

# **Efficiency Implications of Alternative Regulatory Structures for Insurance**

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This paper presents a preliminary discussion of the efficiency implications of alternative regulatory structures for insurance. Scott Harrington provided helpful comments on an earlier version of this paper. Any remaining errors or omissions are the responsibility of the authors.

## I. Introduction

### A. Context

The insurance industry is undergoing an unprecedented evolution in terms of the structure of its markets, its products and services, and its scope of operations and transactions. This evolution is being spurred by the integration of financial services markets and global competition, along with other economic, demographic and technological forces. These developments are renewing a long-standing discussion of the framework for insurance regulation in the U.S.

Insurance regulation in the U.S. is somewhat unique with respect to its reliance on the states as the primary locus of regulatory authority.<sup>1</sup> The states regulate many areas of intrastate commerce, but their regulation of insurance is peculiar given the interstate operations of many insurers. In contrast, the federal government has a substantial role in the regulation of other financial services, with state authority generally limited to institutions and transactions confined within state boundaries. The increasing competition between various financial institutions and the potential reduction in legal barriers between banking and insurance activities prompts a comparison of their regulatory structures. Some might argue that consumers would be better served if insurers were regulated more like banks, with optional federal chartering and regulation of insurance companies.

One of the issues raised by such a proposal is the relative efficiency of alternative regulatory structures for insurance. Does regulation by the states impose extra costs or inefficiencies that could be avoided through federal regulation? How should regulatory

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<sup>1</sup> See Klein (1995) and Klein (1999) for a description of state insurance regulation and recent regulatory initiatives.

costs be defined and measured? Does one assess state insurance regulation as it is, or optimally configured? What is the alternative structure by which the efficiency of state regulation should be judged? Would optional federal chartering or other structural changes facilitate reforms in insurance regulatory policies that would enhance market efficiency?

## **B. Overview of Paper**

This paper initiates an inquiry into the relative efficiency of state insurance regulation and related issues.<sup>2</sup> We lay a foundation for our analysis by reviewing the reasons why insurance needs to be regulated and distinguishing what we consider to be essential regulatory functions from others that the states have chosen to perform. This distinction is important in determining costs inherent to a state regulatory structure and the potential benefits of regulatory reforms. We then compare the current institutional structures of insurance regulation and banking regulation. We postulate an optional federal charter/regulation system for insurance as our basis for assessing the relative costs of a state-based regulatory system. Our review includes the role of the National Association of Insurance Commissioners (NAIC) that helps to coordinate state insurance regulatory activities and provides support services to the states.

This is followed by a discussion of the types of costs pertinent to insurance regulation and issues associated with their measurement. We identify three basic categories of costs: 1) government expenditures on regulation; 2) direct or tangible costs

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<sup>2</sup> This paper from analyses of the efficiency of regulators (See Grace and Phillips, 1999). In this paper, we attempt to identify the costs of insurance regulation on insurers and consumers.

incurred by entities in complying with regulation; and 3) indirect or intangible costs reflecting market distortions caused by regulation, net of any benefits derived from regulation. As one moves down this list of costs, they become increasingly difficult to quantify and compare. We confine our quantitative analysis to direct regulatory expenditures and estimates of compliance costs. We assess other costs in qualitative terms. While intangible costs are the most difficult to measure, they also may be the most significant.

An important issue is the scope and design of regulatory policies and their implications for regulatory costs and market efficiency. There are different perspectives on whether reforms of regulatory policies would be more or less likely with increased federal involvement in insurance regulation. The resolution of such a question is beyond the scope of this paper, but we recognize its importance and comment on it.

Our estimates of regulatory compliance costs are based on a multiple regression analysis of insurer expenses. We look at the relationship between various expense ratios and two possible indicators of compliance costs: the amount of business written in a restrictive regulatory environment and the number of states/lines in which an insurer conducts business. We examine the relationship between these explanatory variables and the ratio of total expenses to premiums, salary expenses to premiums, claims costs to premiums, and the ratio of regulatory license fees to total premiums. We control for other factors affecting insurer expenses, such as its volume of business, lines of business, and type of distribution system.

Our hypothesis is that regulation imposes compliance costs and that firms operating in restrictive regulatory environments or in more states are likely to have higher

compliance costs. Our results are consistent with this hypothesis, as the amount of business written in restrictive environments is positively related to higher expense ratios, as is the number of states/line in which an insurer conducts business.

We conclude that the potential savings from optional federal chartering depend greatly on the scope and policies of federal regulation and how they would differ from the state regulatory system that may evolve in the future. We believe that there would be some savings from federal regulation, probably small, in the area of solvency or financial oversight. Much larger potential savings could be achieved from delegating current market regulatory functions to a federal entity. Alternatively, significant efficiencies could be achieved under the current state system or alternative federal-state system by eliminating non-essential market regulations and standardizing those regulations that are retained.

It is important to stress that this paper represents a first step in assessing the efficiency of our state-based system of insurance regulation and the advantages and disadvantages of alternative institutional structures and regulatory policies. Estimating regulatory costs is a formidable task and we need to do much more work in this area. We also did not examine the regulatory costs imposed on insurance intermediaries (i.e., agents and brokers). Further, the issue of relative costs is only one of a broader set of issues involved with the debate about how insurance should be regulated. This is a debate that will likely continue for some time and engender much more research. Our hope is that this paper contributes to a thoughtful policy discussion of the structure and scope of insurance regulation.

## **II. Regulatory Objectives**

### **A. Why Should We Regulate Insurance?**

Our discussion of the structure of insurance regulation begins with a review of the essential objectives of regulation. It is important to consider the functions regulators need to perform and compare these with the functions they do perform. Economic theory provides a basis for identifying essential regulatory objectives and functions. Arguably, the current scope of insurance regulation extends beyond that which benefits consumers. Confining state regulatory efforts to critical areas could reduce costs and improve outcomes without any changes in the institutional structure of state insurance regulation. Further efficiencies might be achieved by improving regulatory policies and procedures in critical areas without altering the role and authority of the states. Alternatively, optional federal chartering or other structural changes could promote better regulatory policies.

Regulation is best suited to remedy certain market failures and not necessarily market problems (e.g., high prices) caused by other external forces, such as escalating claims costs. Market failures constitute violations of the structural conditions for workable competition, which include entry and exit barriers, firm market power, externalities and information constraints. The purpose of regulation should be to correct market failures, or at least minimize their negative effects, and improve allocative efficiency (Spulber, 1988).

Not all market failures, however, are amenable to regulatory remedies. Hence, the criteria for regulating a certain activity could be stated as follows: 1) is there a significant market failure with substantial adverse effects on consumers or society; and 2) can

regulation significantly improve market performance? There are two types of failures that afflict insurance markets that regulation might help to correct: information problems and principal-agent conflicts.

## **1. Information Problems**

Insurers and consumers need information to make good decisions about insurance transactions. The implications of asymmetric information for insurers – adverse selection and moral hazard – are well documented (Varian, 1992). Insurers seek to minimize these problems through contract provisions, risk classification and selection, and pricing. Information is costly and these mechanisms are imperfect, but insurers have been able to develop viable private markets for many risks.

Insurance buyers also face problems in acquiring the information they need and individual consumers appear to be less able or less willing to overcome these problems without regulatory assistance (Joskow, 1973; Schlesinger, 1998). Consumers need information with respect to prices, the meaning of insurance contract provisions, the quality of service offered by different insurers, and the financial strength of insurers and their ability to meet their contractual obligations. It is costly for consumers to acquire this information, and the smaller the buyer, the fewer resources they can afford to expend on information acquisition. Further, it is apparent that some consumers choose to remain uninformed and myopic, regardless of their resources or the costs and benefits of acquiring information. Uninformed consumers are likely to make suboptimal decisions about insurance, which not only hurt them, but also in some instances, could have

adverse effects on other consumers or the general public.<sup>3</sup> Hence, it can be argued that there are net benefits to imposing certain regulatory restrictions on insurers and insurance transactions to prevent particularly bad consumer decisions stemming from ignorance.

## **2. Principal-Agent Conflicts**

Principal-agent conflicts arise from their differing incentives and the principal's problem in monitoring and controlling the behavior of his agent. In an insurance contract, the insured could be viewed as the principal and the insurer as his agent. The insurer seeks to maximize profits and the value of the company; the consumer seeks to maximize the risk protection and benefits received under their contract. The insured pays a premium and the insurer holds funds to pay claims contingent on their contract. However, the insurer could refuse to honor its obligations or take on additional financial risk that would jeopardize its ability to meet its obligations. Insureds can try to monitor their insurer's behavior and take legal action if necessary to protect their interests, but this is costly and possibly beyond the capacity of many smaller insureds. In a legal dispute, an insurer may have substantially more resources and bargaining power than a small policyholder. Hence, it can be argued that regulators can assist consumers by weighing in on their side to ensure that insurers meet their contractual obligations.

## **3. Social and Political Objectives**

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<sup>3</sup> For example, a consumer might purchase a contract that does not adequately cover his risks. If a loss occurs, he might not have the resources to cover the loss. Thus, the consumer faces the possibility of bankruptcy and may externalize his loss to others.

Voters and legislators may prefer insurance market outcomes that differ from those that would result from competitive market forces. For example, voters may favor compulsory auto liability insurance and regulatory limits on the rates paid by high-risk drivers. The feasibility and social welfare gains from such policies are debatable, but they are present in all states to varying degrees. The costs of enforcing politically driven regulations at the state level could be very high. The magnitude of these costs could differ substantially under a federal system. A realistic assessment of regulatory costs should consider the possible continuation of regulations motivated by social and political preferences. Indeed, federal insurance regulation could be more restrictive than the current state system in response to interest group pressures. The congressional appetite for restrictions on health insurers suggests that this kind of regulation would not be precluded under a federal system. On the other hand, some might believe that optional federal chartering would discourage attempts by regulators to transfer wealth.

