Mutual versus Stock Insurers: A Synthesis of the Theoretical and Empirical Research

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Abstract: The coexistence of mutual and stock organizational form in insurance has been the topic of extensive study. This article provides a review of theoretical and empirical literature from three perspectives: agency problems in each form, efficiency, and the causes of conversion between the two forms. Issues in the existing literature and unanswered questions are also identified.

INTRODUCTION

A unique phenomenon in the insurance industry is that the market is dominated by both mutual and stock firms. The issue of organizational form in the insurance industry has long attracted research interest. This article provides a synthesis of theoretical and empirical literature relevant to the question of the optimal organizational form, i.e., mutual versus stock insurers; it also identifies unanswered questions for future research.

Mutual and stock companies differ fundamentally in the manner in which they structure the manager, owner, and customer functions. In a mutual organization, the customers are also the owners. Customers provide capital, own the residual value of the firm, and bear the risk. In a stock organization, the owners and customers are distinct. The owners supply capital and receive the residual value; the risk is shared between the owners and customers. The mutual form is free of the conflict of interest between the owners and customers because these two parties are one. The

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owner-customer conflict in the stock company is, however, unavoidable. It is generally believed that the stock company provides a more effective mechanism for dealing with the owner-manager conflict.

The existing literature on organizational form can be categorized into three streams of research that attempt to answer three questions: Why do the mutual and stock organizational forms coexist? Which form is more efficient? Why does one form convert to the other? Our literature review is guided by these three questions. After a careful review of the literature, we find that (1) a theoretical framework that can systematically address all three questions does not exist; (2) while the managerial discretion problem has received a lot of research attention, the owner-customer conflict and its implications for risk taking has received very little attention; (3) the empirical evidence on the efficiency of mutual versus stock insurers has been so mixed that further examination is necessary.

Various coexistence theories have been proposed and are used here in discussing agency problems among owners, customers, and managers. The primary conflicts of interest are those between owners and customers and those between owners and managers. We first discuss the literature along these two lines with a focus on the adverse selection and moral hazard problems of each contracting party. In the following section, we review the empirical studies that evaluate the efficiency of the mutual versus stock insurers. Next, the literature on the causes of demutualization and mutualization is discussed. Finally, we summarize and highlight some open questions.

**CONFLICTS OF INTEREST AMONG CONTRACTING PARTIES**

A dominating explanation for the coexistence of mutual and stock insurers is agency theory. According to agency theory, different organizational forms create different incentives for the contracting parties and thus different costs of controlling the incentive problems (Jensen and Meckling, 1976; Fama and Jensen, 1983a, 1983b. In this section, we discuss the conflicts of interest among owners, customers, and managers in mutual and stock insurers and review the relevant literature.

**Conflict of Interest between Owners and Customers**

In insurance companies, a major conflict exists between owners, who wish to maximize the market value of the firm’s equity, and policyholders, who wish to minimize premiums and the risk of unpaid claims. The contractual relationship between owners and policyholders is determined
by the means of risk sharing, provision of capital, and the designated residual claimants. In a mutual insurance company, risks are shared within the pool of policyholders and policyholders provide the capital and own residual gains or losses. In a stock insurance company, stockholders supply capital and claim the residual value of the company, and, due to limited liability, risks are shared by both the stockholders and the policyholders.

When asymmetric information exists between customers and owners, two agency problems arise—i.e., adverse selection and moral hazard. In the following we discuss the adverse selection and moral hazard of customers and of owners.

**Adverse Selection of Customers**

There are two types of adverse selection by insurance customers. The first is that due to higher-risk customers selecting insurance or more insurance. The second, which has received less attention, is due to customers adversely selecting organizational form. In a stock form the risk is shared by stockholders and policyholders. When the aggregate risk of insurance customers is high, the customers will prefer the stock form, which transfers risk to stockholders. This can also be understood as a policyholder incentive to free ride or to expropriate stockholder capital (Laux and Muermann, 2010). On the other hand, when risk is low, the mutual form arises endogenously as a self-selection mechanism to cope with the risk at a lower cost (Smith and Stutzer, 1990). The adverse selection against organizational form implies that stock (mutual) insurers are more likely to be found in business lines with higher (lower) underwriting risk. This is consistent to the evidence documented by Lamm-Tennant and Starks (1993) and Mayers and Smith (1988, 1994), who find that stock insurers are associated with riskier lines of business and geographic area. This evidence can also be explained by different managerial discretion problems of mutual and stock insurers according to Mayers and Smith (1988, 1994). The literature on managerial discretion problems is discussed in a subsequent section.

