



Financial policies on firm performance: The U.S. insurance industry before and after the global financial crisis



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ABSTRACT

In this study, the advanced panel threshold regression model was used to test whether a marginal threshold value representing optimal financial decisions exists respective to the holding ratio of free cash flow, the debt ratio, and the dividend payout ratio determined by the U.S. life and property–casualty insurance industry. The results indicated that an optimal financial policy exists. The findings suggest that the U.S. insurance industry can appropriately increase debt raise based on the optimal ratio, increasing dividend issuance to adjust the free cash flow restricted to the optimal holding ratio, and thus, enhance firm performance and solve financial problems.

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1. Introduction

In 2007, a financial crisis severely affected the global economy. Financial upheaval within the U.S. insurance industry attracted international attention and caused mass panic, resulting in an overall lack of confidence in company performance by U.S. citizens and decreased financial strength ratings given by numerous rating agencies to U.S. insurance enterprises. The financial crisis indicated that the financial policies of U.S. insurance industries that affected firm performance caused long-term problems.

This study was inspired by the status of corporate financial matters that attracted international attention, and investigated the relationship between financial policy and firm performance in the U.S. insurance industry. The financial ratio in the corporate finance academic, which is most frequently used to discuss corporate capital structure, includes the holding ratio of free cash flow, the debt ratio, and the dividend payout ratio. In addition, whether optimal financial decisions can maximize firm performance was determined.

In this study, the advanced panel threshold regression model developed by Hansen (1999) was applied to test whether the marginal threshold value representing optimal financial decisions exists respective to the holding ratio of free cash flow, the debt ratio, and the dividend payout ratio determined by the financial policy in the U.S. life and property–casualty insurance industry. The influence that financial policy exerts on the firm performance of enterprises in the U.S. insurance industry was investigated in three parts: In the first part, the influence that free cash flow exerts on firm performance was analyzed. Jensen (1986) proposed the free cash flow hypothesis to define free cash flow as cash

exceeding the amount required to fund positive net present value projects. In addition, he claimed that the existence of free cash flow causes managers to use capital inefficiently for unprofitable investment projects; this self-seeking behavior by managers to increase business operation scope, corporate scale, and control of the enterprise eventually leads to an escalated agency problem of inconsistent interest between stockholders and managers, and directly affects firm performance. Numerous researchers, such as Byrd (1988), Stulz (1990), Mann and Sicherman (1991), Brush et al. (2000), Shin and Kim (2002), Titman et al. (2004), and Luo and Hachiya (2005) have all attested that agency cost caused by free cash flow worsens firm performance.

Wells et al. (1995) proposed that, unlike other industries, the insurance industry is controlled by the government and its investment is strictly restricted; therefore, the existence of free cash flow is unavoidable. Moreover, many researchers have proposed that free cash flow exacerbates the agency problem and affects firm performance. The public is interested in the existence of a nearly bearable optimal free cash flow holding ratio; when the holding ratio of free cash flow is lower than this optimal ratio, the agency problem can be controlled and businesses can operate more efficiently (Lai and Limpaphayom, 2003). The panel threshold regression model adopted in the current study facilitated the search for an optimal holding ratio.

The second part of this paper discusses the empirical analysis performed to determine the impact of leverage on firm performance. Myers (1977) proposed a trade-off theory, claiming that when the marginal benefit of debt equals marginal cost, an optimal debt ratio can maximize firm value. However, Myers (1984) and Myers and Majluf (1984) also proposed a pecking order theory, indicating that company financing policy follows an existing preferential ranking of internal funds, debt, and equity. In other words, an optimal debt ratio and optimal capital structure do not exist. Studies regarding debt and firm value,

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such as those by Frank and Goyal (2004) and Flannery and Rangan (2006), have provided evidence for the trade-off theory. However, the views presented in other studies, such as those by Baker and Wurgler (2002) and Welch (2004), support the pecking order theory.

Unlike research performed using conventional linear models, this study adopted a panel threshold regression model that can be used to test whether the debt ratio affects firm value, and determine a correct threshold optimal debt ratio, thereby confirming the existence of optimal capital structure; however, if optimal capital structure exists, the difference in the optimal debt ratio between the U.S. life insurance and property-casualty insurance industries must be compared.

The third part of this paper examines the impact that dividend policy exerts on firm performance. Miller and Modigliani (1961) used theoretical mathematics to prove that, in an ideal world (the hypothetical premise of perfect capital markets and rational behavior), dividend policy is irrelevant to firm value. In other words, firm value is not affected by dividend policy; hence an optimal dividend policy does not exist. However, the capital market in the real world is not ideal. Therefore, Miller and Modigliani (1961) proposed the dividend-irrelevance proposition, causing debate among researchers regarding the correlation between dividend policy and firm performance. The literature supporting the dividend-irrelevance proposition includes studies by Higgins (1972), Fama (1974), Smirlock and Marshall (1983), and Grullon et al. (2003). By contrast, researchers who have proposed a correlation between dividend policy and firm performance include Dhrymes and Kurz (1967), McCabe (1979), Peterson and Benesh (1983), Jensen et al. (1992), Agrawal and Jayaraman (1994), and Fama and French (1998, 2001).

