined in Thai insolvent firms. LNCAPLAD in the study was measured by the natural log of amounts of cash compensation for the plan administrator, showing that the influence of cash compensation for the plan administrator on post-bankruptcy performance is conclusive. The evidence asserts that it is an effective incentive mechanism in controlling agency problems of reorganized firms. Thus, it is possible to say that the use of this mechanism can contribute to successful bankruptcy reorganization.

6.4.2.2 Managerial shareholding of the plan administrator (LNSHPLAD)

Previous research suggests managerial shareholding is another important form of executive remuneration that can motivate managers to increase firm value (Jensen & Meckling 1976; Mehran 1995). This hypothesis focuses on equity-based compensation as agency theory and previous studies suggest that it can align managers remuneration with the firm's financial performance. The hypothesis is:

H4b: There is a positive relationship between percentage shareholding of the plan administrator and post-bankruptcy performance.

The regression coefficient on LNSHPLAD in Table 6.7 is positive (0.037) as the expected direction and statistically significant at the $p < .10$ level. This indicates that hypothesis 4b is supported by the model. The finding suggests that managerial shareholding of the plan administrator is an important incentive mechanism of the bankruptcy reorganization process that has a positive impact on post-bankruptcy performance.

Managerial shareholding in this study is measured by common shares held by the plan administrator which is consistent with the research by Jensen and Meckling (1976) and Mehran (1995). This study supports their findings that the percentage of shares held by the CEO is significant in company performance. Similarly, Fosberg and Rosenberg (2003) found share ownership by the firm's executive to be an

efficient mechanism in controlling agency costs and can stimulate managers to produce higher returns for shareholders. The finding also extends Jensen and Murphy's (1990), Kaplan and Atkinson's (1998) and Kim's (2006) work by indicating that this mechanism can encourage managers to achieve higher firm value in post-bankruptcy situation.

As with H4a, no prior research concerning governance patterns in bankrupt firms has explored the impact of managerial shareholding on post-bankruptcy performance. This is also the first time that equity-based compensation has been investigated in the bankruptcy reorganization of Thai insolvent firms. Evidence shows that it can motivate the plan administrator to improve post-bankruptcy performance of reorganized firms, thus implying that the use of this mechanism can assist in successful bankruptcy reorganization.

6.4.3 Market mechanism hypotheses

6.4.3.1 Operation restructuring methods of insolvent firms (ORSTR)

Operational restructuring is a restructuring strategy employing changes to internal operations to increase value for stakeholders. Much previous research investigated the relationship between restructuring activities and firm performance and confirms the efficiency of restructuring methods i.e., research by Singh (1990) and Bruton, Keels and Scifres (2002). This suggests hypothesis 5a:

H5a: There is a positive relationship between an operational restructuring strategy and post-bankruptcy performance.

The regression coefficient for this variable (ORSTR) in Table 6.7 is in the negative direction (-0.018) varying from expectation, although statistically insignificant. Hypothesis 5a is not supported by the model. Somewhat surprisingly, the finding suggests that operational restructuring methods are not an important mechanism of the bankruptcy reorganization process as it does not have a positive relationship with post-bankruptcy performance.

This result conflicts with the studies by Singh (1990) who examined a method of operational restructuring - management buyouts and found it can make an improvement in a firm's financial performance. It is also contrary to Muscarella and Vetsuypens's (1990), Opler's (1992) and Bruton et al.'s (2002) findings that found that methods of restructuring strategy can create shareholder wealth.

Although the result is inconsistent with the above studies, it is not alone as a number of prior studies also found that operational restructuring methods did not play a significant role during the time of reorganization (for example, the studies by Datta and Iskandar-Datta (1995) and Sudarsanam and Lai (2001)). Datta and Iskandar-Datta (1995) examined various forms of restructuring and found this mechanism was not an important strategy after filing for reorganization in bankruptcy. Sudarsanam and Lai's (2001) results also showed that operational restructuring methods in their model were negatively related to firm value. Their multiple regression results indicated that this mechanism was not associated with the probability of recovery.

It could be speculated that the financial problems of Thai insolvent firms may be so complex that this mechanism cannot overcome their distress. Another possible reason is that the methods used by firms may be not consistent with the cause of their problems which are often financial and balance sheet related. The inconclusive result suggests that they need to be studied in future research.

6.4.3.2 Asset restructuring methods of insolvent firms (ARSTR)

Asset restructuring is another strategy that can assist managers in increasing firm performance (Bethel & Liebeskind 1993; Byrd, Parrino & Pritsch 1998; Fama 1980). This conclusion suggests hypothesis 5b:

H5b: There is a positive relationship between an asset restructuring strategy and post-bankruptcy performance.

Similar to H5a, the finding presented in Table 6.7 indicates that hypothesis 5b is not supported by the model. The regression coefficient for this variable (ARSTR) is

positive (0.013), in the expected direction but statistically insignificant at the $p < .01$ level. The finding suggests that the asset restructuring method is not an important market mechanism of the bankruptcy reorganization process as it does not have a significant relationship with post-bankruptcy performance.

This finding supports the research by Sicherman and Pettway (1987) who examined asset restructuring - mergers and acquisitions and found this strategy to be positively related to abnormal returns to stockholders but also insignificant. Similarly, Phan and Hill (1995) found that this restructuring strategy produces better performance as measured by profitability. This is also consistent with the study by Sudarsanam and Lai (2001) who found that higher proportions of recovery than non-recovery firms chose asset restructuring methods to restructure their financial distress.

In bankruptcy reorganization, the result reinforces the findings of Hotchkiss (1994) that abnormal returns of companies that file for bankruptcy reorganization are positively related to asset sales. It is also in line with Datta and Iskandar-Datta's (1995) conclusion that the methods of this mechanism particularly divestitures play an important role in reorganized firms. However, the insignificant result in this study implies that asset restructuring methods may be less useful for solving the financial distress of Thai insolvent firms. Thus, the efficacy of each method of asset restructuring should be more closely examined in future research.

A summary of the results of hypothesis testing is exhibited in Table 6.9.