**Adverse Selection of Owners**

In a mutual organization, the adverse selection of owners is equivalent to the adverse selection of customers, as owners and customers are the same party in a mutual firm. In a stock firm, investors may adversely select against risks by avoiding investing in lines where they think the under-

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3Smith and Stutzer (1990) study the Farm Credit System (FCS), which is a mutual organization. FCS pays dividends to borrowers contingent on the performance of FCS. This mutual form is attractive to low-risk customers and repels high-risk customers.
writing risk is too high or unpredictable. If so, then the mutual form is a likely choice available for insurance solicitors to share risk. Doherty and Dionne (1993), in their explanation of mutualization in the 1980s “Liability Insurance Crisis,” suggest that when there are undiversifiable risks and the resultant external capital is costly, customers will choose to bear risks themselves. This is evidenced by the popularity of the mutual insurance form in special-risk industries, like medical malpractice, fishing, and agriculture. On the other hand, when risk is more predictable and external capital is more accessible, the stock form is usually preferred (Mayers and Smith, 2002; Viswanathan and Cummins, 2003).

From this vein of the literature, we can see that the formation of mutual versus stock form can be the result of adverse selections by investors and insurance customers. Insurance customers adversely select the stock form when aggregate risk is high and choose the mutual form when aggregate risk is low. Investors adversely select against risks by avoiding investing in lines with high risk, and that behavior makes the mutual form the only choice available for insurance customers. This may explain why we observe mutual insurers in both low-risk and high-risk lines of business.

**Moral Hazard of Policyholders**

Because of the existence of insurance, policyholders tend to take less care, which is known as the moral hazard of policyholders. Intuitively, a mutual organization can better control such moral hazard, as policyholders bear the risk themselves (Smith and Stutzer, 1995).

**Moral Hazard of Owners**

The owners’ attempt to expropriate wealth from creditors — *i.e.*, policyholders in insurance — is known as the moral hazard of owners. A mutual organization is free of such a moral hazard problem. A stock organization, however, has owners with this moral hazard problem; the stockholders may expropriate value from policyholders by taking actions such as delaying claim payments and increasing the firm risk after policies have been issued. The latter is an attempt to shift risk to policyholders and so expropriate value. To control the claim-delivering moral hazard problem and similar types of expropriation, independent agents are more likely to be employed by stock insurers (Kim, Mayers, and Smith, 1996). The risk-shifting moral hazard problem refers to the incentive that shareholders have to increase the risk of investment at the expense of the policyholders’

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4In this case, the insured do not successfully adversely select the stock ownership structure, because the investors select against high-risk lines.
interests. Merton (1974, 1977) observed that a debt obligation can be represented as a default-free bond minus a put option; the put option is held by shareholders and shifts losses to the debtholders or policyholders in insurance cases whenever the firm is liquidated. Since the put option values increase with asset risk and leverage, shareholders have incentives to take excessive risks in order to exploit this option value. The evidence of this prediction has been presented in several studies. For example, when compared to mutual insurers, stock insurers are found to use less reinsurance (Mayers and Smith, 1990), select riskier actives (Lamm-Tennant and Starks, 1993), and take significantly more risk in response to the adoption of insurance guaranty funds (Lee, Mayers, and Smith, 1997).

