



### **“On the Corporate Demand for Insurance”**

David Mayers and Clifford W. Smith, Jr.

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Synopsis by John Thomas Seigfreid

Risk aversion drives the demand of insurance for individuals. Yet, can the same be said for corporations? David Mayers and Clifford W. Smith, Jr. think the classic risk preferences basis is an unacceptable basis for analyzing organizational demand. The authors suggest there is a set of incentives, consistent with the modern theory of finance, that catalyze the corporate decision to purchase insurance. Mayers and Smith stem their work from Modigliani and Miller's (1958) research and look at the firm's decision to purchase insurance because of taxes, contracting costs, or the impact of financing on the firm's investment decisions. For corporations with diffuse ownership, risk aversion is not a sufficient incentive for managers to purchase insurance since stockholders and bondholders with their access to capital markets can eliminate typically insurable risk through diversification. Yet, 45.8% of total net premiums written in 2013 were for commercial lines of business.<sup>1</sup> Mayers and Smith argue that this large corporate demand for insurance derives, not from risk aversion, but from a different set of incentives and the insurance buying behavior today suggests that the basis for Mayers and Smith's original inquiry still exists.

#### **Corporate Insurance and Risk Shifting**

Mayers and Smith begin by arguing that, within a firm, various agents possess a comparative advantage in risk bearing. Specifically, these agents represent claimholders who can diversify their risk by selling their divisible claims on a secondary market. This advantage allows them to bear risk at the lowest cost. Thus, when the contracting process is expensive, incentives exist to allocate risk to these claimholders, but corporations are limited by the capital stock of the firm. An alternative exists; insurance contracts allow the firm to shift risk to the insurance company, achieving an efficient allocation of risk for the firm's other claimholders.

Mayers and Smith explain that transaction costs of bankruptcy, albeit a relatively small expense, induce firms to purchase insurance against some risks. A corporation will be inclined to purchase insurance if the estimated reduction in bankruptcy costs is lower than the present value of the insurance premiums. Furthermore, Warner's (1977) evidence indicates that the transaction costs of "bankruptcies are less than proportional to firm size."<sup>2</sup> By reducing the potential costs of bankruptcy through the purchase of insurance, a firm will reduce its overall risk-based position. For example, if a single warehouse represented a large portion of a firm's assets, other stakeholders would value the purchase of property insurance. With this subsequent purchase of insurance, the firm protects its claimholders from accidental loss by allocating risk to another party that presumably is more efficient in handling the risk.

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<sup>1</sup>See Commercial Lines

<sup>2</sup>See Warner (337-47)

## **Real Service Efficiencies and Insurance Monitoring**

For a corporation experiencing excessive insurance claims, administration can be a burden and a hassle. Hence, it would be in a firm's best interest to delegate claims management to another party or "agent" with more relevant experience and resources. As follows, insurance firms derive a comparative advantage in processing claims due to economies of scale and gains from specialization. Mayers and Smith's analysis implies that "for a given premium, efficiencies in claims administration motivate the corporate purchase of insurance the higher the frequency of insurance claims."<sup>3</sup> Moreover, the value to a corporation to an insurance firm's specialization in claims administration also clarifies the observed purchase of retroactive liability coverage.<sup>4</sup> As Mayers and Smith argue, if the total claims exceed the previous coverage limits, then insurance companies' adjusters have little incentive to negotiate efficient settlements. Consequently, the provision of real-service efficiencies by insurance firms, continue to incentivize the purchase of insurance by corporations.

Jensen and Meckling (1976) and Fama (1980) assert that conflicts of interests naturally arise when authorized discretionary behavior facilitates individuals to maximize their expected utilities. Undoubtedly, conflicts of interest can be detrimental to firm value. Yet, "incentives exist to write contracts which maximize the current market value of the firm."<sup>5</sup> Managers with compensation tied to performance may postpone selected expenditures until after retirement. This increases their expected compensation, while potentially endangering the firm's livelihood. Anticipatory owners adjust compensation packages to reflect these anticipated actions. As a result, managers have an incentive to refrain from these risky engagements and allow their actions to be monitored. All this being said, if the insurance company could act as an effective monitoring mechanism, there would be a sufficient incentive for the purchase of insurance. Mayers and Smith conclude, "managers with greater discretion over the choice of hazard reducing projects will be more likely to purchase insurance."<sup>6</sup>

Insurance contracts' can reduce agency issues in another way, by guaranteeing a particular set of real investment decisions by a corporation. After a firm sells bonds, there is temptation to deviate from value maximization. Bondholders realize this, and thus, include language in indentures requiring the firm to maintain certain types of insurance coverage.