## **B. What Do We Need to Regulate?**

The existence of insurance market failures due to information costs and principal-agent conflicts can result in suboptimal consumer decisions, excessive insolvency risk, and abusive market practices. Regulation can ameliorate these market failures and the inefficiencies they cause. At the same time, it is not obvious that regulation can or should try to fix all the problems that may arise from these or other alleged insurance market flaws. Furthermore, the costs imposed by regulatory restrictions have to be balanced against any perceived benefits. Below, we discuss two areas of insurance regulation

where government intervention seems to have fairly broad acceptance as well as a plausible economic foundation.

### **1. Limiting Financial Risk**

The public interest argument for the regulation of insurer solvency derives from inefficiencies created by costly information and principal-agent problems (Munch and Smallwood, 1981). Insurance company owners have diminished incentives to maintain a high level of safety to the extent that their personal assets are not at risk for unfunded obligations to policyholders that would arise from insolvency.<sup>4</sup> It is costly for consumers to properly assess an insurer's financial strength in relation to its prices and quality of service. Insurers also can increase their corporate risk profile after policyholders have purchased a policy and paid premiums.

Thus, in the absence of regulation, imperfect consumer information and principal-agent problems would result in an excessive number of insolvencies.<sup>5</sup> This does not mean that most insurers would fail without regulation, but regulation can constrain the behavior of insurers that might otherwise sustain an unacceptably high probability of ruin and regulators may be able to accomplish this at a lower cost than the market. Regulatory requirements on financial reporting and disclosure also may enhance the transparency of insurance transactions. Solvency regulation can help to limit insurers' insolvency risk and decrease insolvency costs in accordance with policyholders' preference for safety. The need for regulation of institutions with fiduciary responsibilities is generally accepted.

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<sup>4</sup> Most organizational forms of insurers in the U.S. limit the liability of owners.

<sup>5</sup> The market may attempt to provide information regarding the solvency prospects of the firms in the industry, but this information comes at cost and results in a second best outcome.

There are different views on how insurance financial regulation should be conducted. It is generally accepted that a sound financial regulatory system entails appropriate “solvency margins”, effective monitoring of insurers’ financial condition, and timely intervention against high-risk or troubled insurers. Beyond these basic elements, financial regulatory systems vary significantly among countries (Skipper, 1998). In the U.S., the states have employed a “prescriptive” approach to financial regulation under which insurers must comply with a detailed set of restrictions on their financial structure and transactions. Alternatively, the U.K. and many European countries follow a “prudential” regulatory philosophy. This approach provides insurers greater flexibility, which is compensated by stricter entry requirements, more intensive regulatory monitoring and greater regulatory discretion in intervening against insurers.

As in other jurisdictions, state regulators in the U.S. utilize their control of insurers’ entry into their markets and authorization to conduct business as their principal tool to coerce insurers to comply with regulations. State statutes set forth the requirements for incorporation and licensing to sell insurance and, as a result, an insurer must obtain a license in every state in which it does business.<sup>6</sup> State statutes require insurers to meet certain minimum capital and surplus standards and financial reporting requirements and authorize regulators to examine insurers and take other actions to protect policyholders’ interests. The states have established fixed minimum capital requirements, as well as risk-based capital requirements (based on a common formula developed by the NAIC).

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<sup>6</sup> In some instances, insurers are allowed to sell certain special types of insurance on a non-licensed or non-admitted basis.

If an insurer fails to comply with a state's regulations, regulators can deny or revoke the insurer's license to do business. An insurer's state of domicile also can place the insurer into receivership, with court approval, if it is in hazardous condition. As a matter of practice, the domiciliary state is an insurer's principal financial regulator, but other states in which an insurer does business also monitor its financial condition and can take action against it if necessary.

The states perform the following functions to meet financial regulation objectives:

- processing applications for admission;
- reviewing mandatory annual and quarterly financial statements and other reports;
- performing financial analysis and conducting early warning tests;
- conducting periodic and targeted financial examinations;
- engaging in informal and formal interventions against troubled insurers;
- administering receiverships; and
- overseeing insolvency guarantees.

It is reasonable to assume that all of these functions would be performed under a federal regulatory system, although policies, procedures and the use of resources might differ. A shift in emphasis to a prudential regulatory approach could result in significant changes in regulatory practices. The potential differences are discussed in the next section.

Providing insolvency guarantees is a policy decision that is not essential, but may be desirable, in a financial regulatory system. The states have established guaranty associations, which cover the vast majority of failed insurers' obligations to individual

policyholders.<sup>7</sup> These guarantees enhance the security of policyholders and their confidence in insurers. However, they also diminish buyers' incentives to avoid high-risk insurers and, hence, can encourage greater risk taking by insurers (Joskow, 1973 and Cummins, 1988). This increases the public interest in effective solvency regulation to offset the moral hazard problem created by insolvency guarantees.<sup>8</sup>

## **2. Policing Market Practices**

The states regulate various aspects of insurers' market practices and transactions, including prices, policy forms, marketing, underwriting, policy terminations and claims handling. A strong argument can be made that regulatory ceilings on insurance prices are unnecessary and regulatory floors are impractical. Studies indicate that insurance markets are structurally competitive and that insurers do not possess sufficient market power to sustain excessive prices (Weiss and Cummins, 1991; Klein, 1999). In fact, many states have moved away from regulating insurance prices and there is no clear evidence that consumers gain when states do regulate prices.<sup>9</sup> Indeed, price regulation can be very harmful when escalating costs and political considerations drive regulators to suppress rates (Harrington, 1992).<sup>10</sup>

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<sup>7</sup> Over time, guaranty fund coverage of large commercial policyholders has been eliminated in many states although their premiums are still subject to assessment.

<sup>8</sup> Risk-based pricing of assessments or cost sharing through larger deductibles and co-insurance provisions are other potential measures that could be employed to address the moral hazard problem.

<sup>9</sup> About one-half of the states subject personal auto and home insurance to prior approval rate regulation. A number of states are in the process of eliminating prior approval requirements for most commercial insurance products. Life insurance prices have generally not been regulated, although the adequacy of benefits is examined in relation to premiums. Regulation of health insurance rates and contract terms appears to be on the rise.

<sup>10</sup> Rate suppression distorts price signals to the market, constrains the supply and availability of insurance, and can increase insolvency risk.

The arguments surrounding the regulation of other aspects of insurers' transactions are more complicated. The states tend to closely regulate the provisions of insurance contracts purchased by individual consumers and small businesses. The primary concern is that, without such regulation, some insurers might offer and some consumers might purchase policies containing major gaps in coverage. States also may utilize form regulation to ensure compliance with mandatory insurance requirements, legislatively-mandated benefits, or regulators' view of appropriate contract provisions. In this respect, form regulation may cross the line from necessary consumer protections to promoting social and political objectives.

Similarly, regulation of insurers' conduct in the areas of marketing, underwriting, policy terminations and claims handling may be beneficial in some respects and politically motivated in others. The states regulate market conduct primarily through periodic examinations of insurers' transactions and records and responding to consumer complaints. Some level of conduct monitoring, complaint resolution and enforcement activity would be expected under any regulatory system. However, many believe that current state market conduct regulation is inefficient and some conduct standards may exceed what is necessary for consumer protection.<sup>11</sup>

### **3. Other Insurance Regulatory Functions**

The states perform a number of ancillary insurance regulatory functions, including:

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<sup>11</sup> These concerns have prompted the National Conference of Insurance Legislators (NCOIL) to sponsor a study of market conduct regulation. The use of an applicant's credit history in underwriting auto and home is an example of a contentious issue in market conduct regulation.

- monitoring competition and market analysis;
- statistical reporting;
- residual market administration;
- providing consumer information;
- agent licensing and enforcement;
- anti-fraud enforcement;
- collection of premium taxes and other fees; and
- legislative analysis and development of regulations.

While these activities are not as critical as financial and market regulation, they represent a small portion of regulatory budgets and some may provide net benefits to consumers. Agent licensing and consumer services are the most significant of these activities and would likely be continued under any regulatory structure.

### **III. Regulatory Structures in Insurance and Banking**

#### **A. Current Insurance Regulatory Structure**

##### **1. Role and Authority of Insurance Commissioners**

Every state and U.S. territory has a chief government official who is responsible for regulating insurance companies and markets. Most commissioners are appointed by the governor (or by a regulatory commission) for a set term or “at will”, subject to legislative confirmation. Twelve states and one territory elect their insurance commissioners who are more independent than appointed commissioners (NAIC, 1997).

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However, even elected commissioners must still cooperate with other administration officials in order to achieve their objectives.

Insurance commissioners are not autonomous and face a number of constraints in exercising their authority. Most importantly, regulators must act within the framework of insurance laws enacted by the legislature. Regulations promulgated by the commissioner are subject to review and approval by the legislature in some states. Regulatory actions are also subject to review and enforcement by the courts. In addition, resource constraints and the difficulties of supervising companies operating in multiple jurisdictions have caused states to defer primary solvency regulatory authority to the domiciliary commissioner (i.e., the commissioner in the state where an insurer is domiciled or incorporated). Meanwhile, non-domiciliary regulators can exert considerable influence on non-domiciliary insurers through the regulators' ability to deny entry to their state's markets.<sup>12</sup>

## **2. Regulation of Insurers and Producers**

All U.S. insurers are licensed in at least one state and are subject to solvency and market regulation in their state of domicile and other states in which they are licensed to sell insurance. Reinsurers domiciled in the U.S. also are subject to the solvency regulation of their domiciliary state. Some U.S. and non-U.S. insurers write certain specialty and high-risk coverages on a non-admitted or surplus lines basis that is not subject to price and product regulation. States still control entry by surplus lines carriers

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<sup>12</sup> The high degree of interdependence among states in regulating multi-state insurers is caused by the significant amount of business written in each state by non-domestic companies, as indicated in Klein (1995).

by imposing minimum solvency and trust requirements and supervising surplus lines brokers. Other alternative market mechanisms such as risk retention groups and captives are subject to some regulation in their state of domicile.