Table 6.9: Results of hypothesis testing

| Hypothesis | Expected sign | Result |
|--|---------------|----------------|
| Monitoring mechanisms: | | |
| H1: There is a positive relationship between the proportion of outside directors in the planner of the firm and post-bankruptcy performance. | + | Not Supported |
| H3: There is a positive relationship between ownership concentration by the largest shareholder of the firm and post-bankruptcy performance. | + | Supported |
| Incentive mechanisms: | | |
| H4a: There is a positive relationship between cash compensation for the plan administrator and post-bankruptcy performance. | + | Supported |
| H4b: There is a positive relationship between percentage shareholding of the plan administrator and post-bankruptcy performance. | + | Supported |
| Market mechanisms: | | |
| H5a: There is a positive relationship between an operational restructuring strategy and post-bankruptcy performance. | + | Not Supported |
| H5b: There is a positive relationship between an asset restructuring strategy and post-bankruptcy performance. | + | Not Supported* |

* Note: The sign H5b is positive in the expected direction.

6.5 Summary

This chapter reports the empirical results of the OLS regression used to test the research hypotheses of the study. It also outlines changes to the variable studied to meet the requirements of the assumptions of the statistical tests used.

The OLS regression test results based on 96 sample firms indicate that there are three expected predictors in the model which positively and significantly affect a firm's post – bankruptcy performance. These predictors are ownership concentration of the largest shareholder (OWNER - H3), the natural log of amounts of cash compensation for the plan administrator (LNCAPLAD - H4a), and the natural log of common shares held by the plan administrator (LNSHPLAD - H4b). Asset restructuring (ARSTR - H5b) also shows a positive sign as expected, implying that it may increase a firm's value although not significant. Expected predictors that show insignificant effects on post-bankruptcy performance are the natural log of outside directors in the planner (LNOUTPLA - H1) and operational restructuring (ORSTR - H5a). Overall, the results suggest that monitoring and incentive mechanisms within the bankruptcy reorganization proceedings are significantly related to a firm's post-bankruptcy performance.

The final chapter will present the conclusions of the study. This chapter contains a summary and the implications of the results, the limitations of the study and suggestions for future research.

Chapter 7

Conclusion

7.1 Introduction

The final chapter presents conclusions of the study. It contains a summary of the research findings in Section 7.2, implications of the study in Section 7.3, describes its limitations in Section 7.4 and outlines suggestions for further research in Section 7.5.

7.2 Summary of research findings

This thesis utilizes agency theory to examine the impact of governance mechanisms within the Thai bankruptcy reorganization proceedings on firm performance. Its aim is to investigate how these mechanisms affect a firm's post-bankruptcy performance. The study uses the data of 111 Thai insolvent companies, both public and private, whose plans were approved by the Thai Central Bankruptcy Court between 1999 and 2002 as the sample for analysis.

Three key governance mechanisms are identified which agency theory suggests can limit agency problems and improve performance (Coles & Hesterly 2000; Jensen 1986; Montgomery, Thomas & Kamath 1984; Peng 2004). The first is monitoring, which include outside directors in the planner and ownership concentration by the largest shareholder. The second is incentive alignment, namely, cash compensation for the plan administrator and common shares held by the plan administrator and the third is market mechanisms of which operational and asset restructuring is tested. Descriptive statistics and ordinary least squares regression were used to analyze the results of the study. The following is a summary of the results of each type of mechanism.

First, monitoring mechanisms: The results indicate that ownership concentration by the largest shareholder is influential. Descriptive statistics confirm that the ownership

of the largest shareholder in sample firms, both private and public, remains highly concentrated for firms in the bankruptcy reorganization process. Statistically, ownership concentration by the largest shareholder shows a positive relationship with post-bankruptcy performance. This finding is consistent with previous studies and the expectation of agency theory (Oswald & Jahera 1991; Shleifer & Vishny 1986; Wruck 1989). Contrary to expectation, another mechanism - outside directors in the planner is negatively related to post-bankruptcy performance. This finding is not statistically significant. However, it suggests that increasing outside directors in the planner will not necessarily improve performance.

Second, two incentive mechanisms researched in this study, cash compensation for the plan administrator and common shares held by the plan administrator were found to be significant and have a positive relationship with post-bankruptcy performance. Descriptive statistics found that most sample firms provided incentives to motivate the plan administrators. Cash compensation is around 500,000 baht per month on average and 300,000 baht per month at median, whereas managerial shareholding is 13.26% on average and less than 1% at median. The findings are in line with prior research that shows these mechanisms can reduce agency problems and stimulate managers to create firm value (Dyl 1988; Jensen & Murphy 1990; Mehran 1995).

Third is the use of market mechanisms. The effectiveness of operational and asset restructurings was inconclusive. There is no evidence in this study that indicates that they play a significant role in improving post-bankruptcy performance. Descriptive statistics found that among 67 firms using operational restructuring, 39 (58%) succeeded in producing a positive performance which means that actual performance over a three-year period exceeded predicted performance and of 43 firms which used asset restructuring, 29 (67%) succeeded. Statistically, operational restructuring is negatively though not significantly related to firm performance consistent with Sudarsanam and Lai's (2001) conclusion, whereas asset restructuring was found to be positively related to post-bankruptcy performance but insignificant which is similar to Sicherman and Pettway's (1987) results.

In summary, these results indicate that ownership concentration by the largest shareholder and incentive mechanisms both cash compensation and managerial

shareholding for the plan administrators play important roles in bankruptcy reorganization. It can be concluded that they can mitigate agency problems and increase a firm's post-bankruptcy performance consistent with agency theory.

In addition, interesting results from descriptive analysis included that the number of firms with positive post-bankruptcy performance (PFOM) were greater than those with negative post-bankruptcy performance. Also, the majority of Thai insolvent firms emerging from bankruptcy had better actual performance in comparison to predicted performance under the bankruptcy arrangement (see the results in Chapter 5). This is contrary to the studies of Hotchkiss (1995) and Alderson and Betker (1999) who examined the effectiveness of the bankruptcy reorganization process by using a sample of U.S. firms and found the majority that reported operating profit margins exhibited poor performance. The findings of this study also show better firm recovery outcomes than Vongvipanond, Jumpa and Wichitaksorn's (2002) study which examined a sample of Thai court-based reorganized firms. They found that the average recovery rate of Thai insolvent firms from January 1999 to June 2002 was 49%, while the current study found the recovery rate of Thai insolvent firms from January 1999 to December 2005 to be 60% as indicated by positive PFOM that 60% of sample firms had actual performance exceeding predicted performance under the reorganization plan (see Table 5.2 in Chapter 5). The results from negative PFOM in this table also indicated that 40% of the sample failed to meet their predicted performance. When considering each company type in the sample, the data reveals that private companies achieved successful bankruptcy reorganization at a recovery rate of 58%, whereas public companies performed marginally better with a higher recovery rate of 66%.