CONFLICT OF INTEREST BETWEEN OWNERS AND MANAGERS

Managerial discretion problems, i.e., moral hazard of managers, arise when ownership is separated from control (Jensen and Meckling, 1976; Fama and Jensen, 1983a, 1983b), as managers, who wish to maximize their own utility, may not act in the best interest of shareholders. In a mutual insurance company, policyholders are entitled to vote on corporate governance issues, but in reality, the actual degree of control exercised by policyholders is very limited. Greene and Johnson (1980) surveyed about 60 of the largest life insurers and found that for mutual life insurers, although policyholder proxy voting is allowed, the actual voting rate is extremely low, ranging from 0.0001 percent to 0.2 percent. This rate is 0.7 percent to 44.9 percent for stock insurers. Highly diversified ownership in a mutual insurer discourages policyholder interest in monitoring management. Viswanathan and Cummins (2003) and Mayers and Smith (2004) suggest that demutualization may be initiated by self-interested managers who desire to maximize their compensation and may act with little restraint. The stock organization provides a more effective mechanism, such as equity-based compensation, proxy fights, and the mergers and acquisitions market, to control managerial behavior.

The studies on managerial discretion problems in insurance were pioneered by Mayers and Smith, (1981). According to the managerial

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5 Regan and Tzeng (1999) argue that the stock insurer’s choice of independent agents is mainly due to the risk and complexity of lines operated by stock insurers. They suggest that distribution systems and organizational forms are only indirectly related, because when organizational form and distribution system are treated as endogenous, their relationship becomes insignificant.
discretion hypothesis, stock firms should be prevalent in activities that involve significant managerial discretion. In support of the managerial discretion hypothesis, Mayers and Smith (1986) document that in the property casualty sector, stock insurers tend to concentrate in more complex lines, such as commercial lines of insurance, and in broader geographical areas. Similarly, Lamm-Tenant and Starks (1993) find that stock insurers are engaged in higher-risk business lines and geographic area, but they do not imply that the evidence is solely the result of managerial discretion. Pottier and Sommer (1997) report mixed evidence in the life insurance sector regarding the managerial discretion hypothesis. They find that mutual insurers are associated with a higher percent of business in life insurance and individual insurance and a greater percent of assets held in separate accounts, which is consistent with the managerial discretion prediction that mutual insurers tend to be involved in activities that require less managerial discretion. They find no evidence, however, of a link between ownership structure and either line-of-business concentration or geographic concentration, as predicted by Mayers and Smith (1981).

Some research examines the implication of the managerial discretion hypothesis for the structure of executive compensation and composition of the board of directors. Mayers and Smith (1992) found that mutual company executives are paid less than stock company executives and noted consistency with the managerial discretion hypothesis, because mutual insurers operate in areas requiring less discretion. Mayers, Shivadasani, and Smith (1997) and He and Sommer (2010) find that mutual insurers use more outside board members than stock insurers due to the lack of alternative mechanisms to control managerial discretion.

The managerial discretion hypothesis developed by Mayers and Smith (1981, 1988) is one of the most influential theories in insurance organizational form studies. The theory, however, is not free of criticism (see Smith and Stutzer, 1995). As we see the issue, the evidence that stock insurers are involved in higher-risk activities has alternative interpretations. As discussed in the prior section, the stockholders’ risk-shifting moral hazard problem and the insurance customers’ adverse selection against organizational form may also lead stock insurers to be more involved in higher-risk activities. Pottier and Sommer (1997) note that “Managerial discretion is clearly not the sole factor in explaining ownership structures in the life insurance industry.” Moreover, managerial discretion theory fails to explain the popularity of mutual ownership in special risk areas, like medical malpractice, fishing, and agriculture. Smith and Stutzer (1995) argue that the adverse selection and moral hazard of customers do more to explain the kinds of contracts offered by financial mutual organizations than do agency problems between owners, managers, and customers. The
disentanglement of these alternative explanations requires more research so that we may determine the contribution of each theoretical construct to the coexistence of mutual and stock insurers.

Efficiency of Mutual and Stock Insurers

A central question regarding mutual versus stock organizational form is the efficiency or performance of each form. The survival of stock and mutual organizational forms implies their comparative efficiency in different market segments and conditions. Although Mayers and Smith (1981) and Smith (1986) argue for efficiency of both mutual and stock organizations based on agency theories (Jensen and Meckling, 1976; Fama and Jensen, 1983a, 1983b), the empirical evidence on this issue can be best described as mixed.