With the exception of solvency oversight by their domiciliary jurisdiction, reinsurers are not generally subject to direct financial and market regulation. Reinsurers are, however, regulated indirectly through the states' regulation of the primary insurers that are ceding business to reinsurers. Regulators control whether a ceding insurer can claim credit for reinsurance on its balance sheet, conditioned on whether the reinsurer meets certain financial and/or trust requirements imposed by regulators.

Insurance producers (i.e., agents and brokers) also are subject to regulation. Producers must be licensed to sell insurance in a state and must comply with various laws and regulations governing their activities. State laws require most insurance transactions to be conducted by licensed producers. Regulators monitor producers' compliance with regulatory requirements and can rescind or suspend a producer's license or exact fines if the producer fails to comply.

Insurance is a large and important industry that continues to grow despite fierce competition from other financial institutions and alternative risk management mechanisms. Table III.1 and III.2 summarize key financial data on the property-liability and life-health insurance sectors. Together, U.S. property-liability and life-health insurers collect roughly \$700 billion in premiums annually and control approximately \$3 trillion in assets. There are a little less than 8,000 insurance companies domiciled in the U.S. and their number has started to decline in recent years due to consolidation.

### **3. Role of the Federal Government**

Tension between the federal government and the states over the regulation of insurance dates back to the mid-1800s (see Kimball and Heaney, 1995).<sup>13</sup> This tension is created by the interstate operation of many insurers and their significant presence in the economy. On numerous occasions, the federal government has sought to exert greater control over the industry and the states have fought back aggressively to hold on to their authority. The primacy of the states' authority over insurance was affirmed in numerous court decisions until the *Southeastern Underwriters* case in 1944. In that case, the U.S. Supreme Court ruled that the commerce clause of the U.S. Constitution did apply to insurance and that the industry was subject to federal antitrust law. This decision prompted the states to support the enactment of the McCarran-Ferguson Act in 1945, which delegated regulation of insurance to the states, except in instances where federal law specifically supersedes state law.

The federal government affects state insurance regulatory policy and institutions in various ways. In several instances, Congress has instituted federal control over certain insurance markets or aspects of insurers' operations that were previously delegated to the states. In other cases, the federal government has established insurance programs, which are essentially exempt from state regulatory oversight, e.g., flood and crop insurance. Even the threat of such interventions has spurred the states to take actions to forestall an erosion of their regulatory authority.<sup>14</sup>

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<sup>13</sup>See also Meier(1988), Advisory Commission on Intergovernmental Relations (1992), and Harrington (1999) for a review of various attempted federal interventions into insurance regulation.

<sup>14</sup>For example, when the failure of a number of substandard auto insurers prompted the introduction of federal legislation to create a national guaranty fund system in 1969, the NAIC moved quickly to adopt model guaranty fund acts for property/casualty and life/health insurers which were subsequently enacted by many states.

In a few instances, the federal government has set regulatory standards, which the states are expected to enforce. In the case of Medicare supplement insurance, for example, Congress enacted loss ratio standards, which the states were required to adopt to avoid relinquishing their oversight authority to the federal government. Additionally, Congress has significantly constrained state regulatory control over certain types of insurance entities, such as risk retention groups and employer-funded health plans. This has made market regulation more difficult when bogus groups claim federal preemption to avoid state oversight. Finally, federal policies in a number of other areas such as antitrust, international trade, law enforcement, taxation and the regulation of banks and securities have significant implications for the insurance industry and state regulation.

#### **4. Role and Structure of the NAIC**

Policing a large and diverse insurance industry that operates on an interstate basis is challenging for the individual states. Insurance commissioners have used their national association extensively in coordinating their regulatory activities. The NAIC is a private, non-profit association of the chief insurance regulatory officials of the 50 states, the District of Columbia, and the four territories. It was established in 1871 to coordinate the supervision of multi-state companies within a state regulatory framework, with special emphasis on insurers' financial condition. It expanded its activities to include market regulatory areas as these issues became more prominent. The NAIC functions both in an advisory capacity, as well as a service provider for state insurance departments.

The NAIC provides a vehicle by which the individual states can coordinate the exercise of their specific regulatory authorities. Commissioners use the NAIC to pool

resources, discuss issues of common concern, and align their oversight of the industry. Collective action can enhance as well as constrain the power of individual states. The credence given to NAIC policy positions and its ability to organize its members are substantial levers that help to standardize insurance regulatory policy across the country where the states deem standardization to be beneficial. At the same time, given its voluntary nature, the NAIC is relatively circumspect with regards to when and how it uses these levers. Ultimately, each state determines what actions it will take as only the states have the regulatory authority to govern insurers and insurance markets.

The NAIC supports state regulatory efforts in a number of ways, including:

- maintaining extensive insurance databases and computer network linking all insurance departments;
- developing and maintaining computer applications for regulators;
- analyzing and informing regulators as to the financial condition of insurance companies;
- coordinating examinations and regulatory actions with respect to troubled companies;
- establishing and certifying states' compliance with minimum financial regulation standards;
- providing financial, reinsurance, actuarial, legal, computer and economic expertise to insurance departments;
- assigning credit quality designations and valuing securities held by insurers;
- analyzing and listing non-admitted alien insurers;
- developing uniform statutory financial statements and accounting rules for insurers;
- conducting education and training programs for insurance department staff;
- developing model laws and coordinating regulatory policy on significant insurance issues; and

- conducting research and providing information on insurance and its regulation to state and federal officials and the general public.

State regulators are able to achieve considerable efficiencies by pooling resources through the centralized facilities provided by the NAIC. For example, it is much more efficient to have one central repository of insurer financial data than for every department to capture the same data from the same insurers. The objective is to allow states to focus their resources on regulation of their markets and the solvency of their domiciliary companies, relying on support services from the NAIC. As of June 1999, the NAIC had a staff of 343 and an annual budget of approximately \$40 million. Almost half of NAIC revenues come from fees paid by insurers with most of the remainder coming from the sale of database products, publications and meeting registration fees. Insurance departments also pay member fees to the NAIC proportionate to the premiums written in their jurisdictions.

## **B. Current Banking Regulatory Structure**

Banking in the U.S. is regulated by a mix of federal and state authorities, some with overlapping jurisdiction. Box 1 lists the different banking regulatory agencies and the entities they regulate. Essentially, one or more federal agencies have at least some supervisory responsibilities for virtually all banking institutions. Banks can elect to be federally chartered or state chartered. Even state-chartered banks are subject to some oversight by the Federal Reserve or the Federal Deposit Insurance Corporation (FDIC), depending on their participation in these institutions. The Federal Reserve is the principal regulator of bank holding companies, the Office of the Comptroller of the Currency is the

principal regulator of national banks, and the Office of Thrift Supervision regulates savings and loan associations. In addition, the National Credit Union Association (NCUA) regulates federally chartered credit unions. Finally, state regulators do have supervisory authority over state-chartered banks, but, as mentioned above, this authority is shared with the Federal Reserve Board if state banks choose to be members of the Federal Reserve System or the FDIC if they choose to be insured by the FDIC.

### **C. Optional Federal Chartering and Regulation of Insurers**

Various options involving increased federal regulation of insurance have been discussed over the years, including optional federal chartering and regulation of insurance companies. In this paper, we postulate one potential model of federal/state regulation of insurance for purposes of comparison. We assume that, under such a system, an insurance company could elect to be either federally chartered and regulated or state chartered and regulated. Federally regulated insurers would be authorized to sell insurance in any state without acquiring a state license or being subject to any state regulatory authority. A federal charter would preempt all state regulation regarding financial supervision or regulation relating to the status of an insurance company, as well as its market practices. This implies that the federal regulator would be responsible for supervising all aspects of such insurers, including solvency and market practices.

State-chartered insurers would be regulated much like they are under the current system. A state-chartered insurer would need to acquire a state license in every state in which it did business on an admitted basis. The domiciliary state would be the principal financial regulator. Non-domiciliary states would retain secondary financial regulatory

responsibilities, as well as provide primary oversight of the market transactions of all state-chartered insurers (domestic and non-domestic) operating within their jurisdiction.

It is unclear how insolvency guarantees would be handled under such a system. The most logical approach would be to establish a federal guaranty association for federally regulated insurers and retain the separate state guaranty associations for state-regulated insurers.<sup>15</sup> This would preclude the need for any federal oversight of state-chartered insurers. On the other hand, if state-chartered insurers participated in a federal guaranty association, then some degree of federal oversight would be needed to protect the federal government's interest in the insolvency guarantees provided to state insurers.<sup>16</sup>

The prospect for implementing regulatory reforms with the establishment of an optional federal regulatory system for insurers is an interesting question. It is possible, although not assured, that federal legislation could narrow the scope of the regulation of federally chartered insurers and also encourage the application of prudential solvency oversight concepts. Such policies could compel the states to reform their regulatory systems to avoid handicapping state-chartered insurers. On the other hand, there is the potential for "regulatory creep" at the federal level if interest groups were successful in pressuring federal officials to add regulations that serve their parochial objectives.