7.3 Implications of the findings of the study

The implications in this study are divided into two parts - theoretical and managerial implications. A discussion of these implications is as follows.

7.3.1 Theoretical implications

From the point of theoretical implications, this study supplements prior research by providing a unique contribution to the literature regarding the critical governance factors that influence successful bankruptcy reorganization. First, this study has contributed to research on key governance mechanisms of agency theory by extending and adapting the study of Agrawal and Knoeber (1996) who examined the effectiveness of several agency problem-control mechanisms on firm performance in a single OLS regression model. Among alternative mechanisms in their model, only one monitoring mechanism, that is outside directors on the board is significant but has a negative relationship with performance. Building on their work, the current study examines monitoring, incentive and market mechanisms within the Thai reorganization proceedings. Evidence in this study confirms that not only the monitoring mechanism (ownership concentration by the largest shareholder) but also incentive mechanisms (cash compensation and managerial shareholding for the plan administrative) are able to improve actual post-bankruptcy performance.

Second, this is the first known study of key governance mechanisms within the Thai bankruptcy reorganization process that have been investigated by using a comparison of actual to predicted performance (LPFOM) as a measure of post-bankruptcy performance. Much previous research attempted to evaluate the total efficiency of mechanisms in the process by measuring post-bankruptcy performance in various ways, such as accounting performance, cash flow performance and stock performance (e.g., the studies of Hotchkiss (1995), Alderson and Betker (1999) and Platt and Platt (2002)).

Third, a review of the literature found that previous research associated with governance patterns in a bankrupt firm has been minimal (see Section 2.2.3 of Chapter 2). Thus, with the guidance of agency theory, the current study attempts to extend research in this area by investigating governance mechanisms included in the bankruptcy reorganization process implemented in Thai bankrupt firms. The results of the study confirm that two types of mechanisms in the process, monitoring and incentive mechanisms, are significant determinants of a bankrupt firm's post-bankruptcy performance.

Fourth, most previous studies were undertaken in Western countries, particularly the U.S. and used public companies which had traded in a national stock exchange for analysis (e.g., Brockman, Hoffman, Dawley & Fornaciari 2004; Chatterjee, Dhillon & Ramirez 2004; Daily 1996; Hubbard & Stephenson 1997; Kim 2006). Few empirical studies exist on unlisted companies (see Table 2.1: A summary of the major empirical studies relating to the bankruptcy reorganization proceedings). Thus, this study contributes to the investigation of insolvent firms by examining listed and unlisted companies a different country (Thailand) setting. It found that company type is not significant in determining post-bankruptcy performance.

Fifth, empirical evidence shows that little published research has been undertaken concerning the effectiveness of bankruptcy reorganization proceedings in Asian countries (see Sections 2.2 of Chapter 2), particularly, their impact on post - bankruptcy performance. Thus, the present study contributes to this research by investigating reorganized firms under the Bankruptcy Act of Thailand through an empirical study. Its results may be the starting point of research in this area in Asian countries and Thailand and also benefit the public by enabling them to obtain more knowledge of the subject of business reorganization through the bankruptcy court.

7.3.2 Managerial implications

From the point of decision-makers, namely debtor firms, creditors, shareholders, financial consultants, planners and plan administrators, and regulators, the study has several managerial implications. It reveals the firm performance outcomes of implementing the mechanisms in the Thai bankruptcy reorganization proceedings and provides an insight into the effectiveness of the total management of the bankruptcy reorganization through the court.

First, the findings from the current study indicate that in bankruptcy reorganization, the role of the largest shareholder is vital to solving financial problems of insolvent companies. Apparently, ownership concentration is important in monitoring reorganized firms and can lead to improved post-bankruptcy performance. This is

more likely to convince the Government and the bankruptcy court that the concept of a voluntary bankruptcy of Chapter 3/1, the bankruptcy reorganization process is an effective concept even when applied to highly concentrated ownership. Creditors can also get benefits from this mechanism as the company performance improves, they will receive debt payments as specified in the reorganization plan. This supports Vongvipanond, Jumpa and Wichitaksorn's (2002) view that most reorganized firms are of the cooperative type between creditors and the debtor. In addition, the efficiency of this mechanism is also advantageous to debtor firms in terms of enabling other shareholders and new investors to have confidence to inject more funds into debtor firms (Cho 1998).

Second, the findings from the current study also show that managerial remuneration for the plan administrator in forms of cash and equity compensation positively influence post-bankruptcy performance. It suggests that appropriate compensation for the plan administrator can help debtor firms achieve successful bankruptcy reorganization. This discovery is consistent with Listokin's (2006) view that managers in bankrupt firms deserve to receive appropriate compensation for their roles in managing the firm and are crucial to a firm's survival in the future. Thus, debtor firms, the planner and the bankruptcy court as regulators need to take this into account when determining the form and the amount of these payments.

Third, the efficiency of the approved reorganization plans in improving the performances of sample firms is tested. Descriptive statistics in Chapter 5 show that post-bankruptcy performances (PFOM) in comparison to predicted performances have more positive values than negative values. The majority (60%) of sample firms succeed in implementing their plans as indicated by positive PFOM. This informs all parties, including the official receiver and the bankruptcy court, that the financial feasibility of the plan is important to successful bankruptcy reorganization and the financial projections should not be overestimated (Michel, Shaked & McHugh 1998). Thus, regulations relating to the plan (i.e. section 90/42) that only specified broad requirements should be revised and clearly stated concerning financial planning for bankruptcy reorganization.

Fourth, the overall results from this study also indicate the total efficiency of the bankruptcy reorganization process and management in Thailand. Among three types of six governance mechanisms of the process - monitoring, incentive and market mechanisms, the significant results confirm that two types - monitoring and incentive mechanisms can enable insolvent firms to improve post-bankruptcy performance. Thus, it can be concluded that the total management of the process in Thailand is at a satisfactory level. Previous studies relating to the Chapter 3/1 process also agree that the satisfaction level of the process in terms of management and work accomplishment is quite good (Pipatsitee et al. 2003, 2004). This should help to convince debtor firms, creditors and shareholders that the bankruptcy reorganization process of the Thai Bankruptcy Act is useful for resolving their financial distress. The Government and the bankruptcy court should take this into account when undertaking a review of the regulations.