## **Regulation, Taxes, and Corporate Insurance**

Mayers and Smith analyze extensively the role of taxes in perturbing firms to buy insurance.<sup>7</sup> As an example, they reason that insurance can reduce a firm's expected tax liability, subsequently serving as a measurable incentive for the corporate demand of insurance. With respect to the tax code, the present values of expected tax liabilities are equal, whether insured or not. Thus, the decision to insure depends on three conditions. Namely, loading fees, interest rates and the marginal tax rate. Although positive loading fees obviously favor self-insurance, the same cannot be said for positive interest rates and non-constant effective marginal tax rates.

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<sup>3</sup>See Mayers and Smith, p. 285

<sup>4</sup>Mayers and Smith, p. 285-286

<sup>5</sup>See Jensen and Meckling (305-60) and Fama (288-7)

<sup>6</sup>See Mayers and Smith, p. 286

<sup>7</sup>See Mayers and Smith, p. 289

When interest rates are positive, the “present value of the firm’s expected tax liability is lower with insurance than without.”<sup>8</sup> As a result, firms holding assets with long depreciable lives benefit from the purchase of insurance when interest rates are high. Furthermore, the 3-year carry-back and 7-year carry-forward provision of the tax code at the time of Mayers and Smith’s work can affect a firm’s decision to insure. This is because a loss exceeding the sum of the most recent 4 years earnings will prevent a firm from realizing the full tax benefits. Additionally, if a loss causes a reduction in a self-insured firm’s marginal tax rate, their expected tax shield of self-insurance is reduced. Thus, the expected tax liability of a self-insured firm can be higher than for a firm with insurance. As noted by Mayers and Smith, self-insuring comes at a price when positive interest rates and reductions in effective marginal tax rates are realized.

Incentives to purchase insurance can depend on whether a firm is regulated. As Mayers and Smith point out, from a regulator’s point of view, it is difficult and expensive to obtain an assessment of the risk attributes of a customer. By “subcontracting” an insurance company with a comparative advantage in analyzing loss distributions, the likelihood of a proper risk assessment is higher. This way, losses are more accurately determined and loading fees are shifted from the regulatory firm to their customers. Thus, a regulated firm benefits from buying more insurance rather than an unregulated firm with similar characteristics.

Regulation also plays a role in creating insurance demand. In every state, compulsory insurance laws related to auto insurance have been passed to provide compensation for an innocent victim. For example, financial responsibility laws require an automobile owner to provide evidence of liability insurance coverage or proof of financial responsibility for a stated period after an accident. Additionally, each state has its own set of requirements mandating corporate insurance in different ways.<sup>9</sup> Texas, for one, legally requires that drivers carry two types of insurance covering bodily injury to others and damage to someone else’s property. Consequently, corporations are obligated to purchase insurance to comply with registration requirements.

Although the role of insurance in corporations has been largely ignored in finance literature, the corporate demand for insurance remains as prevalent as it did in 1982. Mayers and Smith have demonstrated how risk shifting, real-service efficiencies, taxes, monitoring, and compulsory insurance laws, all provide incentives for corporations to purchase insurance rather than self-insure. As a result, they have established an intellectual foundation for corporate insurance demand which helps to explain why in a world of more sophisticated risk management techniques, corporations still purchase insurance.

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<sup>8</sup>See Mayers and Smith, p. 290

<sup>9</sup>. Readers can find a complete listing of the states in “Summary of Selected State Auto Laws,” in Commercial Auto Insurance, IRMI, February 2014. Thanks to Robin Olson at the International Risk Management Institute

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