Cummins, Weiss, and Zi (1999) examine the U.S. property casualty industry and argue that mutual and stock insurers use different production technologies, each of which is the most efficient for producing its respective input and output mix. Efficiency studies on Japanese property casualty insurers (Jeng and Lai, 2005) and Spanish insurers (Cummins, Rubio-Misas, and Zi, 2004) report similar efficiency of mutual and stock insurers. The evidence in the U.S. life insurance industry also suggests no differences in the efficiency of mutual and stock insurers (Cummins and Zi, 1998; Boose, 1990).

Erhemjamts and Leverty (2010) provide new evidence on the efficiency of U.S. life insurers. They find that stock insurers are more efficient in producing life insurance outputs and that mutual insurers achieve significant improvements in efficiency after converting to the stock organizational structure. This result contrasts with prior evidence (Cummins and Zi, 1998; Cummins, Weiss, and Zi, 1999; Cummins, Rubio-Misas, and Zi, 2004).

Another way to compare performance of each organization form is to examine the efficiency changes after demutualization or mutualization. If the efficiency hypothesis is an underlying motive behind demutualization, then there should be improvement in the company’s performance, such as growth in surplus, total assets, operating income, or premium, and higher turnover rate for managers. Mayers and Smith (1986) examine the mutualization of 30 life insurers between the 1840s and 1960s and find that mutualized insurers improved the operational efficiency overall in aspects of premium income, product mix, lapse rate, returns to stockholders, and management turnover. McNamara and Rhee (1992) examine the demutualization performance of 33 life insurance companies that converted between 1902 and 1986. They find a significant increase in capital and surplus immediately following the demutualization and an increase in
management turnover around the time of conversion. A more recent work by Jeng, Lai, and McNamara (2007) examines U.S. demutualized life insurers from the 1980s to 1990s and reports ambiguous evidence of efficiency improvement after demutualization.

Due to the mixed evidence on the efficiency of mutual and stock insurers, the question of whether one form is superior to the other, or the two forms are efficient in different ways, remains inconclusive.

Causes of Organizational Form Conversion

The insurance industry has undergone waves of organizational changes, known as mutualization and demutualization. A number of motivations for organizational form conversion have been proposed in the literature, e.g., access to capital markets (Viswanathan and Cummins, 2003), improved efficiency (Mayers and Smith, 1986), increasing firm growth prospects (Mayers and Smith, 2004), wealth expropriation (Mayers and Smith, 1986), and improvements in managerial incentives (Viswanathan and Cummins, 2003). For a detailed review on these theories, see Viswanathan and Cummins (2003).

A relatively recent work by Zanjani (2007) suggests that regulatory policy, especially capital requirement, is a dominating reason for the conversion of organizational form in the U.S. life insurance industry. Sugino (2010) examined the large long-standing mutual life insurers in Japan and concluded that extensive demutualization is unlikely to happen in the near future for deep and special historical reasons.

One issue with the above theories is that they cannot explain why many mutual insurers do not convert. If one or all of these theories can explain the advantages of demutualization or mutualization, should the industry be dominated by one organizational form?

CONCLUSION

Although it has been extensively studied, the issue of insurer organizational form remains an open question. Mutual and stock insurers have coexisted for over a hundred years. Will the coexistence continue? How robust are the conditions for coexistence? There is no conclusive evidence that either organizational form is more advantageous than the other. If mutual and stock insurers have comparative efficiencies in different market segments, why would demutualization or mutualization happen in the first place? Is the mutual form endangered? Why have many mutual firms, such as State Farm and New York Life, chosen not to demutualize and yet
have remained successful in both the property-liability sector and the life-health sector?

To answer these questions, a theoretical framework that allows one to address all the issues discussed here is needed. Such a framework must be able to consistently explain the coexistence of mutual and stock forms, their efficiency and the causes of mutualization and demutualization.

The existing empirical research has two issues that need to be clarified. First, the current empirical literature supports the managerial discretion hypothesis, but cannot preclude alternative explanations. One such explanation is the adverse selection of insurance customers and owners. This issue and its implication for risk taking deserve more research attention.

Second, the evidence on the efficiency of mutual versus stock insurers is mixed and has resulted from different evaluation approaches or different samples. More testing is required but should be based on a theory that incorporates the incentives and behavior of all stakeholders in the insurance firms and markets.

It’s evident that more research is needed before we can have a solid understanding of the organizational forms of insurers.

REFERENCES