7.4 Limitations

Every study has a number of limitations and in this study these are 1) the sample size, 2) the study period, 3) the economic conditions at the time of data collection, 4) the measurement of post-bankruptcy performance, 5) the adjusted R-square of the model, and 6) the application of the study.

First, the sample size in the study is small although represents the entire population for the period studied. The Thai Bankruptcy Court commenced in June 1999, thus, some companies may have been uncertain as to the effectiveness of the bankruptcy reorganization proceedings and hesitated to solve their financial problems through the court. Consequently, the number of insolvent firms that filed for bankruptcy reorganization was small. In addition, the primary investigation found that the number of insolvent companies that filed for bankruptcy reorganization and whose plans had been approved by the Thai Central Bankruptcy Court during 1999 - 2002 amounted to 111 companies. When collecting the data, however, it was found that 10 companies had data missing, leaving 101 for analysis.

Second, the study period is also a limitation related to a small sample size. The criteria of sample selection needed to be limited to a four-year period (1999 - 2002) in order to collect details of the three-year data following bankruptcy reorganization (1999 - 2005). Nevertheless, much research concerning post-bankruptcy performance has also used a small sample size (e.g., research by Alderson and Betker (1999) and Platt and Platt (2002)).

The third limitation of the sample in this study is the economic conditions at the time of data collection. According to the annual economic reports ranging from 1999 to 2005, from the Bank of Thailand, it was found that the Thai economy had recovered from the 1997 Asian financial crisis in this period (Annual Economic Report 1999 - 2005). Economic growth and stability had been satisfactory since 1999. It is not possible to assert that the findings would hold under significantly different economic conditions.

The fourth limitation is the measurement of post-bankruptcy performance (PFOM). A measure of PFOM in this study was defined following the bankruptcy reorganization process of The Thai Bankruptcy Act. The law specifies that a reorganized firm must manage business operations in accordance with the approved plan until its reorganization is achieved. The regulations of the process clearly state that the reorganization plan is the most important aspect for bankruptcy reorganization. Thus, to capture successful bankruptcy reorganization, post-bankruptcy performance in this study was determined to measure actual performance by comparing it with predicted performance. However, the literature in Chapter 2 (Section 2.2.1) shows that measures of success in the bankruptcy reorganization process were of various types. Many used accounting performance such as return on assets (ROA) to examine post-bankruptcy performance of reorganized firms in terms of profitability (Hotchkiss 1994, 1995; and Maksimovic & Phillips 1998). Although the definition of post-bankruptcy performance in this study does not cover these measures of profitability, it does reflect the capability of the firms to achieve their reorganization plan and the effectiveness of the bankruptcy reorganization process, which is the major motivation of the current study.

The fifth limitation concerns the adjusted R-square of the model. The results of the OLS regression analysis in Chapter 6 (Section 6.3.3) show that the adjusted R-square of the model is 0.091. This value indicates that around 10% of the variation in post-bankruptcy performance is explained by explanatory variables of the estimate equation. This is consistent with many previous researchers who examined some critical factors of firm performance and also obtained an adjusted R-square of around 10% (Johnson, Boone, Breach & Friedman 2000; Lemmon & Lins 2003; Peng 2004). The small adjusted R-square (10%) means 90% of the variation in post-bankruptcy performance is due to factors not in the model. Following the literature in Chapter 2, it was found that there were many critical factors affecting a firm's post-bankruptcy performance and influencing successful bankruptcy reorganization, namely internal, external, and governance factors. However, based on the research model and hypotheses in Chapter 3, this study concentrates only on an examination of governance factors within the bankruptcy reorganization process, and it was not the intention to investigate all factors of post-bankruptcy performance.

The final limitation is the application of the studies findings to countries outside Thailand. This study focuses on insolvent companies that filed a petition for bankruptcy reorganization under the Thai Bankruptcy Act. Thus, the results of the study are applicable for Thai companies in the bankruptcy reorganization process and may not be applicable for all companies in financial distress. However, comparability can be made regarding insolvent companies in other countries that have similar regulations in the Bankruptcy Act. The literature in Chapter 2 reveals that the results of most studies regarding bankruptcy reorganization are dominated by data from Western countries. Thus, extending the empirical study into the less researched areas, particularly Asian countries such as Thailand is more likely to increase the utility and generalizability of the findings.

7.5 Suggestions for further research

According to the results of the OLS regression analysis in this study, governance mechanisms in the Thai bankruptcy reorganization process play a significant role in post-bankruptcy performance. However, in the literature review, the study found

limited prior research had examined governance mechanisms in an agency theoretical framework. There are several areas which could be reinvestigated in future.

Studying determinants of a firm's post-bankruptcy performance by considering environmental factors on economic growth - Economic growth may influence factors of successful bankruptcy reorganization and may bring about different results between periods of high growth and low growth. Thus, future research should try to reexamine the results of the current study by collecting data under different economic conditions and compare the results.

The relationship between asset restructuring methods and actual post-bankruptcy performance requires further research. This study found the relationship between actual post-bankruptcy performance and asset restructuring methods to be insignificant but had a positive direction as hypothesized. Many previous studies confirmed that the methods of this strategy (i.e. asset sales and mergers) can improve firm performance (Bowman, Singh, Useem & Bhadury 1999; Hotchkiss 1994). This indicates that the efficacy of asset restructuring methods is inconclusive and should be replicated in further research to obtain a clearer understanding of the relationship.

The role of outside directors in the planner may need further reexamination. In this study, it was hypothesized that it is positively related to post-bankruptcy performance. However, the result shows an insignificant and negative direction in OLS regression analysis whereas the majority of previous studies support that a higher proportion of outside directors in the board is beneficial for shareholders (Brickley, Coles & Terry 1994; Daily 1995). Thus, future research could separate outside directors in the planner into two variables – one as truly independent outside directors and another as a nominee of family owners.

As with outside directors in the planner, it is interesting to investigate the types of the plan administrator and their association with post-bankruptcy performance.

Another direction for future research is to investigate financial and internal controls (i.e. budget system and internal audit) of insolvent firms during the reorganization

time. Sandino (2004) studied types of management control systems and firm performance and found that many internal controls are associated with better firm performance. Thus, these controls should be examined in a reorganization context to see whether they can assist a bankrupt firm increase its post-bankruptcy performance.

