

Free Cash Flow in the Life Insurance Industry

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ABSTRACT

Jensen (1986) argues that the existence of free cash flow provides managers with an opportunity to waste cash on unprofitable investments. These unprofitable investments represent an incremental cost of the owner-manager conflict. Mayers and Smith (1981) predict that the costs of controlling the owner-manager conflict are higher for mutual insurers than for stock insurers because fewer monitoring and control mechanisms exist for the mutual organization. We examine the relation between organizational form and free cash flow, and find that mutual insurers do have a greater level of free cash flow than stock insurers. Other firm-specific variables, such as size and leverage, also affect the level of free cash flow for the firms in our data set.

Introduction

Jensen (1986) defines free cash flow as cash in excess of that required to fund all positive net present value projects. Free cash flow tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal remuneration, by investing free resources in projects that have zero or negative net present values. These unprofitable investments are an aspect of the basic conflict of interest between owners and managers. Jensen argues that some industries are particularly susceptible to the generation of free cash flow, and we posit that life insurers constitute a low-growth industry that is likely to generate such excessive cash flow.

We argue that, in the life insurance industry, wasteful uses of free cash flow occur to the detriment of the firm's owners and policyholders. Managerial abuses of free cash flow are inconsistent with the goal of owner wealth maxi-

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The authors thank David Blackwell, Robert Hoyt, and three anonymous reviewers for their helpful suggestions. They also thank Elizabeth Pape of the University of Georgia for her computing assistance.

mization. Expenditures wasted by management instead could have been distributed to the owners of stock insurers as cash dividends or to the policyholders of mutual or stock firms in the form of lower premiums, higher policy dividends, or higher investment returns.¹ While regulators primarily focus on insurer solvency, they also are concerned with maintaining premium rates that are not excessive. To the extent that regulators monitor life and health insurance rates, dividends, and surrender values, free cash flow should be of concern to them.

Mayers and Smith (1981) predict more severe owner-manager conflicts in mutual insurers than in stock insurers, and we test their prediction using data from the life insurance industry. Specifically, we test for differences in free cash flow between stock and mutual insurers in the U.S. life insurance industry.² Focusing on the life insurance industry allows us to isolate firms having similar investment opportunity sets and differing organizational forms, reduce measurement error in our proxy for free cash flow because of the limited variation in accounting techniques used across the industry, and control for the confounding effects between the investment opportunity set and free cash flow that arise in cross-industry studies.

The majority of existing evidence on the free cash flow hypothesis focuses on intertemporal changes in financial structure. Jensen posits that leveraged buyout activities are one way of controlling free cash flow because the debt incurred in such transactions forces managers to disgorge excess cash. Evidence supporting the free cash flow motivation for financial restructuring has been provided by many authors, including Loh (1992), Gupta and Rosenthal (1991), Lehn and Poulsen (1989), Gibbs (1993), Griffin (1988), and Moore, Christensen, and Roenfeldt (1989).

Byrd (1988) examines the cross-sectional relation between free cash flow and ownership structure and finds some evidence that organizational forms specific to the oil industry (corporations, master limited partnerships, and royalty trusts) have different agency costs of free cash flow. Specifically, the agency costs of free cash flow are lower in royalty trusts and master limited partnerships than in corporations.

Although previous empirical work is generally consistent with the free cash flow hypothesis, the financial industry has been ignored in most studies because of its unique regulatory environment. The insurance industry, in particular, has distinctly different organizational forms not found in other industries,

¹ Higher-than-expected investment returns can be transferred directly to cash values for holders of universal and variable life policies, as well as variable annuities.

² In addition to mutual insurers, fraternal insurers are also characterized by policyholder ownership; however, our data set does not include fraternal insurers. Also, another type of insurer—Lloyd's associations—are not predominant writers of life and health coverages; hence, they are excluded from the analysis.

thus providing a natural laboratory for examining cross-sectional differences in organizational form (Mayers and Smith, 1990).³

In this study, we test for differences in free cash flow between stock and mutual insurers in the U.S. life insurance industry. Our purpose is to examine whether organizational form affects managerial behavior with respect to the holding of free cash flow. Our results also offer insight into whether contractual limitations of managerial discretion fully compensate for the losses of debt market bonding and the market for corporate control.