The sharing of authority and overlapping jurisdiction among regulatory agencies could worsen or improve the quality and efficiency of insurance regulation. For example, if the federal government was responsible for the solvency oversight of insurers, but the states retained authority over their market practices, conflicts could arise. The states

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<sup>15</sup> This is essentially how the FDIC, FSLIC, and state funds operated prior to the savings and loan crisis of the 1980s. There might be a concern that state guaranty associations would be more vulnerable to capacity problems if a large number of insurers opted for federal regulation.

would have further incentives to suppress rates, which would undermine federal solvency objectives. Alternatively, federal and state authorities could be structured so as to create checks and balances and discipline regulators. For example, if an insurer belonged to a federal insolvency guaranty system, the administrator of that system could be authorized to enforce solvency standards that would override politically motivated actions by other regulators that would increase the insurer's financial risk.

## **IV. Types of Regulatory Costs**

### **A. Regulatory Expenditures**

The most obvious but smallest portion of insurance regulatory costs are direct expenditures on regulation. Since 1988, the NAIC has been conducting an annual survey of state insurance departments on their budgets, staffing and other aspects of their activities. The data from this survey provide a basis for assessing current expenditures on insurance regulation. The more difficult task is to determine how these costs might change under an alternative federal regulatory structure. The fact that state expenditures on insurance regulation represent a minor fraction of industry revenues suggests that even a large reduction in direct regulatory expenditures would have a small impact on overall industry regulatory costs. At the same time, the number of regulatory personnel and their demands on insurers can also affect insurers' compliance costs.

#### **1. Staffing and Budgets of State Insurance Departments**

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<sup>16</sup> See Ely (1999) for a discussion of guaranty association issues involved with federal chartering.

The size of state insurance departments varies significantly depending on the size of their markets and other factors. In 1997, the number of state insurance department personnel ranged from 24 in South Dakota and Wyoming to 1,135 in California (see Table IV.1).<sup>17</sup> The insurance departments in the four U.S. territories have smaller staffs than the states. Total full-time equivalent staff for all departments combined amounted to 10,149, in addition to 1,700 contract staff. Insurance department staff includes actuaries, financial examiners and analysts, rates and forms analysts, market conduct examiners, consumer service personnel, attorneys, fraud investigators, and systems analysts.

For fiscal year 1999, state department budgets ranged from \$1.3 million in South Dakota to \$127.5 million in California, with a total combined budget for all departments of approximately \$797 million. The size of state insurance departments tends to vary with the volume of business that they regulate, although there is not a perfect correlation. States that have more domiciliary companies, that regulate more intensively, or that provide special services (e.g., in-house liquidators) tend to have larger staffs and budgets. Public and legislative support for insurance regulation also affects department resources. The support services provided by the NAIC reduce the need for expenditures by state insurance departments.

Insurance departments draw their funding, directly or indirectly, from: fees; assessments; and premium, retaliatory and other business and income taxes.<sup>18</sup> These sources accounted for 98.7 percent of the \$10 billion in revenues that states received from

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<sup>17</sup> Unless indicated otherwise, figures on state insurance departments were obtained from the NAIC's *Insurance Department Resources Report 1997*.

<sup>18</sup> Insurance departments are not funded by direct premium taxes on the industry. Premium taxes raised from the industry go to the general fund where they are allocated to all governmental services. However, some states allow insurance departments to charge fees for regulatory services provided. For example, these fees would include fees to cover the cost of an insurer's solvency examination.

the industry in 1997.<sup>19</sup> The relative “burden” of state insurance taxes and fees as a percentage of total premiums was 1.3 percent.<sup>20</sup> This figure has steadily declined since 1988 when it was 1.7 percent.

Regulatory budgets represent only about 7.4 percent of revenues collected from insurers, but, presumably, these revenues support other state services from which insurers (and their policyholders) benefit. This figure has increased steadily since 1986 (when the NAIC began to track it) when it was 4.5 percent. Some insurance departments have partial or full dedicated funding which allows them to fund their operations directly from fees and assessments. Other insurance departments are funded solely from general fund appropriations, which tend to impose greater budget constraints as these departments are forced to compete directly with other state agencies for scarce resources.

The states have significantly increased the resources devoted to insurance regulation in recent years. From fiscal year 1990 to fiscal year 1999, funding for state insurance departments increased by 80 percent (see Figure IV.1). The increased funding has been used primarily to raise staffing levels, boost salaries to attract and retain more qualified staff, and improve automation to enhance staff productivity. Departments have significantly enhanced their use of computers and upgraded their information systems. The increase in staff and enhanced automation has allowed regulators to substantially boost the quality and intensity of their financial oversight of insurers as well as expand

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<sup>19</sup>This figure does not include payroll, sales or property taxes paid by insurance companies to state and local governments.

<sup>20</sup>Most state premium tax rates fall in the range of two to three percent, but various premium tax exclusions and credits reduce effective tax rates below nominal rates.

consumer protection activities. Staff and budget growth in many departments has begun to plateau as they meet their resource objectives.

Figure IV.1 also shows total regulatory expenditures as a percentage of industry premiums and investment income. We can see from this figure that regulatory expenditures have increased, but remain a very small fraction of industry revenues, roughly 0.08 percent, over the last decade. With budgets leveling out and no new major state initiatives planned, relative regulatory expenditures are unlikely to increase in the near future unless the states were given additional responsibilities or compelled to further enhance the quality or intensity of their oversight activities.

While the NAIC data do not indicate how regulatory expenditures are divided among the various regulatory functions, this might be inferred from the breakdown of personnel by job category. Table IV.2 shows the allocation of regulatory staff (including contract employees) by position and function. Regulators working in the financial area represent 21.9 percent of total staff. Rates/forms analysts constitute 5.7 percent, market conduct examiners 3.6 percent, and consumer services staff 12.3 percent of total staff. If we assume that the allocation of regulatory expenditures and supervisory and support personnel follows the allocation of line personnel, financial regulation would account for close to 50 percent of total expenditures. This allocation may be significant in terms of the effect of reconfiguring state regulatory priorities or changing the institutional structure for regulation, as discussed below.

## **2. Implications of Changes in Regulatory Activities or Structures**

It is conceivable that the states could reduce the number of regulatory personnel and associated expenditures by limiting their market regulatory functions to the most essential areas, as discussed above. Eliminating prior approval requirements for rates and forms in all lines and curtailing filing requirements for most commercial products could reduce the need for rates/forms analysts and actuaries. Indeed, many states are already moving in this direction. According to our estimates in Table V.2, a 75 percent reduction in rates/forms personnel would reduce regulatory expenditures by \$75 million or 10 percent. There would still be a need for some personnel and expenditures in this area for monitoring and enforcement activities. Further, these changes would be unlikely to reduce the number of market conduct examiners and consumer service personnel.

It is not clear that significant reductions in financial regulatory personnel would be possible under the current state system without impairing the quality of financial oversight. While a prudential regulatory approach might be more effective and efficient than the current prescriptive regulatory approach, it is not obvious that the latter would require fewer personnel and reduce associated expenditures.

Moving to an optional federal regulatory system could reduce expenditures in some areas depending on the functions that were performed. Table IV.3 compares the regulatory expenditures of state insurance departments (including the NAIC) with other financial regulators. This comparison suggests that state insurance regulation is relatively costly, although some of this disparity could be caused by differences in the scope of regulatory activities as well as the regulatory jurisdictional overlap among the various agencies. In relation to the amount of assets of regulated entities, insurance regulatory

expenditures are the highest at .023 percent; this percentage ranges from .011 percent to .019 percent for other financial regulatory agencies.<sup>21</sup>

Grace and Phillips (1999) estimate some parameters on the costs of regulating the insurance industry at the state level by examining the multiproduct cost efficiency of the state based regulatory system. They find that the largest one-third of the states experience decreasing returns to scale in the production of regulation. The smaller states, in contrast, experience increasing returns to scale. Grace and Phillips assert that the reason the largest states experience decreasing returns to scale is because of a free-rider problem that exists between the larger and smaller states in terms of solvency regulation. If the federal government took over the solvency regulatory function, then the free-rider problem could be eliminated. Regulatory expenditures also be reduced to the extent that state insurance departments have to duplicate some of the fixed investments in infrastructure that support solvency regulation. Grace and Phillips also find little evidence of economies of scope in state regulatory functions. Thus, a separation between federal and state regulation on a functional basis would not necessarily increase total regulatory expenditures.

Given that the states rely primarily on insurers' domiciliary states for solvency oversight, moving to a federal system would not necessarily significantly reduce the number of personnel in this area, although the need for personnel to perform secondary monitoring of non-domiciliary insurers would be eliminated. As noted above, there also might be some savings with respect to maintaining a technological infrastructure for financial regulation by housing this responsibility under one organization. The savings would be less if a significant number of insurers remained chartered and regulated at the

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<sup>21</sup> This comparison might be somewhat biased against insurance regulation as property-liability insurers tend to have less assets in relation to the scope of their activities compared to life insurers and banks.

state level. For the sake of discussion, a 25 percent reduction in financial regulatory personnel under a federal system would imply annual savings of \$100 million, representing 13 percent of total regulatory expenditures.

If the current level of market regulation was performed by a federal agency based on a uniform set of regulations, there could be a significant reduction in the number of rates/forms regulatory personnel and expenditures. The reason for this is that, under the current system, each state regulates the market activities of all insurers operating within its jurisdiction and there is little if any reliance on an insurer's domiciliary state for this regulation. At the same time, the decrease in personnel performing market conduct examinations and responding to consumer inquiries and complaints might be small. If we assume that moving to federal regulation would reduce the need for market regulatory personnel by 25 percent, the implied savings would be \$100 million annually or 13 percent of total expenditures.