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Appendix 1

Chart of business reorganization process

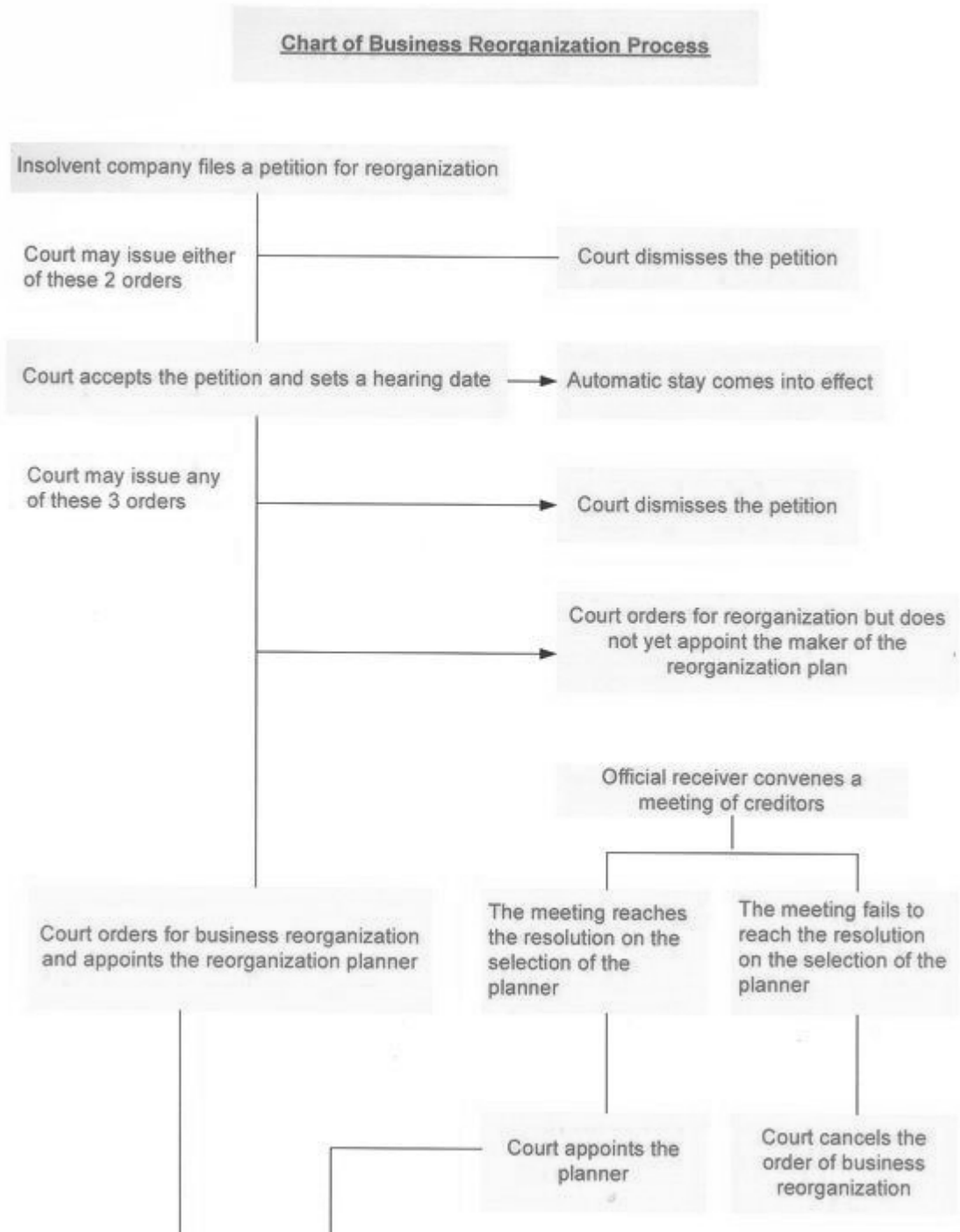
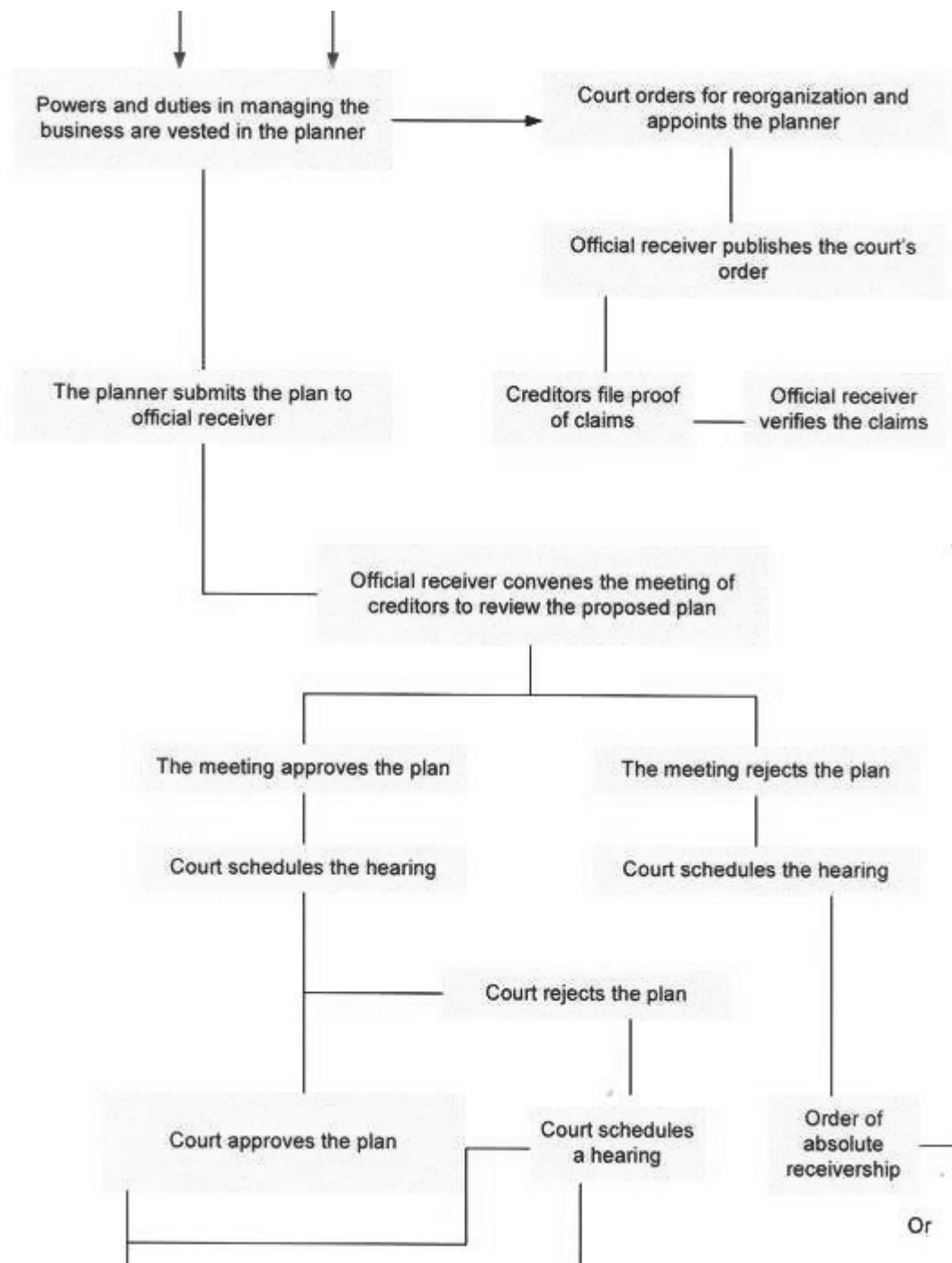


