

THE RELATIONSHIP BETWEEN BUSINESS FAILURES AND DECISION MAKING BY MANAGER: EMPIRICAL ANALYSIS

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INTRODUCTION

Managers in Japan who had experienced a sustained uprising economy since the end of the previous war, expended a colossal amount of capital in overly ambitious business expansion and/or excessive investments during the few years following 1989, called the bubble economy, and as a consequence drove their businesses into dire situations. Apparently, this was a result stemming from a less-than-adequate recognition and measurement of management risks faced by businesses. This paper aims at once to verify, through an empirical study of corporations declared bankrupt over the eleven years from 1986 to 1996 encompassing the bubble economy in between, that the erroneous decisions made by managers at respective corporations led to business failures, and to clarify the causative relationship between business failures and risks associated with decision-making by manager.

RISKS OF BUSINESS MANAGEMENT

Managers are incessantly required to make decision-making in every aspect of business management. Among others, in decision-making related to strategic business management, decisions are made for the purpose of maximizing business profits and fostering the further growth of businesses. In doing so, managers will predetermine the scope and size of business expansion and project the return to be derived. As a result, investments are made within the scope in proportion to the projected size and return. However, as shown in Fig.1, this process is found to form a circular loop lacking a starting point. Unless the size of expansion is determined, the return to be derived could not be projected, while it is impossible to determine the legitimacy of making investments without making projections on returns.

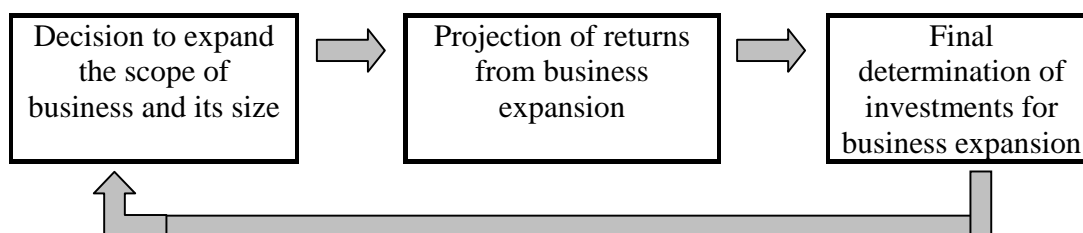


FIGURE 1. THE LOOP STRUCTURE OF INVESTMENT DECISION-MAKING IN

This looped process, returns are projected based on the hypothesis that the events which have occurred in the past will recur in future in a similar fashion--usually only gains are projected with respect to returns, and based on these uncertain expected returns the amount of investment is finally determined. Accordingly, discrepancies will naturally result between projections and returns.

1. EMPIRICAL ANALYSIS

ANALYTICAL DATA AND METHODOLOGY

In the analysis in this paper, as for bankrupt companies, financial date of 898 companies which went bankrupt in Japan with a total amount of debt equal to or more than ¥10 million from January 1986 to December 1996 were employed. Also as for going concerns employed as samples, 300 companies were screened out of the 107,034 companies with a stated capital of ¥30 million or more. In screening, the systematic sampling method was employed with all companies arranged in accordance with the size of stated capitals and by sampling them at equal intervals.

In an empirical study using financial ratios, statistical methods such as Stepwise have been widely employed. In contrast, in this paper data mining methods utilizing artificial intelligence which is recently receiving attention are employed in addition to statistical methods which have been generally employed so that corporate behavior can be analyzed from multiple angles. The analytical methods listed in Table 2 were employed.

TABLE 2 ANALYTICAL METHODS EMPLOYED IN THIS PAPER

Analytical method	Remarks
C4.5 Program	The most common method among artificial intelligence-related analytical methods
SIBILE ¹	Analytical method utilizing a gene algorithm
Classification and Regression Trees	Analytical method related to artificial intelligence called the tree diagram method
Stepwise	Conventional statistical method which has been widely used
Logit Analysis	Conventional statistical method which has been widely used

SELECTED VARIABLES

As a result of empirical analysis, the financial ratios which exhibited conspicuously different movements between businesses which went bankrupt, and going concerns were almost identical, regardless of whether the methods associated with artificial intelligence or conventional statistical methods were employed. Table 3 is showing the selected variables.

TABLE 3 MEAN VALUE AND T-VALUE OF SELECTED VARIABLEES

Name of Ratio	Mean of B group	Mean of Non-B group	Trend of Bankrupt	Pr>F	Assumptio n of even variance	T value	Prob > T
Retained earnings to total assets ratio	0.76	10.72	Decrease	0.0001	Unequal	-9.6619	0.0001
Average interest rate on borrowings	6.72	4.43	Increase	0.0001	Unequal	13.9753	0.0001
Growth rate of total assets	7.67	1.45	Increase	0.0001	Unequal	4.8874	0.0001
Turnover period of accounts payable, trade	2.80	1.89	longer	0.0001	Equal	8.6429	0.0000

THE TURNING POINT LEADING TO BUSINESS FAILURES

FINANCIAL RATIOS AND MANAGER'S DECISION-MAKING

Out of the four financial ratios thus identified, “retained earnings/total assets ratio” and “growth rate of total assets” are the ratios which at once reflect the decision-making by business managers and behavior of business management, and this point should be highlighted. Some managers would decide to pay out all the profits obtained in one term as dividends for the term, while other managers would decide to curtail dividends to a low level and retain profits for future business. Dividend policies as such is closely related to the threat posed by shareholders, but in the case of Japanese companies, shareholders’ monitoring function of business managers is weak, and in most cases, dividend policies are in reality determined by manager themselves.