The discussion above suggests that federal regulation of both insurer solvency and market activities could reduce direct regulatory expenditures by as much as \$200 million annually or 25 percent. This kind of reduction would bring relative insurance regulatory expenditures closer to those for other financial institutions. However, this figure represents only .002 percent of industry revenues so its overall impact on industry costs would be minimal. Moreover, if a significant number of insurers remained under state regulation, the savings would be less. Much more important are the expenditures that insurers must make to comply with state regulations. The next subsection discusses these costs in a qualitative sense. In Section V, we develop empirical quantitative estimates of these costs.

## **B. Direct Compliance Costs**

Complying with state regulations requires insurers to perform a number of tasks with associated expenditures on personnel and other expenses. These tasks include:

- submitting applications for licensing;
- submitting financial and statistical reports;
- paying for independent audits and regulatory examinations;
- preparing and submitting rates and forms filings;
- ensuring internal compliance with state regulations;
- responding to regulatory inquiries; and
- paying taxes, fees and assessments.

There is little doubt that a state-based regulatory system significantly increases insurers' regulatory compliance costs. Many of the activities listed above must be performed for every state in which a company conducts business on a licensed basis. The additional compliance costs imposed by state financial regulation are probably less significant than the additional compliance costs imposed by state market regulation. The states have generally adopted uniform NAIC financial reporting forms, although some states require special adjustments for supplemental reports. Also, the states generally rely on financial examinations performed by an insurer's domiciliary state or NAIC-coordinated zone exams. It is rare for a non-domiciliary state to conduct its own separate financial examination.

Filing separate licensing applications in each state is probably the greatest concern of insurers in the financial regulatory area. The average market value of a state

license has been estimated at \$50,000, which provides some indication of the cost of the licensing process. In response to industry concerns about repetitive and inefficient state licensing processes, a number of states and the NAIC are working on an approach that would significantly reduce the duplication of effort in filing for multiple state licenses (Klein, 1999).

It is apparent that costs of complying with individual state market regulations are high. The states' market regulations and procedures vary much more than their financial regulations and procedures. An insurer must make a separate rate and form filing for each product it sells in every state in which it sells the product. Any change in rates or policy forms also must be filed and justified. Moreover, the regulations and procedural requirements governing these products and filings differ by state. Extensive filings are required and often go through a lengthy process and frequent iterations before they are approved. An insurer also may have to undergo regulatory hearings on some filings. A significant number of insurer personnel are dedicated to the preparation and process of state rate and form filings.

Insurers also complain that complying with state market conduct regulations is costly. Unlike financial examinations, many states perform separate market conduct examinations on domiciliary as well as non-domiciliary examinations. Consequently, a company may undergo a number of market conduct examinations every year. The concept of single or coordinated market conduct examinations has been rejected by state regulators on the basis that state laws and regulations governing market conduct vary significantly among states. Variation in state market conduct standards further increases insurer compliance costs.

## **2. Implications of Changes in Regulatory Activities or Structure**

Some savings in compliance costs associated with financial regulation probably could be achieved by moving to a federal regulatory system. Insurers under a federal charter would only need to prepare reports for and respond to inquiries from one regulator, rather than multiple regulators. However, given the current degree of uniformity among states and reliance on the domiciliary regulator, it is unlikely that federal regulation per se would result in huge relative reductions in financial compliance costs. Movement to a prudential financial regulatory approach could further reduce some of the paperwork and internal compliance monitoring imposed on insurers.

Relatively larger savings in compliance costs could be achieved by reducing the scope of market regulation and/or imposing greater uniformity through a federal system. Complying with a uniform set of market regulations and filing with only one regulatory agency would greatly reduce insurers' need for compliance personnel and other expenditures. Confining market regulation to key areas such as policy forms for individual consumer products, marketing practices and claims handling would further lower compliance costs. Some sense of the potential magnitude of such savings is provided in the next section where we estimate current compliance costs.

### **C. Effects of Regulation on Market Efficiency**

Finally, we come to the most obscure but potentially the most significant area of regulatory costs – the implicit or intangible effects of regulation on market efficiency. By this we mean the effect of regulation on social welfare or combined consumer and

producer surplus, beyond the tangible expenditures on regulation and regulatory compliance. Regulation has the potential to both increase and decrease consumer and producer surplus. When regulation corrects significant market failures, it potentially increases social welfare. For example, if regulation reduces insolvency costs and increases consumer confidence, and these “benefits” exceed other costs imposed by such regulation, then there should be a net addition to social welfare. On the other hand, when regulation restricts consumer choice and distorts market decisions and there is no commensurate benefit to consumers, then social welfare is reduced. Below we discuss how these intangible benefits and costs might be affected by changes in regulatory policies and structures.

## **1. Insolvency Costs**

There are some data on insurance insolvency costs. Since state guaranty associations were established in the late 1960s, national organizations have tracked the amount of payments made to policyholders of insolvent insurers and assessed back against all the members of the guaranty associations. Figures IV.2 and IV.3 chart the number of insurer insolvencies and guaranty association assessments. Total payments/assessments amount to \$10.3 billion over the years 1976-1995. On an annual basis, guaranty association assessments have averaged less than 0.5 percent of industry premiums. These figures do not include insolvency costs that were not covered by guaranty associations, although these costs are probably relatively small. Also, the intangible costs of solvency regulation on market transactions are not reflected in these figures.

Assessments rose sharply in the middle 1980s for property-liability insurers due to an increase in the frequency and size of insurer failures. A similar pattern occurred slightly later for life-health insurers. The increase in insurer insolvencies can be attributed largely to external economic shocks, but there were also criticisms of the quality of state insurance regulation (see *Failed Promises*, 1990; U.S. General Accounting Office, 1991). Since the early 1990s, insolvencies and insolvency costs have fallen dramatically and have remained at a low level.

The burden of insurer insolvency costs is distributed among policyholders, taxpayers and the owners of insurance companies (Barrese and Nelson, 1994). Insurers can pass a significant portion of guaranty association assessments through to policyholders through rate surcharges and to taxpayers through state and federal tax credits and deductions.<sup>22</sup>

It is possible that federal regulation could reduce insurer insolvency costs, but the savings could be small given that insolvency costs have been relatively low in recent years. Federal solvency regulation of interstate insurers could be more effective and efficient, however. Also, state receiverships of insolvent insurers have been criticized for their inefficiency and high expenses. Bohn and Hall (1996) found that the cost of insurance company insolvencies were three times as high as bank insolvencies when insolvency costs were measured in relation to pre-insolvency assets. The impact of federal solvency regulation would depend heavily on how federal regulators would respond to and counter new economic pressures on insurers or other factors that would

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<sup>22</sup> Property-liability insurers are able to pass a significant portion of guaranty fund assessments to consumers through rate surcharges. Life insurers, on the other hand, must rely more heavily on tax credits and deductions because of the long-term nature of life insurance contracts.

prompt insurers to greatly increase their financial risk. In other words, if insurers were threatened by a major solvency crisis, federal regulators might be in a better position to use the power and resources of the federal government to ameliorate the crisis.

On the other hand, some have expressed the concern that a singular regulator can also be a problem if the regulator implements bad policies. Supporters of state insurance regulation point to the failures of federal thrift and bank regulators in the 1980s. One advantage of the current state system of regulation is that non-domiciliary states provide a check on omissions by an insurer's domiciliary regulator.

## **2. Other Market Corrections and Distortions**

In addition to affecting insolvency costs, insurance regulation potentially imposes other market corrections and distortions. Financial regulation imposes some market costs even if it is deemed to provide net benefits to policyholders. Financial regulation raises barriers to entry, restricts insurers' risk and investment portfolios, and limits the products and terms they can offer. These costs are probably affected more by the states' approach to financial regulation than the institutional structure for regulation. Moving to a prudential regulatory approach could substantially reduce the market costs of arbitrary legal restrictions on insurers' investments and other transactions. Simply shifting the enforcement of prescriptive regulations from the states to a federal regulator would seem to have little effect on intangible regulatory costs.

The intangible costs of the current system of market regulation are probably much greater. Price regulation distorts market signals and incentives for efficient risk management. For example, if rates are suppressed, insurance buyers have less incentive

to lower risk and control losses (Danzon and Harrington, 1998). Restrictions on policy forms limit consumers' options and ability to purchase contracts that might better fit their needs and preferences. Some market conduct regulations also may distort insurance transactions.<sup>23</sup> Moreover, the delays involved in filing and getting rates and forms approved impose additional market costs.

As with financial regulation, the optimality of market regulation has to be judged in terms of both benefits and costs. Benefits to consumers are more likely to exceed market costs for the most essential market regulatory functions identified in Section II. Market costs likely exceed consumer benefits for non-essential functions, such as price regulation and prior approval requirements for commercial insurance contracts.

There are different views on whether assigning market regulation to the states benefits consumers. On the one hand, the necessity of dealing with multiple regulators and varying state requirements imposes some additional intangible costs on insurance transactions. For example, the need to make filings in multiple states could add to the delays in introducing rate and product changes

Economic theory suggests the Pareto optimal provision of a public good such as regulation will be achieved when it is produced by the most decentralized layer of government capable of internalizing all the economic costs and benefits associated with regulation (Inman and Rubinfeld 1997; Oates 1972). The primary advantage of having more localized units of government produce public goods is that smaller jurisdictions are more likely to be responsive to the tastes and preferences of the local citizen's and therefore can tailor the quality and level of output to maximize their welfare. This

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<sup>23</sup> For example, in some instances, regulators may pressure insurers to pay claims that are not covered under a strict interpretation of their insurance contracts.

advantage, however, must be weighed against the inefficiencies of decentralization that could include possible spillover effects between jurisdictions and the possibility that the jurisdiction may be too small to capture any economies of scale that may be associated with the production of the regulation.