Chart of business reorganization process (continued)



Appendix 2

List of sample companies

Notes: 1. Red case number is the number that the company had already considered by the court.
 2. # 1 of industry column means manufacturing company, # 0 means non-manufacturing company.
 3. Size is the book value of company's total assets in million Baht when the court has issued the order for business reorganization.

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|---|------------------------|---|-----------------|--|----------------------------|
| 1. THAI MODERN PLASTIC INDUSTRY PUBLIC COMPANY LIMITED | lor.Phor. 3/2541 | April 20,1999 | 1 | | 6720.92 |
| 2. NAMPRASERT CONSTRUCTION COMPANY LIMITED | Phor. 9/2542 | March 2,2000 | 0 | Construction | 299.05 |
| 3. PANJAPOL PULP INDUSTRY PUBLIC COMPANY LIMITED | Phor. 12/2542 | March 30,2000 | 1 | | 10,000.39 |
| 4. PANJAPOL PAPER INDUSTRY COMPANY LIMITED | Phor. 8/2542 | April 3,2000 | 1 | | 3,695.64 |
| 5. SURANAKORN MUANGMAI COMPANY LIMITED | Phor. 5/2542 | April 18,2000 | 0 | Central market of agricultural goods | 128 |
| 6. TONPING VALLEY COMPANY LIMITED | Phor. 10/2542 | May 3,2000 | 0 | Gardening, Resort and Hotel | 175.44 |
| 7. SIAM STEEL INTERNATIONAL PUBLIC COMPANY LIMITED | Phor. 6/2542 | May 11,2000 | 1 | | 1,933.84 |
| 8. THAI GERMAN PRODUCTS PUBLIC COMPANY LIMITED | Phor. 11/2542 | May 18,2000 | 1 | | 4,831.51 |
| 9. THAI PRECISION MANUFACTURING COMPANY LIMITED | Phor. 16/2542 | June 12,2000 | 1 | | 899.99 |
| 10. BANGKOK RANCH PUBLIC COMPANY LIMITED | Phor. 2/2543 | August 17,2000 | 1 | | 2,349.95 |
| 11. NAWARAT PATANAKARN PUBLIC COMPANY LIMITED | Phor. 9/2543 | October 10,2000 | 0 | construction and real estate development | 3,636 |
| 12. P.A.E. (Thailand) PUBLIC COMPANY LIMITED | Phor. 6/2543 | November 9,2000 | 0 | Construction | 491.42 |
| 13. THAI ENGINE MANUFACTURING PUBLIC COMPANY LIMITED | Phor. 13/2543 | December 20,2000 | 1 | | 564.85 |
| 14. ROBINSON DEPARTMENT STORE PUBLIC COMPANY LIMITED | Phor. 21/2543 | December 20,2000 | 0 | Department store | 13,160 |
| 15. WONGPAITON GROUP PUBLIC COMPANY LIMITED | 30/2543 | December 22,2000 | 1 | | 2,133.75 |
| 16. THAI TELEPHONE & TELECOMMUNICATION PUBLIC COMPANY LIMITED | Phor. 25/2543 | December 27,2000 | 0 | Telecommunication | 10,046.39 |
| 17. SRIVARA REAL ESTATE GROUP PUBLIC COMPANY LIMITED | 445/2543 | December 28,2000 | 0 | Trade of real estate | 2,125.28 |

List of sample companies (continued)

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|---|------------------------|---|-----------------|--|----------------------------|
| 18. STA GROUP (1993) PUBLIC COMPANY LIMITED | Phor. 14/2543 | January 16,2001 | 1 | | 855.36 |
| 19. STA MDF COMPANY LIMITED | Phor. 16/2543 | January 16,2001 | 1 | | 1,249.91 |
| 20. STA PARTICLE PRODUCTS COMPANY LIMITED | Phor. 17/2543 | January 16,2001 | 1 | | 754.06 |
| 21. HIGH PRESSURE STEEL PIPE INDUSTRY COMPANY LIMITED | Phor. 15/2542 | January 24,2001 | 1 | | 1,106.51 |
| 22. BURAPA STEEL INDUSTRIES COMPANY LIMITED | 386/2543 | January 24,2001 | 1 | | 828.20 |
| 23. I.S.A COMPANY LIMITED | 384/2543 | January 25,2001 | 1 | | 309.09 |
| 24. THAIWAH PUBLIC COMPANY LIMITED | 624/2543 | February 14,2001 | 1 | | 5,265.79 |
| 25. ALPHA PROCESSING COMPANY LIMITED | 473/2543 | February 14,2001 | 1 | | 801.00 |
| 26. NARONG CANNING COMPANY LIMITED | 385/2543 | February 15,2001 | 1 | | 669.58 |
| 27. STAR BLOCK GROUP PUBLIC COMPANY LIMITED | 574/2543 | February 16,2001 | 0 | Building material trader | 1,471.67 |
| 28. ALPHATEX INDUSTRIES COMPANY LIMITED | 468/2543 | February 23,2001 | 1 | | 988.56 |
| 29. ALPHA SPINNING COMPANY LIMITED | 467/2543 | February 23,2001 | 1 | | 1,378.10 |
| 30. UBOL SAHATHAM TRANSPORT (1983) COMPANY LIMITED | 541/2543 | February 23,2001 | 0 | Construction and transportation | 573.86 |
| 31. THAI PACKAGING INDUSTRY PUBLIC COMPANY LIMITED | 470/2543 | March 6,2001 | 1 | | 1,286.61 |
| 32. PETCHPRAYA GENERAL HOSPITAL COMPANY LIMITED | 493/2543 | March 12,2001 | 0 | General hospital | 291.71 |
| 33. TADA COMPANY LIMITED | 517/2543 | March 19,2001 | 0 | Construction of power station | 979.89 |
| 34. MATCON TRADING COMPANY LIMITED | 522/2543 | March 27,2001 | 0 | Construction | 23.56 |
| 35. HYDROTECH COMPANY LIMITED | 654/2543 | March 30,2001 | 0 | Environmental engineering | 59.86 |
| 36. DULWICH INTERNATIONAL COMPANY LIMITED | 626/2543 | April 4,2001 | 0 | Educational institution | 560.92 |
| 37. PETCHBURI TERMINAL COMPANY LIMITED | 584/2543 | April 9,2001 | 0 | Oil containers and harbour rental | 1,467.87 |
| 38. SATHORNTHANI COMPANY LIMITED | 637/2543 | April 18,2001 | 0 | Developing the real estate for sales and rentals | 699.42 |