Evidence of differences in free cash flow between stock and mutual insurers should be of interest to investors, policyholders, and regulators. If one organizational form provides fewer managerial constraints to abusing free cash flow than another, then regulators should potentially incorporate information about the cash distribution policies of firms having that corporate structure in their analysis of insurers.⁴ Policyholders and investors should be interested in knowing which type of organizational form better aligns managerial incentives with their interests.

In the following section we develop our hypothesis. The subsequent section describes our model, data set, and research method. Next, we present our results, and follow with a brief summary and conclusions.

Background and Hypothesis Development

Mayers and Smith (1981) assert that the severity of owner-manager conflicts will be greater in mutual insurers than in stock insurers, which leads us to expect a difference in free cash flow between the two organizational forms. In this section, we explain the agency problems associated with stock and mutual insurers and develop our predictions for the life insurance industry.

Agency Theory and Organizational Form

Agency theory, as synthesized by Jensen and Meckling (1976) from earlier works of Coase (1937, 1960) and others, addresses incentive conflicts between contracting parties in the firm. Incentive conflicts result in a costly contracting process among the various claimholders, and the resulting costs are known as agency costs. Jensen and Meckling identify two primary types of agency costs: agency costs of equity and agency costs of debt or fixed claims.

Agency costs of equity exist between the owners and managers of the firm. When a manager is the sole owner of the firm, he or she holds a 100 percent interest in the success of the firm, and therefore will seek to maximize his or her utility by choosing the level of both firm value and nonpecuniary benefits

³ Jensen's theory predicts that the free cash flow problem will differ across industries because of differences in investment opportunity sets. Only Byrd (1988) and Griffin (1988) confine their free cash flow studies to a single industry (oil).

⁴ A detailed description of regulatory behavior from a general equilibrium perspective is beyond the scope of this article; however, we assert that information regarding managerial incentives is useful to regulators in their decision-making processes.

that maximizes his or her personal utility. When outside equity is issued, partial ownership results in the manager's consumption of nonpecuniary benefits beyond those consumed by the sole owner. This phenomenon occurs because the sole owner of the firm bears the full cost of the reduction in firm value resulting from perquisite consumption, while the partial owner bears only a portion of the cost.

Agency costs of fixed claims exist between the owners and the fixed claimholders of a firm. The policyholders of an insurer are the primary fixed claimholders in that their claims have a specified value and they do not share in the profits of the company.⁵ The owners of the firm have an incentive to expropriate wealth from the policyholders in order to increase the value of their claims at the expense of the policyholders. For example, stockholders can increase the market value of their holdings at the expense of the fixed claimholders by encouraging managers to select high-risk, high-return projects (Smith and Warner, 1979; Black and Scholes, 1973; Merton, 1974). In the insurance industry, the mutual organization merges the interests of policyholders and owners, thereby reducing the agency costs of fixed claims.

Agency Costs of Equity and Insurer Structure

Mayers and Smith (1981) assert that the agency costs of equity will be higher in mutual companies than in stock companies. While agency costs of fixed claims are controlled by forming a mutual organization, the result is offset by less control over the owner-manager conflict. Specifically, perquisite consumption and investment problems are exacerbated in the mutual company because mutual managers cannot be significant owners of the firm, and policyholder-owners encounter great difficulty and considerable expense if they attempt to remove unsatisfactory management. If stock insurer management imposes too many costs on the owners, one or more owners can purchase control of the firm, replace management, and capture the resulting gain from the cost reduction.

In contrast, policyholder-owners of a mutual insurer must engage in a costly proxy fight to remove unsatisfactory management, yet will realize only a pro rata share of any resulting gains. Furthermore, the names of policyholders are deemed by the courts to be a proprietary asset of the insurer and thus can be withheld from any dissident group. Consequently, proxy fights are virtually

⁵ The agency costs of fixed claims are commonly referred to in the literature as agency costs of debt, as these costs are normally a result of the owner-debtholder conflict in noninsurance firms. One way that fixed claims of policyholders differ from those of bondholders is the provision of guarantees from state guaranty funds. These funds can reduce somewhat policyholders' incentives to monitor managers' activities.

Even though some of the policyholder claims may be variable in nature (e.g., variable and variable universal life), virtually all life insurance policies have a minimum guaranteed fixed claim amount. Furthermore, policies having fixed claims represent the majority of total insurer claims. For instance, fixed claim policies account for approximately 70 percent of individual death benefits and virtually all group death benefits purchased from life insurers in 1989.

never observed in mutuals. Because the control devices for management removal are so much less effective in the mutual insurer, managerial entrenchment results. Mutual insurers also face more limited alternatives in structuring compensation packages to motivate managers to maximize firm value.⁶ Finally, mutuals do not receive substantial monitoring from the capital markets. Hence, the potential for agency costs of equity is increased and managers can be expected to expropriate wealth from policyholder-owners.