Supporters of state regulation argue that it is more responsive to the needs and preferences of consumers in a state. The strength of this partly argument depends on how much the regulatory needs and preferences of consumers vary among states. It is not obvious that the citizens of New Jersey have significantly different preferences for insurer regulatory policies than the citizens of Illinois. The greatest advantage of state regulation may not be the ability to vary regulatory policies, but rather the responsiveness of regulatory personnel in addressing complaints and providing other consumer services.

## **V. Estimation of Regulatory Compliance Costs**

Regulators can impose costs on society that are like the deadweight losses imposed by taxation. Regulation that increases the cost of doing business without an associated benefit is thus borne by capital owners, employees, and consumers and it is not necessarily clear which group bears the incidence of this type of regulation. Regardless of who bears the burden, regulation can raise the cost of a product, decrease returns to equity owners, or lower the employee's wages.

There are potentially many ways to show the cost of regulation imposed on the industry. We choose a simple way that looks at the property-liability industry. We focus on the compliance costs measured by those increased costs associated with doing

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business in “restrictive regulatory climates” or, alternatively, in each additional state where the insurer decides to do business.

### **A. Data and Methodology**

If regulation imposes costs on a firm, then it should show up in the expenses of the firm. Higher expenses, all other things held constant, should exist in those environments that are more heavily regulated. We employ four measures of expenses that are obtained from the NAIC Annual Statement Tapes (Page 12 of the Property-Liability Statement) at Georgia State University. The first (E\_PRAT) is the ratio of total expenses to total direct premiums written. This shows the effect of regulation on the total expenses (relative to premiums) of the firm. The other ratios reflect salary expenses to total premiums written (S\_PRAT), claims costs expense to total premiums written (C\_PRAT), and licenses and fees to total premiums (F\_PRAT). Changes in S\_PRAT are presumed to reflect the additional employee time spend on dealing with regulation and can be thought of as an indication of compliance costs. C\_PRAT reflects the cost of resolving claims and changes in C\_PRAT can be thought of the effect of regulation on resolving claims. Finally, F\_PRAT represents the (not-tax) costs paid to the state for regulatory services. Changes in F\_PRAT reflect the additional costs of license fees.

Table V.1 shows that E\_PRAT has a mean of approximately 38 percent while S\_PRAT is approximately 9 percent, C\_PRAT is approximately 7 percent and F\_PRAT is less than one-half of one percent. We employ each of these ratios as way of measuring, in a gross sense, the effect of complying with regulatory policies on the firm’s costs.<sup>24</sup>

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<sup>24</sup> It is possible that some regulation may actually cause the firm to make expenditures that are beneficial (in the sense of being profitable) for some insurers. Under regulatory accounting all expenses are treated

Conning and Co (1997) undertakes a semi-objective analysis of states based on their regulatory environment.<sup>25</sup> They examine the types of law governing the insurance industry. These include the type of rating law for personal lines, the status of various tort reform measures, whether the commissioner is appointed or elected, and the amount of the regulatory personnel in the state. Conning and Co. also employs some undisclosed qualitative assessments to obtain a ranking of states based on the states' regulatory environment. Conning and Co identified the bottom 10 states in their report and we refer to these states as having restrictive regulatory environments. This determination reflects Conning and Company's assessment that the state has a restrictive regulatory environment in the personal lines business (auto and home insurance).<sup>26</sup> We estimate the total amount of premiums written in each state with a restrictive environment for auto and homeowners insurance. The log of this amount (RES) is employed to determine the effect of non-essential regulation on the cost to the firm. Extraneous or non-essential regulation might include that type of regulation not consistent with the essential insurance regulation described above in Section II.

In this simple analysis, we employ two control variables. The first is a dummy variable for whether the company is a stock company. The second is a size variable that

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equally. However, not all "expenses" are "expenses" as some may be investments with a positive net present value. A better methodology would focus on the profitability of the firm in various environments. This paper assumes that all regulation imposes costs that do not have any corresponding benefits.

<sup>25</sup>In previous years, Conning and Co did a survey of senior insurance company executives to ask them to rank (or comment on) a state's regulatory environment.

<sup>26</sup>The states classified as restrictive are (in rank order) California, Nebraska, Tennessee, Mississippi, New Jersey, North Carolina, Washington, Massachusetts, West Virginia, and Delaware.

is the log of the total direct premiums written. This is employed along with its square as an attempt to control for potential economies of scale of the firm.<sup>27</sup>

## **B. Empirical Results**

Table V.2 shows our results. We estimate a tobit model for these ratios as they are bounded by 0 and 1. To account for significant heteroskedasticity we estimated a weighted model where the weight is the log of total assets. In terms of organizational form, stock companies appear to have significantly higher fee expense ratios and no significant relationship was found for any other expense ratio.<sup>28</sup>

The effect of size is also significant in every model. For total expenses, salaries, claims costs, and fees, the data suggest increasing returns to scale for the mean firm in the sample. The marginal effect of size in each case is significantly negative implying that as size increase, the expense ratio of each category decreases. This evidence of economies of scale is consistent with the results of the insurer efficiency literature (see Cummins and Weiss, 1992 and Berger, Cummins, and Weiss, 1998).

Examining the effect of regulatory environment, we see that writings affect the expense ratio only in one case. The amount of business in restrictive regulatory environments is positively and significantly related to the claims cost expense ratio. In

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<sup>27</sup> Our sample has 1,417 property-liability companies for the year 1997. We excluded companies with ratios of expenses to premiums greater than 1, companies with no assets, and those with no premiums.

<sup>28</sup> We use the stock dummy as merely a control variable. A large literature has developed to examine the differences between organizational forms. This literature suggests two things. First stocks and mutuals are equally profitable. They just undertake different strategies to mitigate agency costs. (See e.g. Meyers and Smith, 1986). Secondly, expense ratios do not account for the multiproduct nature of the firm nor do they accurately reflect the economic production function underlying the production of insurance. Further, in a case like this profit functions should be employed to account for the fact that some expenses generate positive benefits. (See e.g., Berger, Cummins and Weiss, 1998).

contrast, the number of states licensed is significantly (and positively) related to the other three expense ratios. It appears that these two indicators of regulation are orthogonal to each other. The restrictive environment appears to influence the cost of claims resolution while the number of licenses is related to expenditures on salaries and licenses and regulatory fees.

If we think of the salary expenses as the cost of dealing with different regulations among the states, we see that being licensed in more states increases salary expenditures and costs to the insurer.<sup>29</sup> This is true also for the amount of license fees paid by the insurer. An increase in the number of regulatory jurisdictions is associated with higher regulatory license fees.<sup>30</sup>

The elasticities shown in Table V.2 help in the overall interpretation of the results. For example, if the number of state licenses for the mean firm were to increase 10 percent, the expense ratio for salaries would increase by 0.78 percent. Similarly, if the number of state licenses for the mean firm were to increase 10 percent, then the amount of regulatory license fees would increase 2.1 percent. Finally, if the percent of premiums written in restrictive regulatory environments were to increase by 10 percent, then the claims expenses ratio would increase by approximately one-half of one percent. A very rough estimate of total regulatory compliance costs would be roughly \$4.5 billion,

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<sup>29</sup>This, as well as the following, discussion assumes that the increased costs can not be passed on to the consumer. Thus the denominator of the expense ratio is constant. This assumption is accurate when and if the individual firm has no ability to raise price. This would be true in relatively competitive markets such as the personal lines markets.

<sup>30</sup> It should be noted that insurers sometimes have licenses in states in which they are not currently writing any business and, hence, would not be making any rates and forms filings. In further research we will attempt to refine this variable by counting the number of states in which a company actively writes business.

representing less than one percent of industry premiums.<sup>31</sup> Readers are advised to not place too much emphasis on this figures given the preliminary nature of our estimates.

We find evidence of regulatory costs associated with non-essential regulation. This is due to insurers writing in restrictive regulatory environments. We also find that costs are higher the larger the number of states a firm is licensed. To the extent that: 1) a federal model will reduce non-essential regulation; and 2) to the extent that non-uniform market conduct regulation across the states increases costs without associated benefits, then a federal model might reduce the costs of regulation on the industry.

## **VI. Conclusions**

In sum, we conclude that the potential savings from optional federal chartering depend greatly on the scope and policies of federal regulation and how they would differ from the state regulatory system that may evolve in the future. We argue that there would be some tangible savings from federal regulation, probably small, in the area of solvency or financial regulation. Much larger potential savings could be achieved from delegating market regulatory functions to a federal entity. Even then, the amount of savings in terms of tangible regulatory expenditures and compliance costs could be small relative to industry premiums, less than one percent or \$5 billion. Further research could yield smaller or larger estimates of regulatory compliance costs and savings from optional federal chartering.

The intangible costs of regulation in terms of market outcomes are potentially much greater, although they would probably be less affected by the institutional structure

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<sup>31</sup> This estimate is based on the assumption that the average cost being licensed in a state is \$100,000 per state, that there are 3,000 companies that write business in multiple states, and that the mean number of

of regulation than the nature of its policies. Significant efficiencies could be achieved under the current state system or a dual federal-state system by eliminating non-essential market regulations and standardizing those regulations that are retained. Prudential solvency regulation also could significantly reduce intangible market costs. Hence, the scope and design of insurance regulatory policies is probably more important than whether authority resides with the federal government or the various states. However, one's view of this could be different if structural changes facilitated reforms in regulatory policies. Whichever institutional structure is chosen, the primary focus should be on developing effective and efficient regulatory policies.