List of sample companies (continued)

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|--|------------------------|---|-----------------|---|----------------------------|
| 39. NARONG SEAFOOD COMPANY LIMITED | 516/2543 | April 24,2001 | 1 | | 523.96 |
| 40. SIAMUNISOUL COMPANY LIMITED | 675/2543 | April 27,2001 | 1 | | 463.93 |
| 41. SAHAKARN WISAVAKORN COMPANY LIMITED | 639/2543 | May 2,2001 | 0 | Engineering and building the basic public utilities | 129.23 |
| 42. SUNTECH GROUP PUBLIC COMPANY LIMITED | 636/2543 | May 3,2001 | 1 | | 1,132.20 |
| 43. BIP ENGINEERING AND CONSTRUCTION COMPANY LIMITED | 678/2543 | May 9,2001 | 0 | General building engineering | 66.85 |
| 44. THAMMARIN COMPANY LIMITED | 656/2543 | May 11,2001 | 0 | Hotel | 685.64 |
| 45. EMC PUBLIC COMPANY LIMITED | 638/2543 | May 15,2001 | 0 | Providing the service for long term contracts | 375.65 |
| 46. SARIN PROPERTY COMPANY LIMITED | 729/2543 | May 15,2001 | 0 | Real estate development | 1,667.03 |
| 47. UNI CORD PUBLIC COMPANY LIMITED | 576/2543 | May 21,2001 | 1 | | 1,685.89 |
| 48. N.T.S. STEELGROUP PUBLIC COMPANY LIMITED | 719/2543 | June 6,2001 | 1 | | 9,216 |
| 49. EVERGREEN INDUSTRY COMPANY LIMITED | 813/2543 | June 21,2001 | 1 | | 509.43 |
| 50. TAI YO TECH COMPANY LIMITED | 759/2543 | July 2,2001 | 1 | | 300.00 |
| 51. SRIUTONG COMPANY LIMITED | 828/2543 | July 24,2001 | 0 | Building construction service | 126.99 |
| 52. SIAM PAPER COMPANY LIMITED | 893/2543 | August 16,2001 | 1 | | 7,601 |
| 53. TRAD PORNPIMON FISHSAUCE 1991 COMPANY LIMITED | 864/2543 | August 23,2001 | 1 | | 1,573.83 |
| 54. HIGH PRESSURE PIPE FITTING COMPANY LIMITED | 469/2543 | August 28,2001 | 1 | | 233.45 |
| 55. MODERN HOME DEVELOPMENT PUBLIC COMPANY LIMITED | 705/2543 | September 27,2001 | 0 | Real estate development | 4,209.57 |
| 56. PROPERTY PERFECT PUBLIC COMPANY LIMITED | 106/2544 | October 2,2001 | 0 | Real estate development | 5,927.28 |
| 57. LANLUANG CONSTRUCTION COMPANY LIMITED | 31/2544 | October 9,2001 | 0 | Construction service | 455.73 |
| 58. THAMMATANI COMPANY LIMITED | 32/2544 | October 18,2001 | 0 | Real estate development | 1,003 |

List of sample companies (continued)

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|---|------------------------|---|-----------------|--|----------------------------|
| 59. RAIMON LAND PUBLIC COMPANY LIMITED | 827/2543 | November 8,2001 | 0 | Real estate development | 1,011.13 |
| 60. GUN KUL ENGINEERING COMPANY LIMITED | 325/2544 | November 15,2001 | 1 | | 351.53 |
| 61. YOONSILA CHAINGMAI COMPANY LIMITED | 116/2544 | December 7,2001 | 1 | | 753.65 |
| 62. THAI BICYCLE INDUSTRY COMPANY LIMITED | 133/2544 | December 11,2001 | 1 | | 371.67 |
| 63. CENTURY HOTEL COMPANY LIMITED | 1049/2543 | December 25,2001 | 0 | Hotel | 1,147.40 |
| 64. ONE-HOLDING PUBLIC COMPANY LIMITED | 406/2544 | December 27,2001 | 0 | Investment industry | 894.81 |
| 65. SG STAR PROPERTY COMPANY LIMITED | 278/2544 | December 28,2001 | 0 | Real estate development | 300.19 |
| 66. MEDIA OF MEDIAS PUBLIC COMPANY LIMITED | 912/2543 | January 15,2002 | 0 | Production of any mass media | 607.50 |
| 67. EASTERN PRINTING PUBLIC COMPANY LIMITED | 519/2544 | January 17,2002 | 0 | Printing service | 1,017.90 |
| 68. ADVANCE DICASTING SERVICE COMPANY LIMITED | 153/2544 | January 29,2002 | 1 | | 83.15 |
| 69. SHINAWATRA THAI COMPANY LIMITED | 568/2544 | January 29,2002 | 1 | | 962.00 |
| 70. THAI HEAT EXCHANGE PUBLIC COMPANY LIMITED | 34/2544 | January 30,2002 | 1 | | 529.39 |
| 71. OLYMPIA THAI COMPANY LIMITED | 389/2544 | January 31,2002 | 0 | Selling and service | 975.47 |
| 72. SINN BUALUANG CAPITAL COMPANY LIMITED | 637/2544 | February 27,2002 | 0 | Financial service | 34.13 |
| 73. SINN BUALUANG LEASING COMPANY LIMITED | 667/2544 | February 28,2002 | 0 | Property leasing | 365.20 |
| 74. C. M. I. C. DEVELOPMENT COMPANY LIMITED | 290/2544 | March 8,2002 | 0 | Office space leasing | 1,354.36 |
| 75. THE CENTURY COUNTRY CLUB COMPANY LIMITED | 638/2544 | March 20,2002 | 0 | Real estate development | 975.00 |
| 76. THAI BAUER COMPANY LIMITED | 27/2543 | March 20,2002 | 0 | Construction | 1,778.97 |
| 77. RAK PRODUCTION COMPANY LIMITED | 207/2544 | March 21,2002 | 1 | | 527.43 |
| 78. POWER - P COMPANY LIMITED | 518/2544 | March 29,2002 | 1 | | 349.27 |
| 79. ASIA IRON MANUFACTURING COMPANY LIMITED | 700/2544 | April 10,2002 | 1 | | 164.62 |