Mayers and Smith (1986, 1988, 1990, 1992), utilizing data from the insurance industry, present evidence that supports the previously discussed differences in agency costs of equity, specifically with regard to mutualization, line-of-business concentration, geographic concentration, reinsurance purchases, and executive compensation. Boose (1990) finds that mutuals have significantly higher general expenses than stock insurers, which, depending on the compensation to sales representatives, is consistent with the hypothesis that managers of mutuals consume greater perquisites than stock managers.

Agency Costs of Equity and Free Cash Flow

Jensen (1986) argues that conflicts of interest between owners and managers over payout policies are particularly severe when the organization generates substantial free cash flow. The agency problem is how to motivate managers to disgorge this cash rather than invest it at or below the cost of capital or waste it on organizational inefficiencies. This incentive problem stems partly from the fact that the release of cash resources under the manager's control makes it increasingly likely that the manager will have to incur the monitoring of the capital markets when the firm requires new capital.

Jensen's theory says that free cash flow is cash *in excess of that required to fund all available positive net present value projects*. A firm with high cash flow and profitable investment opportunities does not generate free cash flow. Free cash flow exists because a firm has cash, yet nothing profitable on which to spend it. Investment opportunities should be generally comparable for firms in a single industry, especially in a highly-regulated industry such as insurance. We assert that the life insurance industry is indeed one with low growth opportunities, and is thus appropriate for testing differences in free cash flow across organizational structures.

The characterization of the life insurance industry as one with restricted growth opportunities has intuitive appeal. Mortality (and morbidity) experience is well defined actuarially, so the ability to generate abnormal earnings from underwriting operations is limited. Although life insurers also receive flows from investment operations, the informational efficiency of investment markets, coupled with taxation at both the corporate and individual level, limits owners'

⁶ In the mutual company, managers may show a "book" profit and receive a reward for this effort. However, it is not possible for the managers to be rewarded based on an objective market perception of firm value. Also, there is no way to provide mutual company managers with substantial ownership rights that would encourage them to maximize the value of the firm.

ability to receive even normal rates of return. Furthermore, regulators have incentives to constrain industry prices, and this also limits the realization of abnormal returns.

Gaver and Gaver (1993) identify subsamples of 237 growth and 237 nongrowth firms from a total sample of 1,525 companies. Of the 17 insurers in their growth and nongrowth subsamples, only one is classified as a growth firm while 16 are classified as nongrowth firms. This represents *prima facie* evidence that insurers have relatively limited growth opportunities.

Jensen's theory predicts that agency costs of equity are partly driven by free cash flow. Previous research indicates that the agency problems between owners and managers are greater in mutual organizations than in stock organizations (Mayers and Smith, 1981), which leads to the expectation that the free cash flow problem will be greater in mutual insurers than in stock insurers.⁷ The existence of fewer control and bonding mechanisms, such as the markets for corporate control and debt financing, allows mutual firm managers to hold free cash flow to a greater degree than stock firm managers.

The managerial discretion hypothesis (Mayers and Smith, 1981) applies specifically to insurers and predicts that mutuals will limit managerial discretion to control the agency costs of equity.⁸ If contracts among the various claimholders of mutual insurers successfully reduce the agency costs of equity, then we potentially could find no significant difference in free cash flow between stock and mutual insurers.⁹ While the managerial discretion hypothesis provides a plausible explanation for an insignificant difference in free cash flow between stocks and mutuals, a significant difference in free cash flow is not inconsistent with the managerial discretion hypothesis. The managerial discretion hypothesis predicts that mutuals will attempt to *control* conflicts only to the point where the benefits of additional control exceed the costs. In general, it will not be optimal to drive these costs to zero.

Participating Dividends as a Control Mechanism

Jensen argues that stockholder dividends have limited value as a control device because such implicit promises are easily broken. We posit that owners of mutual insurers are more likely to rely on participating dividend schedules to limit managerial discretion. With the participation provision, managers ex-

⁷ The discussion of agency theory presented previously may imply that the choice of organizational form is an endogenous variable, since the mutual form is thought to eliminate the agency costs of fixed claims by merging the ownership and customer functions. Following Mayers and Smith (1990), however, we assume that organizational form is determined prior to making the decisions regarding cash holdings, and thus can be treated as a predetermined variable for our statistical analysis.