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**Table III.1**  
**Property-Liability Insurance Trends**  
**1960-1995**

	1960	1970	1980	1990	1995
<b>No. of Companies</b>	n/a	2,800	2,953	3,899	3,358
<b>Assets</b>	30,132	55,315	197,678	556,314	765,230
<b>Income</b>	15,741	36,524	108,745	252,991	296,637
<b>Net Premiums Written</b>	95.1	94.3	89.6	86.9	87.6
<b>Investment Income</b>	4.9	5.7	10.4	13.1	12.4
<b>Mkt. Share of 10 Largest Insurers</b>	34.4	36.8	38.2	40.3	40.0
<b>Premiums/Surplus</b>	125.5	210.2	183.4	157.6	113.0
<b>Return on Net Worth</b>	n/a	11.6	13.1	8.5	9.0

**Source: NAIC, A.M.Best, and Insurance Information Institute**

**Table III.2**  
**Life-Health Insurance Market Trends**  
**1950-1995**

	1950	1960	1970	1980	1990	1995
No. of Companies	649	1,441	1,780	1,958	2,195	2,300
Assets (\$millions)	64,020	119,576	207,254	479,210	1,408,208	2,000,000
% 10 Largest Co.'s	n/a	62.4	57.7	52.5	36.7	30.0
Income (\$millions)	11,337	23,007	49,054	130,888	402,200	500,000
% Life Insurance Premiums	55.1	52.1	44.2	31.2	19.1	15.0
% Annuity Considerations	8.3	5.8	7.6	17.1	32.1	35.0
% Health Insurance Premiums	8.8	17.5	23.2	22.4	14.5	10.0
% Investment Income	18.3	18.7	20.7	25.9	27.8	25.0
% Other	9.5	5.8	4.4	3.3	6.5	5.0
Reserves (\$millions)	54,946	98,473	167,779	390,339	1,196,967	1,500,000
% Life	n/a	71.9	68.8	50.7	29.1	25.0
% Annuities	n/a	27.2	29.1	46.5	68.1	70.0
% Health	n/a	0.9	2.1	2.8	2.8	2.0
Net Rate of Investment Income (%) (a)	3.1	4.1	5.3	8.1	9.3	10.0
Capital Ratio (%) (b)	n/a	n/a	9.7	9.2	8.5	8.0
Return on Equity (%)	n/a	n/a	n/a	13.9	10.7	10.0

a. Net investment income divided by mean invested assets (including cash) less half of net investment income.

b. Capital plus surplus plus Asset Valuation Reserve (or Mandatory Securities Valuation Reserve prior to 1992) divided by general account assets.

Source: American Council of Life Insurance, A.M. Best, Fortune Magazine, and Forbes Magazine.

**Table IV.1  
Insurance Department Resources in 1997**

State	Number of Insurers		Direct Premiums Written	Revenues	FY 1999 Budget	FTE Staff
	Domestic	Licensed Non-Domestic				
Alabama	89	1,380	\$13,330,640,868	\$160,700,014	\$9,873,951	69.0
Alaska	10	1,088	1,572,340,407	33,483,294	4,192,400	50.0
American Samoa	N/A	N/A	2,517,242	N/A	N/A	N/A
Arizona	517	1,548	12,349,206,000	159,693,487	5,404,700	138.0
Arkansas	83	1,443	4,970,791,241	114,925,247	6,037,439	102.0
California	245	1,279	72,977,550,532	1,345,971,425	127,467,000	1,134.8
Colorado	90	1,372	13,114,189,038	117,229,739	7,900,000	95.4
Connecticut	135	1,000	13,976,729,766	222,671,522	15,564,918	164.0
Delaware	145	1,250	3,108,518,515	57,844,500	4,723,900	67.0
District of Columbia	15	1,301	3,679,096,915	47,216,450	7,000,067	62.0
Florida	477	1,858	33,292,936,170	465,904,567	64,104,297	1043.0
Georgia	112	1,484	18,676,739,133	444,725,115	17,241,858	168.0
Guam	5	90	219,718,617	N/A	1,337,730	8.0
Hawaii	86	888	4,540,992,000	80,064,656	5,513,038	47.0
Idaho	28	1,476	2,544,685,948	52,876,200	5,101,400	64.5
Illinois	503	1,467	41,246,624,335	208,898,251	25,704,900	353.0
Indiana	204	1,666	16,289,715,880	141,171,092	4,673,237	84.0
Iowa	228	1,386	7,078,414,176	121,352,272	6,780,647	90.0
Kansas	57	1,497	5,810,540,435	140,115,654	8,004,227	154.5
Kentucky	72	1,457	8,741,582,715	155,689,965	14,051,000	174.0
Louisiana	170	1,498	10,828,176,796	189,238,852	28,227,660	261.0
Maine	32	867	3,654,010,631	47,022,101	6,074,579	72.0
Maryland	106	1,374	11,949,994,966	182,476,085	15,379,409	249.0
Massachusetts	105	1,163	27,585,573,109	26,741,423	8,422,834	163.1
Michigan	152	1,245	33,934,211,000	184,061,182	16,398,500	127.0
Minnesota	210	1,231	15,332,392,246	169,979,326	7,024,299	121.0
Mississippi	77	1,446	4,471,202,770	113,922,784	6,395,409	114.0
Missouri	309	1,529	15,065,924,689	186,132,914	12,185,653	210.0
Montana	28	1,408	1,675,033,324	37,601,561	2,094,337	43.0
Nebraska	129	1,453	4,607,803,553	54,171,918	5,929,949	92.8
Nevada	36	1,434	4,168,605,397	103,927,948	4,189,275	65.0
New Hampshire	53	800	2,757,743,796	59,897,326	3,423,418	51.0
New Jersey	112	1,085	25,136,769,913	321,293,000	33,598,000	402.0
New Mexico	22	1,521	3,232,124,928	85,157,043	3,755,800	77.0
New York	395	723	68,719,274,707	921,734,925	96,827,000	865.0
North Carolina	111	1,207	20,136,932,922	288,027,916	33,088,000	388.0
North Dakota	55	1,380	1,878,393,939	27,465,475	2,917,657	45.5
Ohio	310	1,452	30,610,882,420	384,341,389	22,122,025	248.0
Oklahoma	123	1,470	6,228,947,887	138,785,717	6,843,245	122.0
Oregon	116	1,498	8,192,702,017	89,806,213	6,389,145	98.5
Pennsylvania	350	1,318	46,203,910,291	224,105,000	19,039,000	274.0
Puerto Rico	N/A	N/A	1,685,529,391	N/A	N/A	N/A

Rhode Island	35	1,017	3,691,816,758	47,284,787	3,365,084	53.0
South Carolina	53	1,424	7,405,544,356	103,867,326	6,179,489	107.0
South Dakota	60	1,444	2,003,604,572	39,441,485	1,295,371	24.0
Tennessee	130	1,534	15,834,515,190	278,049,932	5,981,400	91.0
Texas	572	1,529	52,472,811,479	770,488,033	48,330,067	1003.2
U.S. Virgin Islands	N/A	N/A	52,769,496	N/A	N/A	21.0
Utah	54	1,485	5,113,902,303	74,095,962	4,130,900	71.5
Vermont	329	778	1,962,380,659	31,883,710	4,407,168	49.0
Virginia	88	1,330	17,824,345,743	249,922,301	16,855,018	190.0
Washington	80	1,303	14,469,167,006	229,582,817	11,633,976	164.0
West Virginia	22	1,230	3,466,298,720	105,091,895	4,560,823	72.0
Wisconsin	342	1,476	15,600,165,174	104,186,783	7,917,200	121.7
Wyoming	5	1,211	1,026,964,622	12,100,537	1,303,843	24.0
<b>Total</b>	7,872		\$766,503,956,703	\$9,952,419,116	\$796,962,242	10,148.5
<b>Mean</b>	151	1,304	\$13,936,435,576	\$195,145,473	\$15,326,197	191

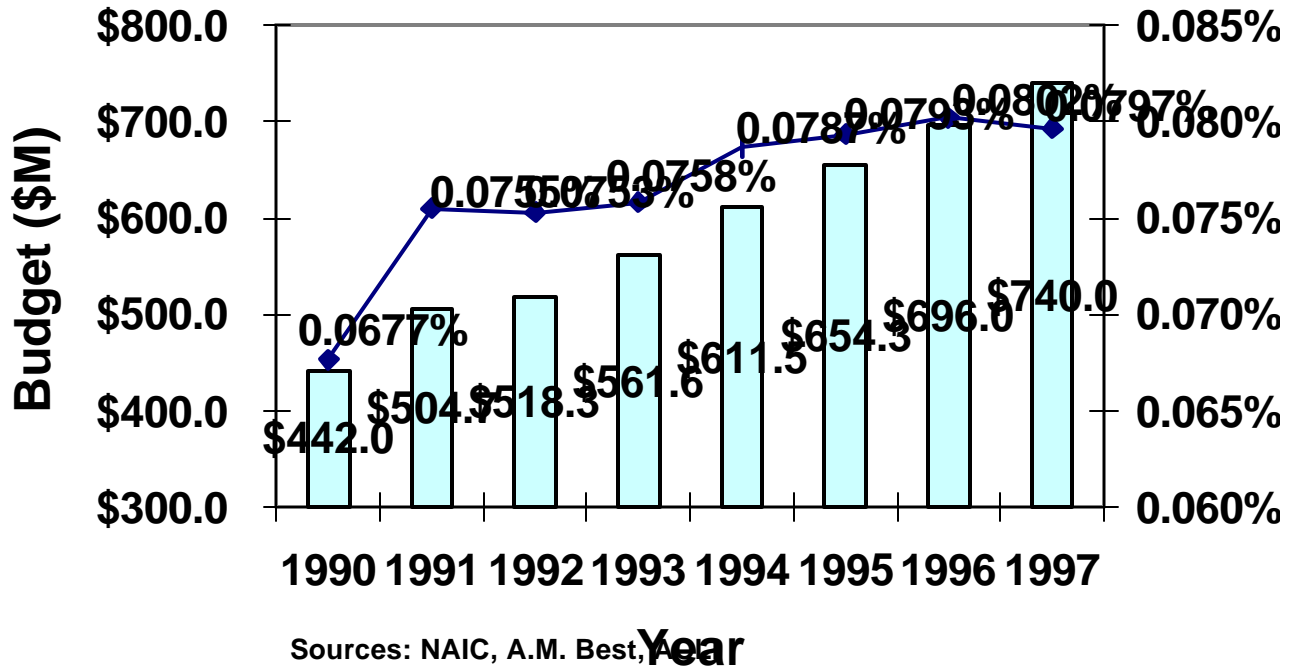
**Table IV.2  
Allocation of Regulatory Staff by Function**