List of sample companies (continued)

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|--|------------------------|---|-----------------|---|----------------------------|
| 80. THAI VINITEC COMPANY LIMITED | 636/2544 | April 25,2002 | 1 | | 738.81 |
| 81. BANGKOK SHUTTERS COMPANY LIMITED | 665/2544 | April 26,2002 | 1 | | 111.82 |
| 82. H. C. CITY COMPANY LIMITED | 837/2544 | May 2,2002 | 0 | Real estate development | 559.56 |
| 83. INTER FAREAST ENGINEERING COMPANY LIMITED | 346/2544 | May 3,2002 | 0 | Distributing representative and rental of office facilities | 857.58 |
| 84. BIG DEVELOPMENT COMPANY LIMITED | 658/2543 | May 14,2002 | 0 | Real estate development | 1,340.05 |
| 85. TWY PROPERTY COMPANY LIMITED | 629/2544 | May 16,2002 | | Hotel | 2,081.80 |
| 86. COUNTRY (THAILAND) PUBLIC COMPANY LIMITED | 556/2544 | May 20,2002 | 0 | Real estate development | 2,089.64 |
| 87. B. N. S. STEELGROUP COMPANY LIMITED | 668/2544 | May 21,2002 | 1 | | 2,844.54 |
| 88. BANGNA MACHINERY COMPANY LIMITED | 745/2544 | May 24,2002 | 1 | | 172.67 |
| 89. P.E.P. FERTILIZER COMPANY LIMITED | 478/2544 | May 29,2002 | 0 | Buying and selling fertilizer and chemical products | 51.09 |
| 90. CHONBURI - INTER COMPANY LIMITED | 1023/2544 | May 30,2002 | 0 | Hotel | 581.95 |
| 91. NARONG INDUSTRIAL PUBLIC COMPANY LIMITED | 870/2544 | June 3,2002 | 1 | | 169.95 |
| 92. ADVANCE PAINT AND CHEMICAL (THAILAND) PUBLIC COMPANY LIMITED | 1025/2544 | July 5,2002 | 1 | | 92.56 |
| 93. A.C.C. REAL ESTATE COMPANY LIMITED | 1047/2544 | July 15,2002 | 0 | Real estate development | 490.65 |
| 94. TREATHABOON COMPANY LIMITED | 445/2544 | July 17,2002 | 1 | | 1,316.17 |
| 95. PREMIER ENTERPRISE PUBLIC COMPANY LIMITED | 434/2543 | August 2,2002 | 0 | Cars sales and rental service | 2,042.70 |
| 96. GREEN UNION COMPANY LIMITED | 108/2544 | August 9,2002 | 0 | Real estate development | 205.29 |
| 97. T.G. ADVANCE CONCRETE COMPANY LIMITED | 1303/2544 | August 16,2002 | 1 | | 18.68 |
| 98. MOOBAN SERI COMPANY LIMITED | 1214/2544 | August 19,2002 | 0 | Real estate development | 1,134.46 |
| 99. RAMA 3 LAND COMPANY LIMITED | 1307/2544 | August 23,2002 | 0 | Real estate development | 6,153.92 |

List of sample companies (continued)

| <u>COMPANY NAME</u> | <u>Red Case Number</u> | <u>Date for accepting the plan by the court</u> | <u>Industry</u> | <u>Details for non-manufacturing company</u> | <u>Size (million Baht)</u> |
|--|------------------------|---|-----------------|--|----------------------------|
| 100. SAHAVIRIYA CITY PUBLIC COMPANY LIMITED | 992/2544 | August 30,2002 | 0 | Real estate development | 7,754.37 |
| 101. THAIBENGUN COMPANY LIMITED | 4/2545 | September 10,2002 | 1 | | 585.96 |
| 102. MITSU CHAROENSRI COMPANY LIMITED | 1141/2544 | September 16,2002 | 0 | Car selling business | 236.34 |
| 103. SAKOL CHAROENSRI COMPANY LIMITED | 1135/2544 | September 17,2002 | 0 | Car selling business | 730.19 |
| 104. CHAROENSRI MOTOR COMPANY LIMITED | 1134/2544 | 17,2002 | 0 | Car selling business | 1,086.69 |
| 105. UDORN CHAROENSRI (1968) COMPANY LIMITED | 1132/2544 | September 18,2002 | 0 | Car selling business | 4,169.41 |
| 106. PAMOLA COMPANY LIMITED | 1133/2544 | September 24,2002 | 1 | | 601.78 |
| 107. BANGKOK RUBBER PUBLIC COMPANY LIMITED | 1313/2544 | November 21,2002 | 1 | | 7,033.93 |
| 108. T.C.K. FURNITURE COMPANY LIMITED | 303/2545 | December 3,2002 | 1 | | 1,275.35 |
| 109. DELTA ENGINEERING CONSTRUCTION PUBLIC COMPANY LIMITED | 1190/2544 | December 4,2002 | 0 | Building service | 467.93 |
| 110. NAKORNTHAI STRIP MILL PUBLIC COMPANY LIMITED | Phor. 24/2543 | December 11,2002 | 1 | | 27,233.35 |
| 111. SRIJULSUP COMPANY LIMITED | 194/2544 | December 25,2002 | 0 | Lease of unmovable property | 949.13 |