Also, “growth rate of total assets” is a ratio, which shows short-term fund raising by businesses. The timing, size (amount) and method of fund raising by businesses depend on decision-making by managers, and its results significantly influence the future course of businesses. In particular, in fund raising related to investment strategies, in cases where excessive investment plans were formulated based on erroneous return projections, procured funds will eventually put pressure on business management and drive businesses into bankruptcies.

ERRONEOUS DECISION MAKING BY MANAGERS

From among the listed companies which went bankrupt from January 1986 to December 1996, the financial data of such companies up to the ten financial terms preceding bankruptcies in retrospect were gathered, and the corporate behavior exhibited by those companies was observed in terms of changes in “growth rate of total assets” and “retained earnings/total assets ratio.”

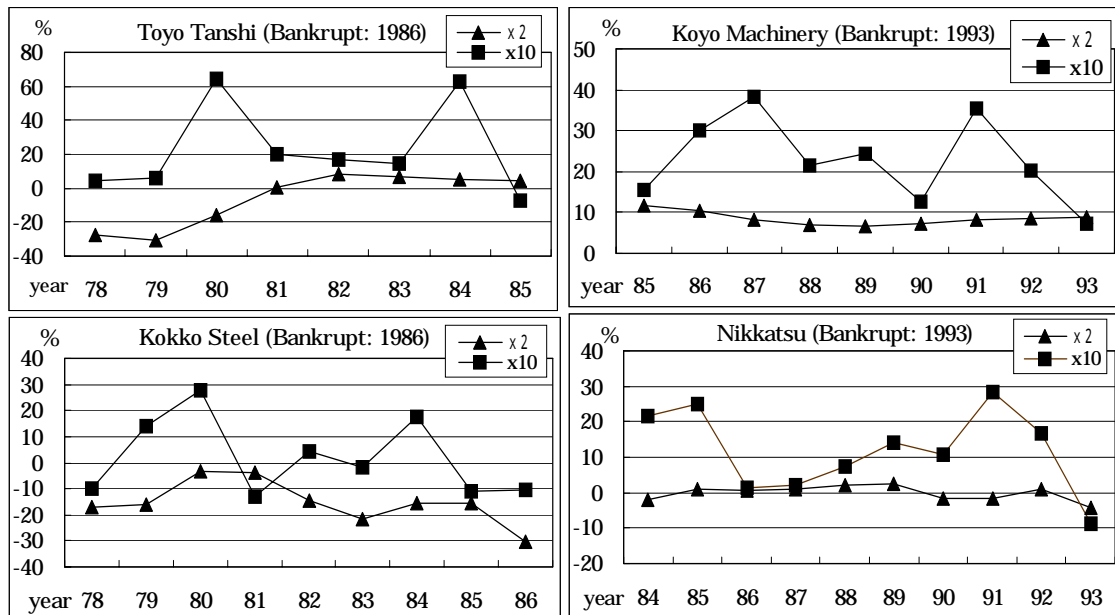


FIGURE 2 TRENDS OF “RETAINED EARNINGS/TOTAL ASSETS RATIO=X2” AND “GROWTH RATE OF TOTAL ASSETS=X10” IN BANKRUPT COMPANIES

Most of the businesses observed here conducted a sizable fund raising during seven or eight terms prior to bankruptcies and the magnitude of such fund raising reached as far as more than 60% of total assets in some companies. In addition, there are signs that each business made fund raising again between the three terms prior to bankruptcies and the term immediately prior to bankruptcies. If you compare the corporate behavior of bankrupt companies and going concerns, there is a distinct difference in the level of “retained earnings/total assets ratio” and the manner of fund raising.

In going concerns, large amounts of fund raising were conducted at the time of the bubble economy in 1990, but the ratio did not barely exceed the retained earnings ratio, staying at the level above 15% even at the peak level. Corporate behavior of bankrupt businesses and going concerns is distinctively different in that bankrupt businesses repeatedly conducted overly large fund raising, while non-bankrupt businesses only temporarily conducted fund raising in accordance with changes in economic environments.

CONCLUSION

It has been pointed in a number of papers that decision-making by managers is deeply related to business failures. However, there is hardly any research in which the relationship between business failures and the risks of manager’s decision-making was verified. As a result of analysis in this paper, it became clear that decision-making concerning fund raising by managers (or fund raising for investments) particularly create grave hazards to businesses. Businesses follow the path toward prosperity or decline based on decision-making risks of managers. Accordingly, only under the managers who can flexibly adapt to changing environments, rationally project the future and make right decision making, businesses can expect to survive.

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