<b>Position</b>	<b>Number</b>	<b>Percent</b>
Financial Examiners	1,198	10.1%
Financial Analysts	400	3.4%
Liquidators	927	7.8%
Company Licensing	66	0.6%
Rate/Form Analysts	676	5.7%
Market Conduct Examiners	425	3.6%
Actuaries	293	2.5%
Consumer Services	1,462	12.3%
Producer Licensing	381	3.2%
Other	6,020	50.8%
Total Staff	11,848	100.0%

Note: Figures include department and contract employees

Source: 1997 Insurance Department Resources Report (NAIC)

Figure V.1  
Insurance Regulatory Expenditures



**Table IV.3**  
**Financial Institution Regulatory Costs: 1997**

Regulatory Body	No. of Reg. Entities	Budget \$Millions	Asset \$Billions	Percent Budget/Assets	Per Entity Co
State Insurance Departments and NAIC*	7,872	\$ 785.4	\$ 3,433	0.023%	\$ 99,76
Federal Reserve System**	8,007	\$ 517.0	\$ 4,791	0.011%	\$ 64,56
Office of Comptroller of the Currency***	2,597	\$ 350.0	\$ 2,894	0.012%	\$ 134,77
FDIC	10,922	\$ 605.0	\$ 5,607	0.011%	\$ 55,39
Office of Thrift Supervision	1,215	\$ 151.0	\$ 777	0.019%	\$ 124,28
National Credit Union Association	11,238	\$ 46.3	\$ 351	0.013%	\$ 4,121

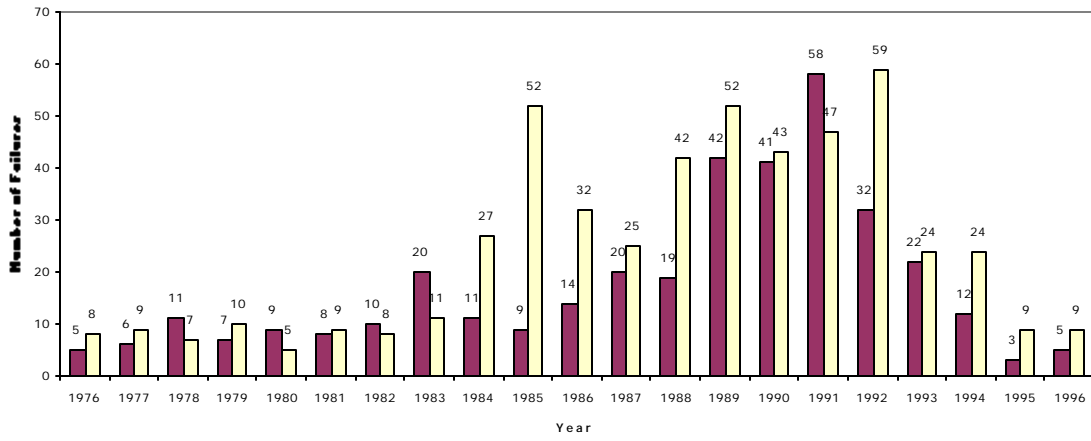
\*Includes Property-liability and Life, Health and Annuity Companies

\*\*Includes the number of state member banks and the number of separate banks belonging bank holding companies

Note: The Federal Reserve Board has overlapping jurisdiction with OTS and OCC;  
FDIC has financial regulatory authority over insured banks

Source: Official Budget Documents or Annual Reports for the various agencies.

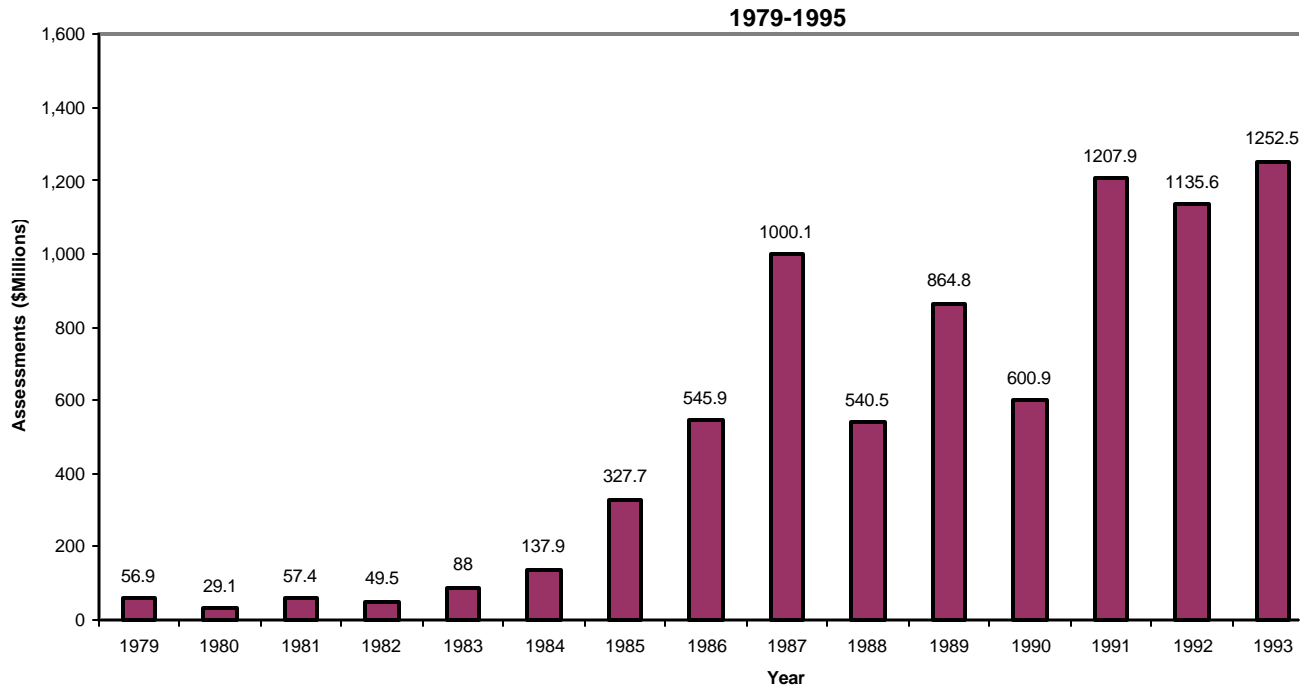
Figure IV.2  
Insurance Company Failures  
1976-1996



Source: A.M. Best and NAIC



**Figure IV.3**  
**Insurance Guaranty Association Assessments**



**Table V.1**  
**Descriptive Statistics**

<b>Variable Name</b>	<b>Variable Description</b>	<b>Mean</b>	<b>Std.Dev.</b>	<b>Minimum</b>	<b>Maximum</b>
E_PRAT	Total Expenses/Total DPW	0.3801	0.1988	0.0053	0.9970
S_PRAT	Salary Expenses/Total DPW	0.0936	0.0673	0.0001	0.7646
C_PRAT	Claims Expenses/Total DPW	0.0713	0.0767	0.0000	0.6470
F_PRAT	Licenses and Fees/Total DPW	0.0031	0.0061	0.0000	0.0742
STOCK	Stock Company Dummy	0.6678	0.4712	0.0000	1.0000
RES	Log of DPW in "Restrictive" Environment	1.9132	4.0082	0.6931	20.4741
LLIC	Log of State Licenses	1.6851	1.5598	0.0000	4.0073
LGTDPW	Log of Total Premiums Written	17.1573	1.8576	10.4118	23.8877
LTA	Log of Total Assets	17.8711	1.9222	12.5680	24.9638

**Table V.2**  
**Tobit Regression Results: Measurement of Costs Implications of Multistate Licensing and "F**

Variable	Variable Description	Ratio of Total Expenses to Premiums	E P
ONE	Intercept	1.7161***	
STOCK	Stock Company Dummy	(0.3089)	(
		-0.0177	
		(0.0111)	(
RES	Log of Total Auto Premiums Written in "Restrictive" Regulatory Environment	1.7161***	
		(0.3089)	(
LLIC	Log of Licensed States	0.0316***	
		(0.0040)	(
LGTDPW	Log of Total Premiums Written	-0.1290***	
		(0.0363)	(
SIZE2	Log of Total Premiums Written Squared	0.0028***	
		(0.0011)	(
Psuedo R2			
	Elasticity between "expense ratios" and total state licenses	0.0950	
	Elasticity between "expense ratios" and prems written in bad environments	0.0018	

Note: Regression weighted by the log of total assets.

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