⁸ For example, Mayers and Smith hypothesize that mutual insurers will specialize in lines of business characterized by reliable actuarial tables, which therefore require less managerial decision-making authority.

⁹ The contractual relation between mutual policyholders and managers can resemble, in many ways, that observed between managers and limited partners in the master limited partnerships found in other industries.

plicitly contract with policyholders so that the latter group will benefit from favorable experience with regard to ultimate mortality losses, investment returns, and underwriting profits. Although participating dividends are projected, they are not absolutely guaranteed. We posit that the dividend schedules issued by insurers are more binding than corporate shareholder dividends, they are monitored as an important component of the insurer's reputation, and, as shown by Mann and Sicherman (1991), corporate reputation can mitigate agency costs.

Most larger corporations issue dividends to shareholders. Although dividend amounts usually are announced quarterly and are not guaranteed, corporate managers tend to maintain or increase the present dividend level. Normally, dividends are reduced only when management expects continued decreases in future earnings (DeAngelo, DeAngelo, and Skinner, 1992).

In contrast with typical corporate practices regarding shareholder dividends, life insurers frequently issue a projected dividend schedule covering a long-term horizon (often 30 years) to the policyholder when the policy is purchased. The actual dividend rate is confirmed annually. These dividend schedules are highly promoted during the marketing process, with many insurers claiming they have always met their scheduled dividend payments in the past.

Regulators allow insurers to net projected dividends against gross premiums. The resulting net premiums are used when calculating cost indices that reflect the discounted, average annual price of the life insurance policy over long-term horizons, generally 10 or 20 years. Thus, projected dividend schedules are incorporated into the regulator-mandated calculations of life insurance prices in most states.

The A. M. Best Company serves as a surrogate monitor of managerial performance by publishing annual records of actual versus projected dividends for major life insurers over the past 10 and 20 years (for an example, see Gold and Mabie, 1993). Projected dividends on new policies for the ensuing 5, 10, 20, and 30 years also are published annually (see Blease, 1992, for an illustration of these surveys). This inexpensive source of monitoring further strengthens the implicit contract created by the issuance of projected, participating dividend schedules.

While mutual insurers usually issue participating life insurance policies, stock insurers mostly issue nonparticipating policies (see American Council of Life Insurance, 1992, p. 19; and Myers and Pritchett, 1983, pp. 571-573). Myers and Pritchett (1983) show that purchasing participating policies from mutual insurers generally produces higher long-run returns than purchasing nonparticipating policies and investing premium savings elsewhere. We believe that managers of mutuals use the participation provision to reduce the management-policyholder conflict inherent in the mutual organizational form. Empirical evidence provides some support for this view; McNamara and Rhee (1992) find that demutualizing significantly decreases participating policies in force.

Thus, participating policies offer one mechanism for controlling conflicts between managers and policyholders over the control of free cash flow in mutuals. Although participating dividend schedules should reduce owner-man-

ager conflicts in the mutual firm, we believe that they do not fully compensate for the losses of bonding mechanisms formulated in traditional debt markets and monitoring of managers via the market for corporate control. Consequently, we expect that free cash flow will be higher in mutuals.

In the next section, we describe our method for testing the hypothesis that mutual insurers will have greater agency costs of equity, as measured by free cash flow, than stock insurers.

Data and Method

The Conceptual Framework: Determinants of Free Cash Flow

We expect that free cash flow will be higher in mutual insurers than in stock insurers because of the different incentives of the two organizational forms. The independent variable of primary interest in this analysis is therefore organizational form, yet previous research indicates that other firm-specific characteristics also potentially explain the level of free cash flow found in life insurers. In addition to organizational form, we expect four other factors to explain the level of free cash flow for life insurers.

Firm size. Larger insurers typically have greater premium volume than smaller insurers, and thus should generate greater absolute cash flow. Mayers and Smith (1981) note that the cost of concentrating control rights, and hence limiting managerial discretion, is lower in small companies. This implies that, as size increases, the costs of concentrating control and limiting managerial discretion also increase.¹⁰ As the severity of agency problems of equity increases with size, so should the level of free cash flow.