2. Data

To determine whether the financial policies of the U.S. insurance industry, including life insurance and property-casualty insurance industries, affect firm performance, and whether the threshold effect of optimal financial policy exists, we adopted the corporate finance data from the Compustat database.

2.1. Sample description

Compustat adheres to the classification standards of the GICS subindustries, classifying corporate data according to industries, including life and property-casualty insurance. Based on this classification, we acquired annual data of the financial statements from 25 U.S. life insurance enterprises and 53 property-casualty insurance enterprises for 18 years of continuous operation from 1990 to 2007.

Ever since the outbreak of the global financial crisis in 2007, life insurance enterprises and property-casualty insurance enterprises in the USA have gone bankrupt after 2008, in other words, many insurance enterprises have stopped their businesses, even some enterprises continue their business operation, part of them have to receive capital injection from the government due to their bankruptcy crisis, some enterprises may even have to be merged with other enterprises, therefore, considering the continuity of the sampling period and what displayed by the sampled data was the original financial characteristics of the company, the sampling period of this study thus ends until 2007, meanwhile, accompanied with regression model that uses applicable panel data, it not only helps people to understand the long-term financial characteristics of U.S. life insurance enterprises and property-casualty insurance enterprises before the outbreak of the financial crisis, but also helps the comparison and analysis of the short-term impact effect right at the year after the outbreak of the financial crisis.

2.2. Variables

Tobin's Q and return on equity (ROE), which are the proxy variables most frequently used to represent firm performance in research

pertaining to accounting, management, and finance, were used to evaluate firm performance.

As expressed in Eq. (1), Tobin's Q is defined as the ratio of market value of a firm divided by the book value of its assets. For firm market value, we followed the method used by Chung and Pruitt (1994), using the sum of the market value of common equity, the book value of preferred stock, the book value of long-term debt, and net current liabilities. ROE is an item commonly disclosed in corporate financial statements, and can therefore be acquired from Compustat data.

$$\text{Tobin's Q} = \frac{\text{Firm market value}}{\text{Book value of assets}} \quad (1)$$

where

Firm market value = market value of common equity + book value of preferred stock + book value of long term debt + net current liabilities.

According to relevant research, to inspect the influence of financial policy on firm performance, the holding ratio of free cash flow, debt ratio, and dividend payout ratio must be used as the threshold explanatory variables. Based on the studies performed by Lehn and Poulsen (1989), Lang et al. (1991) and Wells et al. (1995), we adopted undistributed cash flow as the proxy variable of free cash flow (FCF) to represent the total amount of discretionary cash flow available to management, including all cash inflows and obligatory cash outflows for a year.

$$\text{FCF} = \text{INC} - \text{TAX} - \text{INTEXP} - \text{PFDDIV} - \text{COMDIV} \quad (2)$$

where

INC operating income before depreciation;
 TAX total income tax minus the change in deferred taxes from the previous year to the current year;
 INTEXP gross interest expense on short and long term debt;
 PFDDIV total amount of preferred dividend required for cumulative preferred stock and dividends paid on noncumulative preferred stock; and
 COMDIV total dollar amount of dividends declared on common stock.

Similar to the study by Lehn and Poulsen (1989), FCF is expressed as a percentage of equity (EQ), and the ratio is defined as FCF/EQ. The ratio of total liabilities to total assets (debt ratio) was the second threshold variable that we used to investigate the asymmetric threshold effect of leverage on firm value. Moreover, to verify the existence of an optimal dividend policy, based on the studies by Rozeff (1982), Dempsey and Laber (1992), and Agrawal and Jayaraman (1994), we adopted the payout ratio, which is the ratio of dividends per share to earnings per share, as the proxy variable of dividend policy, which is the third threshold variable used for empirical analysis.

In addition to threshold explanatory variables used in the panel threshold regression model in this study, control variables were employed, divided into four parts. Because previous research has indicated that general firm-specific characteristics can potentially explain firm performance, the control variables used in the first part included the natural log of the total asset book value (Size), applied to capture intangibles related to firm size (Lai and Limpaphayom, 2003; Mak and Kusnadi, 2005; Mehran, 1995) and the general firm-specific variable used to explain firm performance, the ratio of annual change in capital spending (Capital spending); Luo and Hachiya (2005) assumed that the more an enterprise spends in capital, the more investment opportunities exist for the enterprise.

The control variables used in the second part were variables indicating the characteristics of the insurance industry, including premium growth rates (Premium growth) and the net gain to total income (Risk-1) and investment yield (Risk-2) of the Insurance Regulatory Information System (IRIS), developed by the National Association of Insurance Commissioners (NAIC). In a nonfinancial industry, sales growth is essential to explain firm

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