Regulatory environment. Managerial decisions regarding the disposition of insurer cash can be affected by the unique insurance regulatory environment. Demsetz and Lehn (1985) argue that organizational form is irrelevant if the regulator is an effective monitor. Thus, one expects companies operating in more stringent regulatory environments to hold lower amounts of free cash flow than companies not subject to such strict regulation. A greater level of regulatory attention will force managers to disburse excess cash if the regulator is serving as a monitor for the company owners. However, a more stringent regulatory system also can encourage the retention of free cash flow to ensure solvency and protect policyholder interests. Hence, regulatory influence could have an either positive or negative effect on free cash flow.

Default risk. Insurance regulators are particularly concerned with insurer solvency; thus, the regulator's perception of default risk should affect the

¹⁰ Larger stock firms are followed by more analysts and have more institutional investors, so monitoring costs should be reduced, thereby lessening the positive relation between size and agency costs. Although these mechanisms should reduce monitoring costs for large stock insurers, they cannot do so for mutual insurers.

Furthermore, monitoring by large buyers of insurance annuities and guaranteed investment contracts, such as pension funds (and pension fund advisors and rating agencies), also can reduce the positive relation between size and agency costs for both stock and mutual insurers.

insurer's decisions regarding cash disbursement. Once an insurer is identified as having an abnormal level of default risk, regulators monitor that insurer more rigorously. If an insurer were flagged for regulatory attention, we would expect the insurer to avoid disbursing future cash flow to assure regulators that the firm is solvent. A positive relation between an *ex ante* measure of default risk and free cash flow is predicted.

Leverage. Jensen (1986) notes that debt should induce management to disgorge excess cash flows, and thus reduce the agency costs of free cash flow. Lehn and Poulsen (1989) and others confirm this prediction and find that debt is significant in reducing the free cash flow problem. Life insurers rarely issue traditional long-term debt; however, life insurers do incur significant leverage through their underwriting obligations.¹¹ We therefore expect leverage to be inversely related to free cash flow.

The preceding discussion suggests that a conceptual model specifying the determinants of free cash flow retained by management may be constructed as shown in equation (1).

$$FCF = f(ORG, SIZE, REG, DEF, LEVER), \quad (1)$$

where FCF = free cash flow,
 ORG = organizational form,
 SIZE = insurer size,
 REG = regulatory environment,
 DEF = default risk, and
 LEVER = firm leverage.

Data

Our sample was obtained from the National Association of Insurance Commissioners (NAIC) data tapes. The tapes contain data on the universe of U.S. life insurers and provide extensive financial information taken from the insurers' regulatory annual statements. We confine our study to a single year (1989), as opposed to using time-series data, to control for changing macroeconomic, regulatory, social, and political conditions that might affect managerial behavior.

We include all 1,295 firms appearing simultaneously in both the NAIC's historical demographics file for 1984 through 1991 and the NAIC's annual statement database for 1989. Three firms have missing or contradictory data values; thus, our sample comprises 1,292 insurers (277 mutuals, 1,015 stocks). All mutual-owned stock companies are classified as mutuals, since managerial

¹¹ We acknowledge that measurement of leverage for a mutual is problematic and conceptually unappealing. While in a stock firm the fixed claimants are typically different from the equityholders, in the mutual they are one and the same. We include leverage to maintain symmetry in the analysis of the two organizational forms and to incorporate the effect of bonding, which is an important element of free cash flow theory.

control in a mutual-owned stock company ultimately rests with the mutual parent.¹²

Measurement of Variables

Following Lehn and Poulsen (1989) and Lang, Stulz, and Walkling (1991), we use undistributed cash flow as a proxy for free cash flow.¹³ Undistributed cash flow, as defined for life insurers in equation (2), represents the total amount of discretionary cash flow available to management by including all cash inflows and all obligatory cash outflows for the year. The items deducted from total cash inflows represent payments that managers are obliged to make, which effectively reduce the amount of cash available for discretionary spending.¹⁴

$$\begin{aligned}
 \text{UCF} = & \\
 & \text{Net Operating and Investment Income} \\
 & + \text{Additional Capital Changes Paid in} \\
 & \quad - \text{Gross Interest Expenses} \\
 & \quad - \text{Income Taxes} \\
 & \quad - \text{Policyholder Dividends} \\
 & \quad - \text{Total Stockholder Dividends.}
 \end{aligned} \tag{2}$$

¹² Mayers and Smith (1990, 1994) show that mutual-owned stock companies are more like mutual companies than stock companies with respect to operations, and ultimately with respect to managerial incentives.

The Mayers and Smith (1990) study further distinguishes between single-owner, closely-held, and widely-held stock companies. Concentration of ownership changes the nature and degree of the contracting costs between the owners and the managers. Mayers and Smith note, in examining the demand for reinsurance services, that, for single-owner or closely-held stock insurers, the ownership rights in the company may represent a significant fraction of the owners' total wealth. This implies that the owners of small, closely-held insurers may desire to limit managerial discretion with respect to cash flow in order to protect the solvency of the company and the safety of the potentially large portion of their personal wealth invested in the company. Furthermore, the greater the concentration of ownership, the greater the ability of the owners to control management and thus force the disbursement of cash assets in a manner most effectively maximizing owners' utility (e.g., via cash dividends, compensation, or perquisites).

Although the NAIC data tapes encompass the universe of U.S. life insurers, they do not provide information to allow for the detection of differences in ownership concentration. Thus, we are unable to control for the influence of ownership concentration in our analysis.

¹³ Jensen defines free cash flow as cash in excess of that required to fund *all* positive net present value projects. As there is no way to actually determine all positive net present value projects available to each firm, we instead use undistributed cash flow as a proxy for free cash flow.

¹⁴ Whereas dividend policy is under the manager's discretion, we previously argued that policyholder dividends are a form of fixed obligation that greatly affects managerial reputation. Although we contend that the obligation to pay stockholder dividends is not as strong, the findings of DeAngelo, DeAngelo, and Skinner (1992) indicate that managers consider these obligatory unless sustained future losses are anticipated. Therefore, we follow Lehn and Poulsen (1989) in deducting stockholder dividends.

The organizational form variable is a binary variable, having a value of one for stock insurers and zero for mutuals or mutual-owned stock companies. The size measure is the natural log of the insurer's admitted assets.

To control for regulatory influence, we follow Boose (1990) and use a binary variable to note whether a company is licensed to do business in the state of New York. The New York insurance department is known for rigorous regulation; furthermore, its "extra-territorial" rules require insurers to meet the stringent New York standards even when doing business in other states. Companies operating in the state of New York are assigned a value of one, and companies not operating in the state of New York are assigned a value of zero. If the more stringent nature of the New York regulatory system encourages the retention of cash to protect solvency, the relation between free cash flow and the regulatory variable will be positive. If the New York system conversely encourages the disbursement of cash in acting as a monitor for the owners of the firm, the relation will be negative.

We measure default risk as the number of Insurance Regulatory Information System (IRIS) ratios the company had outside the NAIC's usual range of values for the year 1988. The IRIS employs a series of twelve ratios to evaluate the financial condition of life insurers, and if a firm has four or more ratios outside of the "usual" range suggested by the NAIC, then that firm is targeted for additional regulatory attention. We calculate default risk for the year preceding 1989 to avoid a mechanical relation between the accounting numbers used to calculate both free cash flow and the IRIS ratios. We expect this *ex ante* default risk proxy to be positively related to free cash flow. A high measure of default risk for the year preceding our study should result in a managerial preference for retaining cash (as opposed to paying dividends) to assure regulators that the solvency of the company is not in jeopardy and thus divert regulatory intervention.

Because most fixed obligations of life insurers are policies rather than traditional long-term debt, the use of a debt-to-equity or debt-to-asset ratio does not adequately reflect all of an insurer's fixed obligations. Therefore, we use a measure of leverage that equals total liabilities (total assets minus surplus) divided by assets. The expected relation between our measure of leverage and free cash flow is negative. Table 1 presents univariate statistics for stock and mutual life and health insurers used in the analysis.

The mutuals in our sample have a median for the free cash flow proxy that is significantly greater than the stock median. The median size of the mutuals is significantly greater than the median size of the stock insurers. Mutuals are also more likely to be licensed in New York and have a lower median value for our default risk proxy. Finally, mutuals have a higher median level of leverage than stock insurers. While fixed obligations are expected to reduce the free cash flow problem, mutuals have higher median levels of both undistributed cash flow and leverage. The larger size and, consequently, the larger borrowing power of mutual firms may explain their higher fixed obligations.

Table 1
Descriptive Statistics for Life and Health Insurers
Taken from a Sample of 1,292 Life and Health Insurers in 1989

<i>Variable</i>	<i>Mean</i>	<i>Minimum</i>	<i>Q1</i>	<i>Median</i>	<i>Q3</i>	<i>Maximum</i>
<i>Panel A: Subsample of 277 Mutual Firms</i>						
FCF	700.00	0.00	3.76	27.37*	143.54	57,101.86
SIZE	18.64	11.59	16.81	50.52*	20.20	25.58
REG	0.69	0.00	0.00	1.00**	1.00	1.00
DEF	1.76	0.00	0.00	1.00*	3.00	7.00
LEVER	0.74	0.00	0.61	0.85*	0.93	0.98
<i>Panel B: Subsample of 1,015 Stock Firms</i>						
FCF	207.67	0.00	1.46	9.32*	79.51	10,709.08
SIZE	17.62	11.80	15.92	50.44*	19.28	24.67
REG	0.49	0.00	0.00	0.00**	1.00	1.00
DEF	2.34	0.00	1.00	2.00*	3.00	10.00
LEVER ^c	0.67	0.00	0.52	0.76*	0.89	1.08

Note: FCF (in millions of dollars) = net operating and investment income for 1989, plus additional capital changes paid in less gross interest expenses less income taxes less policyholder dividends less stockholder dividends if positive, and zero otherwise. SIZE = the natural logarithm of the insurer's admitted assets. REG = one if the insurer is licensed to do business in the state of New York and zero otherwise. DEF = the number of 1988 Insurance Regulatory Information System ratios (maximum 12) that a company has outside the NAIC's usual range of values. LEVER = the company leverage ratio measured as total liabilities (total assets minus surplus) divided by total assets. A company with negative surplus will have LEVER greater than one.

* Median test is significant ($p < 0.001$) for this variable between the mutual and stock subsamples.

** Chi-squared test is significant ($p < 0.001$) for this variable between the mutual and stock subsamples.

Method

We estimate our model using the Tobit estimation procedure, which is appropriate because the dependent variable is truncated at zero.¹⁵ The regression equation is shown in equation (3).

$$FCF = \alpha + \beta_1 ORG + \beta_2 SIZE + \beta_3 REG + \beta_4 DEF + \beta_5 LEVER + e, \quad (3)$$

where FCF = undistributed cash flow (expressed in millions of dollars),
 ORG = organizational form (0 = mutual, 1 = stock),
 SIZE = natural logarithm of admitted assets,
 REG = regulatory environment (1 = insurer operates in New York, 0 = otherwise),
 DEF = default risk (the number of IRIS ratios outside the NAIC's usual range of values for 1988), and
 LEVER = total liabilities divided by total assets.

¹⁵ By definition, negative cash flows (or operating losses) do not have the property of being free resources and thus present a measurement problem. We resolve this problem by defining free cash flow as zero whenever our measure of undistributed cash flow is negative. If our proxy for free cash flow is less than or equal to zero, then there is by definition no amount of cash available for discretionary spending and managerial abuse. The magnitude of the negative amount is irrelevant.

Results and Discussion

The results of the regression analysis are presented in Table 2. We analyzed the regression for possible collinearity problems by running an ordinary least squares regression and analyzing the variance inflation factors of the variables. We find no evidence of collinearity among the variables. In other regressions not reported here, we include interaction terms between organizational form and the other variables, and none are economically significant.¹⁶

Table 2
Tobit Estimation Results
Taken from a Sample of 1,292 Life and Health Insurers in 1989
Dependent Variable = Free Cash Flow

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>Z-Statistic</i>	<i>P-Value</i>
Intercept	-5,701.54	508.22	-11.22	0.0000*
ORG	-249.99	127.62	-1.96	0.0501*
SIZE	385.70	31.65	12.18	0.0000*
REG	-190.80	123.63	-1.54	0.1228
DEF	14.52	30.57	0.47	0.6349
LEVER	-949.28	36.72	50.01	0.0000*

Note: ORG = organizational form (1 = stock, 0 = mutual). SIZE = natural logarithm of admitted assets). REG = regulatory environment (1 = operates in New York, 0 = otherwise). DEF = default risk (number of 1988 IRIS ratios outside normal range). LEVER = leverage (total liabilities/total assets).

* Significant at the 0.05 level or better.

The significant negative estimated coefficient on the organizational form variable indicates that mutual insurers retain more cash flow than stock insurers, which is consistent with our prediction and represents further evidence in support of the Mayers and Smith (1981) prediction that the agency costs of equity are higher in mutual firms than in stock firms. The significant negative estimated coefficient on our leverage variable also supports the portion of Jensen's theory which predicts that the presence of fixed obligations in the capital structure bonds managers to disburse excess cash flow.

Insurer size is positively and significantly related to free cash flow. This result is consistent with our predictions that larger size results in higher cash flow and that larger size indicates higher agency costs of equity.

The regulatory stringency variable is not significant, even at the 0.10 level. We therefore cannot confirm Demsetz and Lehn's (1985) prediction that the regulator serves as a surrogate monitor for the owners of the firm. This result

¹⁶ We find statistically significant coefficients on the interaction terms ORG*LSIZE and ORG*LEVER. These interactions only change the results and conclusions for very small insurers or insurers with very little leverage. Given the substantially different size distributions of stock versus mutual insurers, extrapolation of the regression to these firms, especially smaller firms where very few mutuals exist, is not advisable according to Neter, Wasserman, and Kutner (1990, p. 262). We conclude that the interaction effects are statistically, but not economically significant, for our data set.

differs from Boose (1990), who finds that regulatory influence is significant in explaining general insurer expenses.¹⁷ Furthermore, this finding does not indicate that a stringent regulatory environment encourages managers to retain cash flow in order to protect solvency.

Although the default risk coefficient has the predicted sign, it is not significant. Thus, we find no support for our prediction that a high default risk rating under the IRIS system motivates managers to retain cash flow. Perhaps managers find other ways to appease regulators than retaining cash flow. Or, possibly, the fact that the IRIS system measures much more than liquidity is clouding our results. For example, five of the twelve ratios measure year-to-year changes in insurer attributes such as product mix and asset mix. Both an upper and lower boundary for these ratios is set, and if the insurer exceeds either boundary then that ratio is considered "out of range." A high level of default risk potentially has no impact on free cash flow because insurers attempt to change characteristics besides liquidity to divert regulatory attention.

Summary and Conclusions

According to Mayers and Smith (1981), the agency costs of equity should be greater in mutual insurers than in stock insurers, due to the high cost of takeover and the greater potential for managerial entrenchment. We hypothesize that this difference in agency costs of equity should be reflected in free cash flow; specifically, that mutual insurers will retain greater free cash flow than stock insurers.

Our regression findings indicate that mutual managers do retain significantly greater free cash flow than stock insurer managers. Contractual limitations of managerial discretion in mutual firms (e.g., participating dividend schedules) do not fully mitigate the loss of debt market bonding and the market for corporate control. Our findings with respect to leverage also support Jensen's prediction that the existence of fixed claims reduces the free cash flow problem. Finally, our results are consistent with Mayers and Smith's prediction that problems of limiting managerial discretion increase with insurer size.

Several limitations of our research exist. Data limitations do not allow us to specifically categorize stock insurers as Mayers and Smith (1990) did, in order to recognize differences in managerial behaviors that result from differences in ownership concentration. Appropriate data might be available for smaller samples, and this is an area for future research.

Our control for differences in regulatory environments is admittedly imperfect because it recognizes only two regulatory environments. This limitation may explain the observed insignificance of the regulatory influence variable. Other states besides New York might have regulatory conditions that would impact managerial decisions regarding cash disbursement, yet we presently are

¹⁷ Boose's findings with respect to regulatory influence are somewhat inconsistent. She finds that the regulatory variable is significant only in controlling general expenses (not overall expenses).

unaware of a valid method for quantifying differences in regulatory influence that pertain only to free cash flow.

Jensen's theory assumes that free cash flow will exist in certain industries because of low growth opportunities. The unique structure of the insurance industry provides an environment for testing the relation between free cash flow and organizational form. The insurance industry has been omitted from free cash flow research largely due to its unique regulatory environment, and our analysis addresses this research gap. Our cross-sectional study of one industry during a single time period controls for differences in macroeconomic, social, and political factors that might change over time and, hence, affect managerial behaviors with respect to cash disbursement. By focusing on one industry, we also control for differences in investment opportunity sets, which Jensen notes are important in analyzing free cash flow.

Our results indicate that regulators concerned with policyholder interests should encourage mutual insurer managers to disburse excess discretionary cash flow. Policyholders and investors should pay similar attention to mutuals in an effort to discern whether the actuarial risks, dividend policies, and levels of free cash flow held by insurer management are sufficiently consistent with their interests.

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